SOME OBSERVATIONS ON THE THERAPEUTIC VALUE OF ANTIBACTERIAL SERUM IN THE TREATMENT OF THE SEVERE TYPE OF DIPHTHERIA.

THESIS

Submitted to

THE UNIVERSITY OF EDINBURGH.

For

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<th>Pages</th>
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</tr>
<tr>
<td>Appendix 4</td>
<td>230 - 235</td>
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</tbody>
</table>

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(a) **DISCOVERY OF THE ORGANISM OF DIPHTHERIA.**

To the epidemiologist, the bacteriologist, and the clinician, Diphtheria has presented many problems since the time of Bretonneau, 1826. Towards the solution of these, great advance was made, when in 1875 Klebs discovered the causative organism, the specificity of which was established by Loeffler in 1884.

(b) **ADVENT OF DIPHTHERIA ANTITOXIN.**

Treatment of this disease was entirely symptomatic until therapeutic antitoxin was prepared by Von-Behring in 1890. The use of his antitoxic sera extended rapidly in all civilised countries, and became the routine method of treatment by the middle nineties. Its acceptance was universal, and its efficiency established by the classical experiment of Fibiger, 1898. Since that time it has been the sheet anchor in the treatment of the disease. In recent years, its efficiency has been disputed by a few of the more critical pyretologists, and its value rather doubted.

(c) **THE BEHAVIOUR OF MORTALITY RATES OF DIPHTHERIA.**

Surveying the mortality rates from Diphtheria, prior to the introduction of Antitoxin, it is obvious that there was a rapid decline by nearly a half, prior to 1895.

The following table gives the case mortality of Diphtheria in the hospitals of the Metropolitan Asylums Board, London.
Since 1895 the decrease in mortality rate continued and to-day, if reports of Medical Officers of Health are consulted, death rates from Diphtheria vary from about 2% to 8%. This figure may be upset by many factors, such as:

(a) Improved methods of diagnosis.

(b) By increase in the number of carriers detected, which are notified as cases.

(c) By medical Superintendents of fever hospitals aiming at procuring a low death rate by including carriers in their estimation of fatality rate.

If a group of the more serious cases of Diphtheria, that is, the type requiring intravenous therapy, or those corresponding to Grade I and Grade II, according to Bie's Classification, treated in fever hospitals be analysed, it is found that the death rate may be between 20% and 30%. Surely this is a high figure, considering that there is alleged to be at the disposal
of clinicians a specific remedy.

The complacency which existed regarding specific therapy in Diphtheria was disturbed when Deicher and Agulnik, 1927, working in Berlin, recorded a steady rise in the mortality of Diphtheria in the Virchow Krankenhaus, from 5% in 1924 to 26.7% in the first five months of 1927, and a corresponding, though less marked rise, for the Alt Berlin as a whole. These observers held the view that this severe type of Diphtheria seemed to be intractable to the usual antitoxic therapy, and that the mortality rates were higher in the over 5 years of age, than in the under 5 years of age.

In 1928 and 1929, epidemics of Diphtheria of a grave type were reported from all parts of Europe. Lisle (Minet 1929), Prague (Feierbend and Schubert 1929), Italy (Cayrel 1930), Rumania (Simie 1931).

(d) DIFFERENTIATION OF C. DIPHTHERIA INTO ITS DIFFERENT TYPES.

In this country in 1931, Anderson, Happold, McLeod and Thomson contributed handsomely to our knowledge of the Diphtheria organism. Working in Leeds, they discovered that there were two principal forms of the Diphtheria bacillus. To one they assigned the name Gravis, to the other Mitis. They correlated their clinical significance, and found the former associated with severe, and the latter with mild types of clinical infection. Culturally, these types are distinguishable. The Gravis organism grows with a granular deposit and pellicle in broth; it has a flattened, lustreless colony of irregular outline, and actively ferments polysaccharides. The Mitis
organism grows with uniform turbidity in broth, has a convex and partly translucent light reflecting colony. It does not ferment, starch or glycogen, but is haemolytic. A proportion of strains, non-fermentors of starch and glycogen, and non-haemolytic, are described as an Intermediate form.

As far back as 1900, Klein had demonstrated that there were two strains of Diphtheria bacillus, one which was haemolytic, and the other which was not.

(e) SURVEY OF TYPES IN THIS COUNTRY.

The work of McLeod and his co-workers extended to other parts of this country, and typing of the organism was carried out in Hull, London, Staffordshire, Manchester and Edinburgh. Divergent results were obtained, but to a fair degree there was corroboration of the cultural classification of the Leeds workers. Allison, 1931, working in London, held the view that there was no satisfactory evidence that the severest types of Diphtheria were associated solely or even mainly with the Gravis strains, but more recently it has been considered that coincident with an increase in the severity of the disease in London, starch fermenting strains (Gravis) are showing a greater incidence, and typing has been more easily effected.

Menton, 1933, working in Staffordshire, found great difficulty in forming a clear cut classification, owing to the prevalence of Atypical strains.

In Edinburgh, Rankin and Wright, 1932, investigating this problem, came to the conclusion that no hard and fast bacteriological classification or clinical correlation could be
Number of Diphtheria cases and deaths notified in Hull during the years 1923 to 1932

<table>
<thead>
<tr>
<th></th>
<th>CASES</th>
<th>DEATHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1923</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>1924</td>
<td>200</td>
<td>60</td>
</tr>
<tr>
<td>1925</td>
<td>300</td>
<td>40</td>
</tr>
<tr>
<td>1926</td>
<td>400</td>
<td>20</td>
</tr>
</tbody>
</table>

Diagram showing the number of notified cases and deaths from 1923 to 1932.
arrived at. The number of cases they investigated was small, and they suggested that the Gravis organism did not occur in Edinburgh at that time.

Leete and Morrison, 1933, working in Hull, confirmed the findings of the Leeds workers, and suggested that the high incidence of Gravis infections probably accounted for the increase of (notifications) cases, and high fatality rate, that occurred towards 1931. (See graph).

H. S. Carter, 1933, surveying the behaviour of C. Diphtheria in Glasgow, found it possible to divide 99% of the strains into 3 types. He found that the Intermediate strain was the epidemic type and that Gravis only occurred in a less degree. He also observed that the severe infection, due to the Intermediate strain, responded well to antitoxic therapy.

Robinson and Marshall, 1934, applying the work of McLeod and his co-workers in the Manchester area, reached the conclusion that, apart from 1.5% of Atypical strains, the strains of C. Diphtheria in Manchester offered little difficulty in classification into three types, and they endorsed the contention of the Leeds workers that the Gravis type is a more potent cause of severe and fatal infection than the Mitis. In Manchester the Intermediate types were at least equal to the Gravis types, as regards the production of virulent infections, differing from the Intermediate types of Hull and Leeds, where the infection associated with them was definitely Intermediate. They observed that severe Mitis infections were readily controlled by antitoxin therapy, and that many Gravis and Intermediate cases were resistant to serum, even in very large doses.
Manchester.
Number of cases of diphtheria attributable to each of the 3 types.
These workers deduced from animal experiments that Gravis and Intermediate strains appeared to possess greater virulence than the Mitis, as judged by their power to invade and persist in the tissues of the animal body.

Robinson and Marshall, 1935, continuing their investigations, established that the epidemic type of C. Diphtheria had changed from an Intermediate to a Gravis strain (See graphs). They also established that antitoxin, even when given in large quantities on the 2nd and 3rd day of disease to the Gravis infections, sometimes failed to save life, whereas Mitis infections responded better even when the serum was given at a later date. They observed that Gravis and Intermediate cases were admitted to hospital on the average, a day earlier than the Mitis cases.

(f)

EVALUATION OF DIPHTHERIA ANTITOXIN.

Considering the recognition of the various types of C. Diphtheria and the fact that Gravis infections did not seem to respond quickly to antitoxic therapy, Povitski, Eisner and Jackson, 1933, writing on the effectiveness of standard Diphtheria antitoxin, clarified the position. These workers established that the toxins prepared from the different cultures of B. Diphtheria, Gravis, Mitis and Park Williams 8, were neutralised unit per unit. They demonstrated this fact by Guinea Pig inoculation, and by the Ramon Flocculation Test. Their results indicated that no matter from what cultures they are derived, the Diphtheria toxins are identical in their response to the Standard Diphtheria Antitoxin. They found that
B. Diphtheria Gravis caused death in Guinea Pigs, with a much smaller number of organisms than did B. Diphtheria Mitis. It seems from these findings, that the Gravis organism, possesses a greater invading power and ability to produce toxins in vivo more rapidly than the other strains. The results of their animal experiments indicated that the time factor was of enormous importance. They found that, after a fatal dose of a culture of B. Diphtheria Gravis, all infected Guinea Pigs were saved, when antitoxin was administered in 6 hours. When antitoxin was administered after 10 hours, some of the Gravis infected Guinea Pigs lived 3, 4 and 5 days, while the controls died the next day. When the antitoxin was administered after 14 hours, all the Gravis infected Guinea Pigs died in the same time as the controls. The majority of Guinea Pigs infected with Mitis and other cultures survived when the antitoxin was administered after 6 and after 10 hours, and a few when it was administered after 15 hours, but none survived when it was administered later than this. The inference to be drawn from this work is that the Gravis organism produces toxin more rapidly in vivo than do the other strains. The difference is, however, only in degree and not in kind. The two outstanding factors are the invasiveness of the C. Diphtheria Gravis and the time factor in the administration of the Diphtheria antitoxin.

Parish Whatley and O'Brien, 1932, carried out a series of investigations with both the Gravis and Mitis strains, and they found that serum prepared by the injection of Park Williams number 8 strain had the same protective power in
animals on infection with either strain.

These observers found that, not only were Mitis strains as virulent to animals as were Gravis strains, but they produced toxins having a greater potency. They suggested that the divergent results represented real local differences and might be related with the regional variations of Diphtheria.

(g) **STABILITY OF TYPE OF THE GRAVIS DIPHTHERIA ORGANISM.**

Considering the possibility that the difference in type of Diphtheria organism might be due to transmutation of the organism, the following work, which has been done on type stability, is quoted below:

Christison in 1933, working on the stability of Mitis, Intermediate, and Gravis types of B. Diphtheria, contended that the 3 main types of B. Diphtheria undergo variation in colony structure, in vitro particularly, after growth in bouillon, and the rough variants derived from Mitis strains would, at sight, be classified as Gravis, and the derivatives of the Gravis colonies as Mitis. She observed changes in the colony structure in the strains obtained from Leeds, as well as the strains isolated in Edinburgh. She concluded from these findings, and the fact that Atypical strains are isolated from time to time, that disassociation occurs in vivo as well as in vitro. She also found starch fermentation as a reliable criterion of type.

Robinson, 1934, showed that the Manchester types of C.Diphtheria revealed a high degree of type stability. He observed that it was possible to produce alteration in type in the Atypical
strains, both in vivo and in vitro. He explained the alteration in type from cultures of convalescent patients in hospital, as being due not to variation, but to cross infection.

(h) GEOGRAPHICAL SURVEY AND SEROLOGICAL GROUPING OF THE GRAVIS STRAIN OF DIPHTHERIA ORGANISM.

Having a Gravis strain as the predominant type of infection in Manchester, Robinson and Marshall undertook a serological classification of the Gravis organism. They completed an extensive survey of over 600 strains of the Gravis type from various parts of the world. This investigation was undertaken to determine the practicability of antibacterial serum therapy, as the existence of a large number of different serological types would constitute a serious bar to the efficient use of an antibacterial serum. These observers thought that from this point of view, the number of serological types did not militate greatly against the employment of antibacterial serum therapy. They discovered 5 well defined types of Gravis organisms and their distribution may be briefly tabulated as follows:-

<table>
<thead>
<tr>
<th>Place</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
<th>Type 5</th>
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<tr>
<td>Germany (6 towns)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>France (3 towns)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Poland (3 towns)</td>
<td>+</td>
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<td>+</td>
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<tr>
<td>Sweden (Stockholm)</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Hungary (2 towns)</td>
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<td>+</td>
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<td>+</td>
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<td>Czechoslovakia (4 towns)</td>
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<td>+</td>
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<tr>
<td>Egypt (2 towns)</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>Canada (Toronto)</td>
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<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>New York State</td>
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<td>Chicago</td>
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<td>Massachusetts</td>
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</tbody>
</table>
A serological grouping of the starch fermenting strains of C. Diphtheria was carried out on 106 strains (Ewing, 1933). There were five distinct serological groups. The members of type A, B and D conformed to the original Gravis description. Type C had an atypical colony form by which they were distinguishable. The fifth type X did not conform culturally to the description of the Gravis organism.

(1) VARIATIONS OF THE ANCILLARY TREATMENT OF DIPHTHERIA.

Much work has been done on the ancillary treatment of Diphtheria. Benn, Hughes and Alstead, February 1932, investigated a series of 89 cases of severe Diphtheria, treating them with combined antitoxin and dextrose insulin therapy. Their observations were controlled with a reasonable number of similar cases. The outcome of this investigation was encouraging, though not entirely satisfactory. The dextrose insulin treated group seemed to gain several insignificant advantages over the controls.

McLean, 1936, of Glasgow, carried out the sodium chloride ancillary treatment of Diphtheria, combined with antitoxin, and he came to the conclusion that the administration of extra sodium chloride to a series of cases of Diphtheria is associated with an improvement, as compared with a series that does not receive extra sodium chloride.

M. A. Peters, 1932, writing on the ancillary treatment of Diphtheria in Bristol, employed glucose and insulin and colloidal iodine. He reviewed a series of cases, comparing his old and new treatment. The type of Diphtheria present in Bristol has been severe since 1921. The following table summarises his experiments.
Notifications of Diphtheria, City of Manchester.
Deaths occurring in this series.
<table>
<thead>
<tr>
<th></th>
<th>Total Cases</th>
<th>Deaths</th>
<th>Case Mortality %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthodox Treatment.</td>
<td>1235</td>
<td>67</td>
<td>5.4</td>
</tr>
<tr>
<td>1928-1929.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Treatment.</td>
<td>2312</td>
<td>68</td>
<td>2.9</td>
</tr>
<tr>
<td>1930-1932.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A series of figures concerned with cases of the grave type of Diphtheria, where intravenous therapy was employed, is appended.

<table>
<thead>
<tr>
<th></th>
<th>Dangerously Ill Cases</th>
<th>% of total Admissions</th>
<th>Deaths</th>
<th>Case Mortality %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthodox Treatment.</td>
<td>243</td>
<td>19</td>
<td>67</td>
<td>27.5</td>
</tr>
<tr>
<td>1928-1929.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Treatment.</td>
<td>463</td>
<td>20</td>
<td>68</td>
<td>14.7</td>
</tr>
<tr>
<td>1930-1932.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is an obvious improvement in case mortality in the cases having the New Treatment, but unfortunately this is not controlled by a directly parallel control series. The New Treatment consisted of 90-120 cc of 20% glucose and colloidal iodine, given on admission, with intravenous antitoxin, with or without insulin.

(j) **BEHAVIOUR OF DIPHTHERIA INFECTION IN MANCHESTER.**

The cases of Diphtheria since 1933, in Manchester, showed a very steady rise. This increase in incidence was accompanied by an increase in severity, which is shown by the fact that the number of cases requiring intravenous therapy in 1930 rose from 31 to 317 in 1936. The fatality rate of cases occurring in this group average out at 28% (Graph appended).
Cases having Intravenous Antitoxin in Monsall Fever Hospital.

CASES. DEATHS.

No: of CASES.

DEATHS.
In view of the increased incidence of this severe type of Diphtheria, and that none of the ancillary forms of treatment had proved entirely satisfactory, it was decided to try an antibacterial therapeutic serum.

The basis of production of a serum antibacterial serum, which was prepared at the Royal Institute of Technology, was the isolation of the specific virulent type of Diphtheria bacillus in pure culture. The bacilli were grown in pure culture and their inoculum size was carefully controlled. After the contamination of the bacilli had been removed, they were incubated at 37°C for 24 hours. The growth was then suspended in saline containing 10% albumin. The suspension was clarified by centrifuging it through a layer of bismuth nitrate, as described in the next section. The serum density was 2,000 g/ml fluid. The doses were given without exception, given by the time of the onset of symptoms. The serum which produced the serum was used in the clinical trial, consisting of 141 cases of the contamination in 49 doses. During the period of 1933-1934, on 3rd June, 1935, the first dose was given. The number of cases increased by a reduction of 20 cases. The cases appeared to become more sensitive to the treatment, as time went on, and the immediate alleviation of symptoms were noted over 35 cases. The material used in the preparation was a concentrated preparation from a pool of sera, obtained from four bleedings, taken between the 3rd, 6th, 9th, and the 14th July, 1935. The concentration was affected by adding 40% of solid ammonium sulphate to the serum. The albumin fraction
PREPARATION OF ANTI-BACTERIAL SERUM.

Dr. Petrie of the Lister Institute was consulted regarding the preparation of a suitable serum, and the following outline described the lines that were adopted.

The following method of production of Gravis Antibacterial Serum, which was prepared at the Lister Institute, Elstree in 1934-1935, was undertaken by Dr. Petrie. Bacillary suspensions of a Gravis strain were prepared as follows:

Loeffler Serum in Roux bottles was sown with saline suspensions after the condensation water had been removed. After 18 hours incubation, at 37° Centigrade, the growth was suspended in saline, containing 4% Phenol. The suspension was washed by centrifuging it three times, and was then stored in the ice chest for a week, when it was found to be sterile. The final density was $2,000 \times 10^6$ bacilli per cc. The doses were, without exception, given to the horses intravenously. The horse which produced the Serum for the clinical trial, received a total of 1411 ccs of the suspension in 49 doses. During the period 22nd October, 1934, to 3rd June, 1935, the first dose was .1 cc. The doses were gradually increased to a maximum of 50 ccs. The horse appeared to become more sensitive to the doses as time went on, but the immediate allergic reactions were never severe. The material used in the trial was a concentrated preparation from a pool of Serum, obtained from four bleedings, taken between the 25th March, 1935, and the 14th July, 1935. The concentration was affected by adding 28% of solid ammonium sulphate to the Serum. The albumen fraction
was removed from the resulting globulin precipitate, by filtration through chain-cloth. The precipitate was dialised against tap water, at room temperature for 3 days. 1% sodium chloride, .35% Trikrisol and .35% ether was added to the dialised residue. This was then filtered through a Berkfeld candle. The degree of concentration of the original Serum, in terms of the volume of the dialysis residue, was about four times. The only method of titration available was the estimation of the agglutinin titre; the titre of the natural Serum, before concentration, was 1/6400.
EVALUATION OF ANTI-BACTERIAL SERUM BY ANIMAL EXPERIMENT.

Before subjecting the Anti-bacterial Serum to clinical trial, it was considered advisable to assess its effect when administered to animals. This work was undertaken by Dr. D. T. Robinson. In each experiment, 3 batches of Guinea Pigs were taken. The first received 1% body weight of serum intracardially or intravenously; the second 1% body weight of normal serum by the same route, and the third received no serum of any kind. The amount of antitoxin in the Anti-bacterial Serum was controlled by adding an equivalent amount to the normal serum. One hour later, all pigs received 10 M.L.D. of washed Gravis bacilli subcutaneously, into the shaved anterior abdominal wall. The results may be summarised by the following table.
Summary of Animal Experiment.

<table>
<thead>
<tr>
<th>EXPERIMENT</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
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<th>7.</th>
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<td>10</td>
<td>10</td>
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<td>6</td>
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The above results indicate that the Gravis Anti-bacterial Serum has a definite protective effect when given before the infecting organism.

Gundell and Erzin, 1936, writing on the specific therapy of Diphtheria, in relation to the different types of Diphtheria bacilli, the summary of their investigations is as follows:

Guinea Pigs were infected with the 3 types of Diphtheria bacillus - Gravis, Mitis and Intermediate. Serum was only successful in arresting Gravis infections if given not later than 8-24 hours after infection. In contrast, with Mitis infections, it is possible to save the animal, even if serum administration is delayed for a considerable time. In some cases, for instance, till long after the animals infected with Gravis organisms have died, despite Serum therapy. In Intermediate infections, as in Gravis, it was only possible to save animals infected if the serum was given not later than 24 hours after infection. Regarding protection against

<table>
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<th>Expt.</th>
<th>Gravis Anti-Bacterial Serum</th>
<th>Controls Normal Serum</th>
<th>Controls No Serum</th>
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<td>No.Died</td>
<td>No.of Pigs Injected</td>
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<td>1</td>
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<tr>
<td>TOTAL</td>
<td>64</td>
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infection, after prophylactic administration of Serum, it lasted about 10 days in Gravis and Intermediate infections, but at least 20 days in Mitis infections.

The details of this Therapeutic Serum were not described, it was referred to as a "curative" Diphtheria Serum.
CLINICAL INVESTIGATION.

A Gravis Anti-bacterial Serum having been prepared, which was definitely efficient in the protection of Guinea Pigs, when given prior to infection, and no untoward results accruing from its administration, it was decided to apply it clinically, as a therapeutic agent.

The clinical experiment was undertaken at Monsall Hospital, Manchester, and occupied the greater part of a year. It was started in November, 1935, and the last case to receive Serum was not discharged until October 17th, 1936. It must be indicated, at the outset, the nature of the cases which are being reviewed, and in order to convey the impression of these as accurately as possible to the reader, clinical records are available. The type of severity of these cases corresponds to Grade 1 and Grade 11 of Bie's Classification, which are cases where pseudo membrane completely covers the tonsils and adjacent mucous membrane, involving the greater part of the soft palate and uvula. As well as the local lesion, the systemic factor was also assessed, attention being paid to:

(a) Degree of prostration.
(b) Cardiac involvement.
(c) Severity of lymph-adenitis of neck.
(d) Nasal discharge.
(e) Foetor of breath.

Having determined that cases fell into this category, consideration was given to control the experiment by employing, as far as possible, cases of similar severity, age and sex, in order to arrive at a sound evaluation of the Anti-bacterial Serum.

It was decided to administer Serum to all severe cases of Diphtheria. These cases to form two series (a) Control,
(b) Treated, the cases to be designated as belonging to series (a) or (b) at the time of clinical assessment. Attempt was made to keep age distribution in each series as nearly as possible alike. The Control series received antitoxin and the usual ancillary treatment that was employed in the hospital. The Treated series received antitoxin and the usual ancillary treatment, but, in addition, Gravis Anti-bacterial Serum. It was thought that a useful initial dose would be 10 ccs intramuscularly, to be followed later by a second dose of 10 or 15 ccs, if the type of infecting organism was proved to be Gravis.

Keeping both series running entirely parallel was found to be difficult, as cases which were considered suitable, from the point of view of clinical severity, were often unsatisfactory from the bacteriological standpoint, the infecting organism proving to be Intermediate or Atypical Gravis in type. Having collected several of that type of case, i.e. clinically Gravis in type, but Intermediate or Atypical Gravis bacteriologically, it was felt that their inclusion, though remote from the immediate point of discussion, was too interesting to be ignored. Before going further, the question of the treatment of the Anti-bacterial Serum group requires explanation. It was considered inadvisable to withhold antitoxin from these cases, firstly on humanitarian grounds, and secondly from the point of view of public opinion, since antitoxin is the only known remedy of avail with a reputation that has been established during the past 50 years. The position regarding the assessment of a therapeutic agent is not the simple matter it
might have been, at the time of Fitigier’s classical experiment, who, because the reputation of antitoxin was not established at that time, was able to withhold it in his Control group, during his investigation. However, even though he seemed to prove conclusively the efficiency of antitoxin, his standard of judgment perhaps fell short of that of the more critical observers of to-day. (Pijper, C. 1937).

Regarding typing of the infecting organism, it was considered of primary importance, in an investigation such as this, that it was done accurately, efficiently and rapidly. In every case this was done by Dr. D. T. Robinson, who received throat swabs appropriately numbered from the hospital. He typed the organism in the Public Health Laboratory, Manchester, and communicated the results to the hospital immediately he was satisfied with the typing. This investigation of organism in all cases of Diphtheria was a routine procedure, as it formed part of an epidemiological study which was being done at that time.

The selection of cases was kept alternate, as far as possible, and the routine hospital treatment of both groups was common.

The following pages summarise the series of case notes which represent the clinical trial:-
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<th>Lab No</th>
<th>NAME</th>
<th>Age</th>
<th>Sex</th>
<th>Day of Adm</th>
<th>Day of Disease</th>
<th>A.D.S. and Route</th>
<th>A.S.S. and Route</th>
<th>Paralysis</th>
<th>Cardiac Complications</th>
<th>Other Sequelae</th>
<th>Days for Membrane to Clear</th>
<th>Remarks (if any)</th>
<th>Type</th>
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<td>F. Harris</td>
<td>M</td>
<td>7</td>
<td>2 3/4 hr</td>
<td>12</td>
<td>40,000 IM</td>
<td>30,000 IV</td>
<td>No Serum</td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>3</td>
<td>Discharged 59th Day</td>
<td></td>
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<tr>
<td>117</td>
<td>E. Wheeldon</td>
<td>M</td>
<td>10</td>
<td>5</td>
<td>12</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>3</td>
<td>Cardiac Failure I</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>J. Wood</td>
<td>M</td>
<td>11</td>
<td>3</td>
<td>12</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>3</td>
<td>Cardiac Failure I</td>
<td></td>
</tr>
</tbody>
</table>

#### INTERMEDIATE SERIES

<table>
<thead>
<tr>
<th>Lab. No.</th>
<th>NAME</th>
<th>SEX</th>
<th>AGE</th>
<th>Day of Disease on Adm.</th>
<th>Day of Death on Adm.</th>
<th>A.D.S. and Route</th>
<th>A.B.S. and Route</th>
<th>Paralysis</th>
<th>Cardiac Complications</th>
<th>Other Sequelae</th>
<th>Membrane Racks</th>
<th>Days for Membrane to Clear</th>
<th>Remarks (if any)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>271</td>
<td>A.W. Jones</td>
<td>M</td>
<td>6</td>
<td>5</td>
<td>12</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>6</td>
<td>Discharged 53rd Day</td>
<td></td>
</tr>
<tr>
<td>315</td>
<td>K. Leigh</td>
<td>M</td>
<td>6</td>
<td>5</td>
<td>10</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>3</td>
<td>Cardiac Failure I</td>
<td></td>
</tr>
<tr>
<td>280</td>
<td>E. Dillon</td>
<td>M</td>
<td>7</td>
<td>3</td>
<td>25</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>7</td>
<td>Discharged 40th Day</td>
<td></td>
</tr>
<tr>
<td>162</td>
<td>H. Bailey</td>
<td>M</td>
<td>8</td>
<td>7</td>
<td>10</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>3</td>
<td>Cardiac Failure I</td>
<td></td>
</tr>
<tr>
<td>139</td>
<td>M. Nolan</td>
<td>F</td>
<td>9</td>
<td>4</td>
<td>21</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>3</td>
<td>Cardiac Failure I</td>
<td></td>
</tr>
<tr>
<td>127</td>
<td>J.R. Norton</td>
<td>M</td>
<td>12</td>
<td>4</td>
<td>11</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>3</td>
<td>Cardiac Failure I</td>
<td></td>
</tr>
</tbody>
</table>

#### COMPLICATED GRAVIS SERIES

<table>
<thead>
<tr>
<th>Lab. No.</th>
<th>NAME</th>
<th>SEX</th>
<th>AGE</th>
<th>Day of Disease on Adm.</th>
<th>Day of Death on Adm.</th>
<th>A.D.S. and Route</th>
<th>A.B.S. and Route</th>
<th>Paralysis</th>
<th>Cardiac Complications</th>
<th>Other Sequelae</th>
<th>Membrane Racks</th>
<th>Days for Membrane to Clear</th>
<th>Remarks (if any)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>748</td>
<td>J. Harvey</td>
<td>F</td>
<td>4</td>
<td>4</td>
<td>24 hrs</td>
<td>8,000 pre ad</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>6</td>
<td>Discharged 57th Day</td>
<td></td>
</tr>
<tr>
<td>725</td>
<td>F. Delves</td>
<td>F</td>
<td>4</td>
<td>3</td>
<td>10</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>5</td>
<td>Discharged 60th Day</td>
<td></td>
</tr>
<tr>
<td>566</td>
<td>M.B. Halliday</td>
<td>P</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>6</td>
<td>Cardiac Failure G</td>
<td></td>
</tr>
<tr>
<td>416</td>
<td>A. Blizzard</td>
<td>M</td>
<td>4</td>
<td>2</td>
<td>22</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>6</td>
<td>Cardiac Failure G</td>
<td></td>
</tr>
<tr>
<td>242</td>
<td>T. Kelly</td>
<td>F</td>
<td>4</td>
<td>2</td>
<td>24 hrs</td>
<td>40,000 IM</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>4</td>
<td>Death due to T.B. and Diphtheria</td>
<td>G</td>
</tr>
<tr>
<td>318</td>
<td>W. Newton</td>
<td>F</td>
<td>9</td>
<td>2</td>
<td>24 hrs</td>
<td>24,000 pre ad</td>
<td>60,000 IV</td>
<td></td>
<td></td>
<td></td>
<td>Died before Cardiac Failure</td>
<td>4</td>
<td>Cardiac Failure G</td>
<td></td>
</tr>
</tbody>
</table>

CONTINUED......
<table>
<thead>
<tr>
<th>Lab No.</th>
<th>NAME</th>
<th>SEX</th>
<th>AGE</th>
<th>Day of Disease on Adm</th>
<th>Day of Disease which occurred</th>
<th>A.D.S. and Route</th>
<th>A.B.S. and Route</th>
<th>Paralysis</th>
<th>Cardiac Complications</th>
<th>Other Sequelae</th>
<th>Days for Membrane to Clear</th>
<th>Remarks (if any)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>91 S. Waite</td>
<td>F</td>
<td>7</td>
<td>3</td>
<td>6</td>
<td>40,000 IM 60,000 IV</td>
<td>20 IM No.1 15 IP No.1</td>
<td>Atypical Gravis Series</td>
<td>Petechiae 6 Obstruction - Tracheotomy. Suppression of urine.</td>
<td>Heart block</td>
<td>Died before</td>
<td>Throat clean</td>
<td>P.M. Subcapsular Haemorrhages &amp; marked congestion kidneys. Heart - Flabby. Cardiac Failure</td>
<td>A.G.</td>
</tr>
<tr>
<td>18 K. Flanagan</td>
<td>F</td>
<td>7</td>
<td>5</td>
<td>16</td>
<td>60,000 IV 40,000 IM</td>
<td>10 IM No.1 10 IV No.1</td>
<td></td>
<td></td>
<td>Albuminuria 8</td>
<td>5</td>
<td>Cardiac Failure</td>
<td>A.G.</td>
<td></td>
</tr>
<tr>
<td>34 M. Broadbent</td>
<td>F</td>
<td>10</td>
<td>4</td>
<td>5</td>
<td>8,000 pread 80,000 IM 80,000 IV</td>
<td>18 IM No.1 2 IV No.1</td>
<td></td>
<td></td>
<td>Asphyxia - Tracheotomy.</td>
<td>Died before</td>
<td>Cardiac Failure</td>
<td>Throat clean</td>
<td>Cardiac Failure</td>
</tr>
</tbody>
</table>
SERUM ADMINISTRATION.

The administration of a product which was really an unknown quantity, required extreme care, and from the case records, it would be observed that advance in dosage was made slowly and cautiously. Desensitization was done whenever any doubt existed as to the possibility of allergic reaction, and the dose of Anti-bacterial Serum was always delayed until after the antitoxin administration. Antitoxic Serum was given intravenously and intramuscularly. The average dose employed was approximately 100,000 units, given in two parts, usually 40,000 units intramuscularly, followed in half an hour to one hour by 60,000 units intravenously. This method corresponds to the scheme recommended in the report of the Medical Superintendents, London County Council, 1936. The Anti-bacterial Serum was given by the intramuscular, intravenous or intra-peritoneal route, either by one or a combination of these methods.

Regarding the immediate reactions, fortunately they were not severe, only one case giving cause for anxiety and alarm. The delayed manifestation of Serum reactions were not striking, though the incidence was considerably higher than in the group treated by antitoxin alone, and they were all cutaneous in character. The number of cases which experienced Serum rashes in the Anti-bacterial Serum treated group was 32.4%, compared with 20%, which occurred in the Control group, which had antitoxin alone.

Having hinted at the difficulty of assessing this therapeutic substance in this series of cases, and this
difficulty becoming more realistic on account of the fact that the effect of the Anti-bacterial Serum was not dramatic and convincing, comparisons must be the basis of argument, and those which will be dealt with are the age and sex, reaction of membrane to Serum, the incidence of paresis, cardiac complications, other sequelae, disappearance of the organisms from the throat, and mortality rates.

Being cognisant of the fact that this series is small from which to draw dogmatic conclusions, but considering the time and effort to collect and treat a group of this severity, it is necessary to offer some opinion, even if it is only in the nature of a guide to future work of this kind, or to offer a base for future experiment.

ANALYSIS OF CASE RECORDS.

Before considering the analysis of the series of cases which have been collected during the clinical trial, in order to facilitate discussion, it was deemed advisable to subdivide them into several classifications.

(A) Group 1. Comprises a group of 75 Gravis cases, 35 of which were treated with Gravis Anti-bacterial Serum, plus Diphtheria antitoxin, and 40 Control cases which received Diphtheria antitoxin alone.

(B) Group 2, which consists of 11 cases of severe Diphtheria, due to the Intermediate organism, 6 of which were treated with Anti-bacterial Serum, and antitoxin, and 5 Controls, which were treated with Diphtheria antitoxin alone.
(C) Group 3, which is a series of 6 complicated Gravis cases, 3 of which had Anti-bacterial Serum, plus antitoxin, and 3 Control cases which had antitoxin alone, 1 case in each series dying within 24 hours.

In the Serum treated group, one was complicated by having a cleft palate and subject to epileptic fits, another had a T.B.spine and sinuses. In view of those complications, it was decided to exclude these cases from Group 1.

(D) Group 4. 3 cases due to infection with Atypical Gravis organism.
Table 1 shows the age and sex distribution of the cases dealt with in Group 1, including a table of deaths as they occurred in each of the sub-divisions. The deaths were approximately alike in both series, only a greater number occurred in the younger ages in the Control group than in the Anti-bacterial Serum treated group.

Incidence of infection and death rate bear no relation to sex.

This table indicates the mortality and recovery rates of the cases dealt with in Group 1.
The findings in this Table indicate the average day of disease of the cases in Group 1, on admission to hospital. It is recorded that the cases treated with Anti-bacterial Serum were admitted, on the average, rather earlier than the cases in the Control group.

The cases which recovered in the Anti-bacterial Serum treated group were admitted, on the average, on a 2.8 day of disease, compared with cases in the Control group, which were admitted later, on the 3.1 day of disease.

Regarding the cases which died, those in the Anti-bacterial Serum treated group were admitted on the 3.9 day of disease, as compared with the cases in the Control group which were admitted on the 3.8 day of disease.

The importance of the time factor in the treatment of severe Diphtheria is illustrated from the above figures.
Table 4 indicates the average number of days which are required for membrane to clear from the throat. The speed with which the throats cleared in the group treated with Anti-bacterial Serum did not differ materially from that in the case of the Control group - 5.2 days in the former against 5.5 days in the latter.

There is great similarity in the occurrence of the complications in the Anti-bacterial Serum treated and Control cases of Group 1, although it is interesting to record that the incidence of Serum rashes showed an increase in the Anti-bacterial Serum group over the Controls - 31.4% in the Anti-bacterial Serum treated, against 20% in the Control series.
Table 6 summarises the route by which the Anti-bacterial Serum was administered, with reference to those who recovered and those who died.

Table 7 summarises the amount of Serum given on an average, by the various routes.
TABLE 8.

| Average day of disease on which death took place in Control Group. | 14th day. |
| Average day of disease on which death took place in Serum Group. | 14.5 days. |

Considering the period of disease at which death occurred, the effect of Anti-bacterial Serum did not seem to prolong life to any degree. The average day of disease on which death occurred is indicated in the above table, where it will be observed that the difference between the average period at which death took place is .5 of a day in favour of the Anti-bacterial Serum treated cases.

TABLE 9.

| Average amount of Serum given to cases which died. | 22 ccs |
| Average amount of Serum given to cases which recovered. | 22 ccs |

The amount of Anti-bacterial Serum which was administered to the cases which were fatal and the cases which recovered, were similar.

TABLE 10.

| Average amount of Antitoxin given to Anti-bacterial Serum Group. | 97,000 units |
| Average amount of Antitoxin given to the Controls. | 95,000 units. |
The average amount of antitoxin given to the Anti-bacterial Serum treated cases, and that given to the Control group was approximately alike.

Summarising the results of the cases in Group 1, 26 Serum treated cases survived the acute stage and of these 13 developed paresis (which is 50%), 1 died. On the Control group, 30 cases survived the acute stage and of these 14 (which is 46.6%) developed paresis, 1 died.

Of the cases which recovered in the Group 1, which escaped any complications attributable to Diphtheria, 8 occurred in the Anti-bacterial Serum group and 11 in the Control group, which is 23% and 27% respectively. Here the Control series shows a relative, though insignificant, advantage over the Anti-bacterial Serum treated group.

The disappearance of the organism from the throat did not seem to be materially affected by Gravis Anti-bacterial Serum. Daily routine swabbing was carried out for a period, but was abandoned. It is recorded, in some of the case notes, that the cultures remained persistently positive and virulent, in several of the Gravis Anti-bacterial Serum treated cases, for a considerable period.
INTERMEDIATE SERIES.

TABLE 1.

<table>
<thead>
<tr>
<th>AGE</th>
<th>Anti-bacterial Serum Treated Cases</th>
<th>M</th>
<th>F</th>
<th>Death</th>
<th>M</th>
<th>F</th>
<th>Antitoxin Treated Cases</th>
<th>M</th>
<th>F</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6-7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8-9</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10-11</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>12-14</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td>5</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows the age and sex distribution of the cases dealt with in Group 2, including a table of deaths, as they occurred in each of the subdivisions. There is no material difference in the deaths in each group, but they practically all occur in the 5-10 age period. The two series are not directly comparable, as there were no female cases in the Control group.

TABLE 2.

<table>
<thead>
<tr>
<th></th>
<th>Anti-bacterial Serum</th>
<th>Antitoxin Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality Rate (All ages)</td>
<td>56.6%</td>
<td>80%</td>
</tr>
<tr>
<td>Recovery Rate (All ages)</td>
<td>33 ( \frac{1}{3} )%</td>
<td>20%</td>
</tr>
</tbody>
</table>

This Table indicates the mortality and recovery rates of the cases dealt with in Group 2. The death rates are very high indeed in this group, which give a very clear indication of the severity of infection, even though bacteriologically the organisms were Intermediate. The differences of death rates in a series so small as this is insignificant, even though the result of Anti-bacterial Serum treated group appear more favourable than the Control group.
TABLE 3.

<table>
<thead>
<tr>
<th>Average day of disease on admission</th>
<th>Serum</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cases.</td>
<td>3.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Cases which recovered.</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Cases which died.</td>
<td>4.2</td>
<td>2.75</td>
</tr>
</tbody>
</table>

The Anti-bacterial Serum treated cases were admitted, on the average, at a later stage of disease than the Control cases. It is rather surprising to record this fact, considering that the results of treatment in the Anti-bacterial Serum treated cases appear rather better than the Control group.

The cases recovering in both series are surprising, considering that treatment was instituted at such a late period. Regarding the death in the group, the Control series were treated much earlier than the Anti-bacterial Serum treated group, and in spite of the fact that the Controls were treated comparatively early, they died.

TABLE 4.

<table>
<thead>
<tr>
<th>Average number of days for membrane to clear from throat.</th>
<th>Serum</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.5</td>
<td>4.6</td>
</tr>
</tbody>
</table>

The time for local lesion to clear up was considerably longer in the Anti-bacterial Serum treated group than the Control series.
### TABLE 5.

<table>
<thead>
<tr>
<th>SERIES</th>
<th>Serum Group</th>
<th>Death</th>
<th>Control Group</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac Complications</td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Albuminuria</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Serum Rash</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Petechial Rash</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All cases of petechial rashes died. There were no serum rashes or reactions occurring in the Anti-bacterial Serum treated group, compared with the Control. The fact that the series is so small and the mortality rate so high in each series that many cases died before sufficient time elapsed for the Serum reaction to develop.

### TABLE 6.

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>Cases that Recovered</th>
<th>Cases that Died</th>
<th>Complete Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM.</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>IM.IV.</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>IV.IM.IP.</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The above Table indicates the route by which the Anti-bacterial Serum was administered, with reference to recoveries and deaths.
TABLE 7.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average day of disease on which death took place in Control group.</td>
<td>6.25</td>
</tr>
<tr>
<td>Average day of disease on which death took place in Serum group.</td>
<td>12.25</td>
</tr>
</tbody>
</table>

In this group, the period elapsing before the fatal issue seemed to be prolonged in the Anti-bacterial Serum treated group, to nearly twice the period in the case of the Control.

TABLE 8.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average amount of Serum given to cases which died.</td>
<td>21.25 ccs</td>
</tr>
<tr>
<td>Average amount of Serum given to cases which recovered.</td>
<td>22.5 ccs</td>
</tr>
<tr>
<td>Average amount of A.D.S. given to cases which died.</td>
<td>92,500 units</td>
</tr>
<tr>
<td>Average amount of A.D.S. given to cases which recovered.</td>
<td>76,666 units</td>
</tr>
</tbody>
</table>

The amount of Serum, Anti-bacterial Serum and Antitoxin was very similar in both groups.
COMPLICATED GRAVIS SERIES.

### TABLE 1

<table>
<thead>
<tr>
<th>Age</th>
<th>Anti-bacterial Serum Treated Cases</th>
<th>M</th>
<th>F</th>
<th>Death</th>
<th>M</th>
<th>F</th>
<th>Antitoxin Treated Cases</th>
<th>M</th>
<th>F</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>8-9</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 2.

<table>
<thead>
<tr>
<th></th>
<th>Anti-bacterial Serum</th>
<th>Antitoxin Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality Rate (All ages)</td>
<td>100%</td>
<td>33 1/3%</td>
</tr>
<tr>
<td>Recovery Rate (All ages)</td>
<td>0%</td>
<td>66.6%</td>
</tr>
</tbody>
</table>

### TABLE 3.

<table>
<thead>
<tr>
<th>Average Day of Disease on admission</th>
<th>Serum</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Cases</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>Cases which recovered.</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Cases which died.</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

### TABLE 4.

<table>
<thead>
<tr>
<th>Average number of days for membrane to clear from throat</th>
<th>Serum</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>5 2/3</td>
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</table>
### Complicated Gravis Series

#### Table 5

<table>
<thead>
<tr>
<th>Serum Group</th>
<th>Death</th>
<th>Control Group</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albuminuria</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Petechial Rash</td>
<td></td>
<td></td>
<td>1</td>
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</table>

#### Table 6

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>Cases that Recovered</th>
<th>Cases that Died</th>
<th>Complete Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
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#### Table 7

<table>
<thead>
<tr>
<th>Average Day of Disease on which death took place in Control Group</th>
<th>1st Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Day of Disease on which death took place in Serum Group</td>
<td>9.6 Day</td>
</tr>
</tbody>
</table>

#### Table 8

<table>
<thead>
<tr>
<th>Average amount of Serum given to cases which died</th>
<th>12.3 cc's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average amount of Serum given to cases which recovered</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Table 9

<table>
<thead>
<tr>
<th>Average amount of A.D.S. given to cases which died</th>
<th>100,000 units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average amount of A.D.S. given to cases which recovered</td>
<td>85,000 units</td>
</tr>
</tbody>
</table>
### TABLE 1.

<table>
<thead>
<tr>
<th>Age</th>
<th>Anti-bacterial Serum Treated Cases</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td>0-3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4-5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>TOTAIS</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

### TABLE 2.

<table>
<thead>
<tr>
<th>Serum Mortality Rate</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery Rate</td>
<td>-</td>
</tr>
</tbody>
</table>

### TABLE 3.

| Average Day of Disease on Admission | Serum Cases which Died. | 4 |

### TABLE 4.

Average number of days for membrane to clear from throat. | 5 |

### TABLE 5.

<table>
<thead>
<tr>
<th>Route</th>
<th>Cases that Died.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM</td>
<td>1</td>
</tr>
<tr>
<td>IM.IV</td>
<td>1</td>
</tr>
<tr>
<td>IM.IP</td>
<td>1</td>
</tr>
</tbody>
</table>

### TABLE 6.

| Average Day of Disease on which death took place. | 9th |
| Average amount of Serum given to cases which died. | 25 ccs. |
| Average amount of A.D.S. given to cases which died. | 106,000 units. |
SUMMARY & CONCLUSIONS.

1. Severe Diphtheria occurs, and exacts its toll of human life in Manchester.

2. The idea of a new Therapeutic Agent was conceived in the nature of a Gravis Diphtheria Anti-bacterial Serum.

3. The outline of preparation and standardisation of Gravis Diphtheria Anti-bacterial Serum is described.

4. The attempt at experimental evaluation of the Therapeutic Serum was carried out in animals.

5. The results of the treatment of 35 severe cases of Gravis Diphtheria, with Gravis Anti-bacterial Serum, are compared with the results in 40 cases of similar type and severity, which were treated without Anti-bacterial Serum.

6. The results of the treatment of 6 cases of severe Diphtheria, due to the Intermediate type of Diphtheria organism, with Gravis Anti-bacterial Serum, are compared with 5 similar cases which were treated without Anti-bacterial Serum.

7. The results of treatment of 3 complicated cases of Gravis Diphtheria with Anti-bacterial Serum, are compared with 3 similar cases which were treated without Anti-bacterial Serum.

8. The results of treatment of 3 severe cases of Diphtheria, due to Atypical Gravis organisms, which were treated with Anti-bacterial Serum, are described.

9. The course of the disease was not modified in any way by the administration of Anti-bacterial Serum.
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    421-499.
32. Topley & Wilson, 1925. P. 871.

-----------Co-----------
I wish to acknowledge my indebtedness to Dr. D. Sage Sutherland, for the facilities provided at Monsall Hospital during the course of this investigation; to Dr. D. T. Robinson for his typing of the Diphtheria organism, and the results of his animal experiment with Anti-bacterial Serum, and to Dr. Petrie for the details of preparation and standardisation of the Anti-bacterial Serum.
APPENDIX 1.

Pages 46 - 116.

GRAVIS ANTI-BACTERIAL SERUM TREATED CASES.

Pages 117 - 196.

DIPHTHERIA ANTI-TOXIN TREATED CASES.
Name: Paula Kerfoot

Sex: F  Age: 3½  Lab. No: 347

Disease: Severe faucial Diphtheria.

Date of Admission: 26.2.36

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis & Rhinorrhea. Serum reaction ad.
                Albuminuria B, Vaginal Discharge 21.
                Palatal Paresis 40. Left Otorrhoea 79.

Period for throat to clean: 6 Days.

Date of Discharge: 8.6.36  Date of Death:

Bacteriological Examination.
26.2.36
Cultures +
Dick Test -
2.6.36)
3.6.36) -
4.6.36)

History of Present Illness.

Vomiting  
Sleepiness 26.2.36
Shivering  
Sore throat.
Adenitis.  ) 26.2.36
Difficulty in breathing.

Treatment.

Syringe fauces with chlorine water
Poultices to neck.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Adrenalin m.5 P.R.N.
A.B.S. 2 cc I.V.
A.B.S. 20 cc I.P. 9.30 p.m.

Previous Medical History.

Whooping cough, 1935.

Condition on Admission.

Glands very marked adenitis and periadenitis in neck.
No Koplik's spots. No discharges.
No rash.
Lungs - scattered rhonchi both sides of chest.
Heart - rapid and regular.
Sounds closed.
General condition - toxic.
26.2.36 Collapsed about 30 minutes after serum injection. Severe rigor.
Treatment. Radiant Heat. Adrenalin m. 5 P.R.N.

27.2.36 Membrane spread over both tonsils soft palate oedema marked. Periadenitis bilateral.
Heart - rapid and regular. General condition - toxic.

General condition - unchanged.

1.3.36 Membrane separating. General condition - improved.

2.3.36 Throat clean. Heart regular and rapid. Colour and pulse good. General condition - rather better.

11.3.36 Palate active. Colour and pulse good. General condition - fair.

16.3.36 Palate active. Heart regular. Tone fairly good.

6.4.36 Palate active. Heart regular. Tone fairly good.

7.4.36 Palate sluggish, slight dysphagia. Colour and pulse good.
Treatment. Semi-solid diet.

8.4.36 Having difficulty with semi-solids. Palate inactive.
Treatment. Nasal feeds. Atropine gr. 1/10 P.R.N.

10.4.36 Mucous collecting in throat. Colour and pulse good.

15.4.36 Palate moving slightly.
Heart regular. Tone fair.

17.4.36 Palate moving. Colour and pulse good.
Treatment. Omit nasal feeds.

20.4.36 Slight cardiac irregularity.

22.4.36 Heart regular.
Treatment. 1 Pillow.

24.4.36 Improvement maintained.
Treatment. Sit up.
Patient's convalescence continued uninterrupted, though prolonged, on account of persistent + culture which was virulent.

8.6.36 Discharged.
Name: Anita Maureen Bickerton
Sex: F
Age: 27/2
Lab. No.: 55

Disease: Very severe faucial Diphtheria.

Date of Admission: 19.11.35

Day of disease on admission: Fourth.

Type of organism: Gravis.

Complications: (Adenitis, Rhinorrhea ad.

Period for throat to clean: Dead before clean.

Date of Discharge: 22.11.35

Date of Death: 22.11.35

Bacteriological(103,619),(889,670)

Examination.

19.11.35

Cultures on ad. +

Dick Test -

Patient was Desensitized

Treatment.

A.D.S. 60,000 units I.M.

Poultices to neck.

A.D.S. 40,000 units I.V.

Mist. A.S.A. m. 4 hourly

Camphor & Oil ½ cc. P.R.N.

Brandy ½ P.R.N.

15 ccs. A.B.S. No. i I.M.

10 ccs. A.B.S. No. 1 I.P.

8.30 p.m.

History of Present Illness.

6 weeks ago - Whooping Cough.

Vomiting.

Headaches.

Shivering.

Sore throat.

Nasal Discharge.

Previous Medical History.

Tonsillitis.

Pneumonia.} Infancy.

Asthma.}

Condition on Admission.

Patient looks ill. Marked pallor of skin and mucous membranes.

Throat - thick membrane covering entire surface of both tonsils, palate and Nasopharynx involved.

Loose at edges.

Glands - enlarged and tender behind both angles of mandible.

Nostrils - excoriated, thick purulent discharge from right.

Pulse - poor volume, rapid and regular.

Heart - not enlarged, regular.

Sounds of fair quality.

Muscles - limp.

General condition - poor.
19.11.35  Skin - no petechiae present.
20.11.35  Membrane thickened and cleaning off tonsils.
          Glands still enlarged.
          Heart - regular.  Tone fair.
          Pulse Rate - 120/130.
          General condition - fair.
21.11.35  Throat injected and dry.
          Heart - tone poor.  Irregular.
          Child has been vomiting.
          Treatment: Radiant heat 95° for 20 minutes.
          Strychnine gr.1/200 4 hourly
          Adrenalin m.5 P.R.N.
          Rectal salines.
22.11.35  Patient died of Cardiac Muscle Failure.
          Throat not yet clean.
Name: Doreen Baines
Sex: F
Age: 5
Lab. No.: 652

Disease: Severe faucial Diphtheria.

Date of Admission: 23.6.36
Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis ad Serum Rash 9 Palatal Paralysis 38

Period for throat to clean: 5 Days.

Date of Discharge: 31.8.36

Date of Death:

Bacteriological Examination:
- 25.6.36
- Cultures +
- 26.8.36
- 27.8.36 -
- 28.8.36

History of Present Illness:
- Gradual onset.
- Sore throat 21.6.36
- Adenitis 22.6.36
- Convalescent from Pneumonia.

Treatment:
- Syrings fauces with chlorine water.
- A.D.S.32,000 units pre.ad.
- A.D.S.20,000 units I.M.
- A.D.S.40,000 units I.V.
- A.B.S.10 ccs.
- Mist A.S.A. m.5 P.R.N.

Previous Medical History:
- Measles and whooping cough.

Condition on Admission:
- Tongue furred. Throat - membrane over both tonsils and uvula.
- Cedema of tissues marked.
- Bilateral adenitis and periadenitis of cervical glands.
- Heart - regular, rapid. Sounds soft.
- Lungs - breath sounds normal.
- Nasal discharge profuse.
- No Koplik's spots.
- General condition - toxic.
Date   | Details
---|---
24.6.36 | Membrane thickened and separating. Throat less oedematous.
       | Heart sounds rapid and regular.
       | General condition - toxic.
28.6.36 | Throat clean, ulcerated. Glands subsided.
       | Colour and pulse satisfactory.
29.6.36 | Generalised serum rash.
1.7.36  | Colour and pulse satisfactory.
       | Heart - regular
2.7.36  | Cervical adenitis. Temperature elevated.
       | Treatment. Antiphlogistine to neck.
6.7.36  | Throat clean. Glands subsided.
       | Heart sounds closed. Tone fair.
       | Colour and pulse poor. Vomited in the evening.
7.7.36  | No further vomiting. Colour and pulse improved.
13.7.36 | Improved.
20.7.36 | Glands very enlarged right side of neck.
       | Heart irregular. Palate active.
22.7.36 | Treatment. Abscess drained.
27.7.36 | Throat clean. Palate active. Circulation satisfactory.
28.7.36 | Nasal phonation in speech. Palate sluggish.
       | Heart - regular. Colour and pulse good.
10.8.36 | Palate still sluggish.
       | Heart regular.
15.8.36 | Palate moving. Phonation quite clear.
       | Improving. 1 Pillow.
21.8.36 | Improvement maintained.
       | Treatment - Up.
       | Convalescence continued uninterrupted.
31.8.36 | Discharged fit.
Name: Mary Peattie
Sex: F. Age 4
Lab. No. 558

Disease: Severe faucial Diphtheria.
Date of Admission: 29.5.36.
Day of disease on admission: Third.
Type of organism: Gravis.
Period for throat to clean: Dead before clean.
Date of Discharge: Date of Death: 2.6.36

Bacteriological Examination:
29.5.36
Cultures + Dick Test -

History of Present Illness:
Sore throat. Glandular swelling. 27.5.36
Vomiting. 29.5.36

Treatment:
Syringes fauces with chlorine water.
Poultries to neck 4 hourly.
A.D.S. 40,000 units I.M.
Mist A.S.A.m. 8 P.R.N.
Salines.
A.D.S. 60,000 units I.V.
A.B.S. 25 ccs No.1
Adrenalin m.5
A.B.S. 10 cc No.1 I.M. 30.5.36

Previous Medical History:
Mumps 1932.
Chicken Pox 1933.
Measles 1936

Condition on Admission:
Tongue furred. Throat injected. Cædematous left tonsil. Huge membranes present on both sides of fauces covering anterior pillar on left side, extending on to palate.
Glands marked adenitis and periadenitis left side of neck.
Heart - rapid and regular.
Lungs - breath sounds normal.
Skin clear. No Koplik's spots.
No discharges.
General condition - fair.
30.5.36

Throat membrane thickening over left tonsil, cleaning off right. Glands subsiding. Skin clear.

Heart very rapid and regular.

General condition - toxic.

1.6.36

Throat membrane separating with marked haemorrhage. Glands subsiding.

Heart tone very poor. Pulse feeble.

Colour - marked pallor.

Bruising of skin, petechial haemorrhages.

General condition - very toxic.

Gedema and bruising of left mastoid region.

No tenderness. No elevation of temperature.

Treatment.

Haemoplastin 2 cc.

Camphor in oil 1 1/2 cc 4 hourly.

H₂C₂ swab to throat.

2.6.36

Colour cyanosed. Pulse imperceptible.

7.30 p.m.

Patient's condition deteriorated and she died.
Name: Margaret Machin  
Sex: F  
Age: 5  
Lab. No: 495

Disease: Severe faucal Diphtheria.

Date of Admission: 4.5.36

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis. Rhinorrhoea ad Albuminuria 11
Strabismus 24 Nasal phonation 42

Period for throat to clean: 5 Days.

Date of Discharge: 8.7.36

Bacteriological Examination.

4.5.36
Cultures +
Dick Test -
4.7.36)
5.7.36 -
6.7.36)

History of Present Illness.

Sore throat.)
Headache. ) 3.5.36
Shivering. )
Vomiting. )
Nasal discharge.) 4.5.36

Treatment.

Syrings faucæs with
chlorine water.
A.D.S.40,000 units I.M.
A.D.S.60,000 units I.V.
A.B.S.20 ccs I.M. No.1)

Mist A.S.A. m.5 P.R.N.

Condition on Admission.

Tongue coated. Tonsils enlarged and oedematous. Membrane covering both. Active over anterior pillar of faucæs, Nasopharynx and nose involved. Adenitis and periadenitis both sides of neck. Skin clear.
No Koplik's spots.
Heart - regular. Sounds of fair quality.
Lungs - breath sounds coarse.
Muscles - Limp.
General condition - Very poor.

Previous Medical History.

Measles 1934.
Mumps. February, 1936
5.5.36 Throat extensive membrane over both tonsils and palate. Glands ++.
Heart - rapid. Sounds closed. Tone poor.
Urine clear.
General condition - toxic.
Treatment: Salines.

7.5.36 Throat cleaning. Glands still enlarged.
Rhinorrhea +. Albumen + in urine.
Heart rapid.
General condition - still toxic.
Slight epistaxis this morning.

11.5.36 Throat clean. Tonsils enlarged and ulcerated.
Heart sounds closed and regular.
Generally improving.

18.5.36 Palate active.
Heart tone improved.
General condition - better.

25.5.36 Improving.

30.5.36 Generalised abdominal pain, distension present.
Faecal masses palpable in colon. No rigidity or localised tenderness.
Treatment: Olive oil enema.

8.6.36 Palate active.
Circulation satisfactory.

15.6.36 Palate sluggish. Nasal phonation.
Colour and pulse satisfactory.

23.6.36 Palate active. Pulse good.
Heart regular.
General condition - improved.
Treatment: I Pillow.

28.6.36 Patient’s convalescence continued uninterrupted.
Treatment: Up.

30.6.36 Generalised abdominal pain, distension present.
Faecal masses palpable in colon. No rigidity or localised tenderness.
Treatment: Olive oil enema.

8.7.36 Discharged.
<table>
<thead>
<tr>
<th>Name</th>
<th>Jean Manning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>F</td>
</tr>
<tr>
<td>Age</td>
<td>5</td>
</tr>
<tr>
<td>Lab. No.</td>
<td>461</td>
</tr>
</tbody>
</table>

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 22.4.36

**Day of disease on admission.** Fifth.

**Type of organism.** Gravis.

**Complications.** Adenitis, Rhinorrhoea, and Strabismus.

**Period for throat to clean.** 4 Days.

**Date of Discharge.** 16.6.36

**Disease.** Severe faucial Diphtheria.

**Date of Discharge.** 16.6.36

**Date of Death.**

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.4.36</td>
<td>Sore throat</td>
</tr>
<tr>
<td>Cultures + Dick Test -</td>
<td>Adenitis 18.4.36</td>
</tr>
</tbody>
</table>

| 11.6.36 | |
| 12.6.36 | - |
| 13.6.36 | |

**Treatment.**

- Syringe faucæ with chlorine water.
- A.D.S. 40,000 units I.M.
- A.D.S. 40,000 units I.V.
- A.B.S. 10 ccs I.M. (22.4.36)
- A.B.S. 10 ccs I.M. (23.4.36)
- Mist A.S.A. m.5 P.R.N.

**History of Present Illness.**

- Sore throat
- Adenitis 18.4.36

**Previous Medical History.**

- Measles in infancy.

**Condition on Admission.**

- Tongue furred. Throat injected.
- Cædæntous. Tonsils enlarged.
- Extensive membrane over both tonsils, uvula and masopharynx.
- Glands enlarged both sides of neck.
- No discharges. No Koplik's spots and no rash.
- Heart sounds - pure. Tone fair.
- Lungs - breath sounds normal.
- General condition - fair.
<table>
<thead>
<tr>
<th>Date</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.4.36</td>
<td>Thickened membrane over both tonsils and uvula. Heart - rapid and regular.</td>
</tr>
<tr>
<td></td>
<td>Tonsils injected. Specked with exudate - Tonsillitis.</td>
</tr>
<tr>
<td>27.4.36</td>
<td>Throat clean. Colour and pulse fairly good. muscles limp.</td>
</tr>
<tr>
<td>3.5.36</td>
<td>Left internal strabismus.</td>
</tr>
<tr>
<td>5.5.36</td>
<td>Palate active. Heart sounds closed. Tone fair. colour and pulse seems better.</td>
</tr>
<tr>
<td>11.5.36</td>
<td>Palate active. Heart tone fair.</td>
</tr>
<tr>
<td>18.5.36</td>
<td>General improvement.</td>
</tr>
<tr>
<td>28.5.36</td>
<td>Tonsils injected. Specked with exudate - Tonsillitis.</td>
</tr>
<tr>
<td>25.5.36</td>
<td>Throat clean. Colour and pulse good.</td>
</tr>
<tr>
<td>30.5.36</td>
<td>Circulation satisfactory.</td>
</tr>
<tr>
<td></td>
<td>Treatment: 1 Pillow.</td>
</tr>
<tr>
<td>5.6.36</td>
<td>Improving.</td>
</tr>
<tr>
<td>6.6.36</td>
<td>Palate active. Heart regular. Tone improved. No paresis.</td>
</tr>
<tr>
<td>16.6.36</td>
<td>Convalescence continued uninterrupted and patient discharged.</td>
</tr>
</tbody>
</table>
Name: May Ridgeway

Sex: F  Age: 4  Lab. No: 459

Disease: Severe faucial Diphtheria.
Date of Admission: 25.4.36
Day of disease on admission: Third.
Type of organism: Gravis.
Complications: Rhinorrhea & Adenitis ad Albuminuria 5
Obterrhoea 13 Serum Rash 14 Strabismus 46
Facial Paresis & Pharyngeal Paresis 46
Period for throat to clean: 5 Days.
Date of Discharge: 2.7.36

Bacteriological Examination.
25.4.36
Cultures +
Dick Test +
28.6.36
29.6.36)
30.6.36)

Treatment.
Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
A.B.S. 15 ccs I.M.
Salines
Mist. A.S. Am. 4(4 hourly)
A.B.S. 10 ccs I.M. (26.4.36)
A.B.S. 10 ccs I.M. (27.4.36)

History of Present Illness.
Vomiting. 22.4.36
Shivering Glandular swelling. 24.4.36
Confined to bed since 22.4.36

Previous Medical History.
Measles in infancy.
Swellings of glands of neck December, 1935.

Condition on Admission.
Throat: Tonsils meeting in mid-line, covered with thin filmy membrane, which extends on to uvula and soft palate. Profuse purulent nasal discharge. Glands enlarged both sides of neck, periadenitis +
Heart sounds regular. Tone fair.
Lungs - breath sounds normal.
Skin clear. Tongue furred.
No Koplik's spots.
General condition - toxic.
   General condition - very toxic.
27.4.36 No separation of membrane. Glands still enlarged.
   No petechiae on skin.
   Heart irregular. Tone poor.
   Urine - albumen present.
4.5.36 Throat clean. Heart improved.
   Colour and pulse better. Omit Mist. A.S.A.
6.5.36 Slight aural discharge.
   General serum rash.
   General condition improved.
11.5.36 Heart irregular. Tone fair.
   Colour and pulse poor.
16.5.36 Heart sounds - soft, irregular.
   Colour and pulse poor.
   Treatment. Camphor in oil ½ cc P.R.N.
18.5.36 Palate active. Circulation still unsatisfactory.
5.6.36 Palate inactive. Dysphagia.
   Treatment. Nasal feed.
7.6.36 Colour and pulse still unsatisfactory. Slight right internal strabismus and tendency to nystagmus. Slight paresis left side of face.
   Diaphragmatic movement normal.
   Pulse 80.
14.6.36 Palate moving well.
   Treatment. Omit nasal feeds.
17.6.36 Heart regular. Face tone improved. Palate active.
   General improvement.
   Treatment. 1 Pillow.
2.7.36 Convalescence uneventful and patient discharged
   fit and well.
Name: David Haynes
Sex: M  Age: 6
Lab. No.: 455

Disease: Severe faucial Diphtheria.

Date of Admission: 20.4.36

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhea, Serum Rash, Cardiac Irregularity

Period for throat to clean: 5 Days.

Date of Discharge: 15.6.36

Date of Death:

**Bacteriological History of Present Illness.**

Examination:
- 20.4.36
- Cultures +
- Dick Test +

(7.6.36)

(8.6.36) N & T -

(9.6.36)

**History of Present Illness.**

Gradual onset. Patient in bed since 19.4.36.
- Vomiting.
- Sore Throat.
- Headache.
- Cervical swelling.

**Treatment.**

- Syringe faucets with chlorine water.
- A.D.S. 40,000 units I.M.
- A.D.S. 50,000 units I.V.
- A.B.S. 12 ccs I.P.
- A.B.S. 13 ccs I.M.

**Preceding Medical History.**

Mumps 1932.

**Condition on Admission.**

- Tongue furred. Throat injected.
- Tonsils very large. Fester ++
- Extensive exudate covering both tonsils, extending from right tonsil to palate. Glands enlarged both sides of neck. Skin clear. Cheeks flushed.
- Heart rapid, regular. Sounds closed.
- Lungs - breath sounds normal.
- No Koplik's spots. Nose moist.
- General condition - fairly good.
21.4.36 Membrane over both tonsils. Spread on the right side on to palate. Oedema of tissues present. Adenitis both sides of neck. Heart - rapid. General condition - toxic. Treatment. Mist A.S.A. m.5 P.R.N.

22.4.36 Membrane separating nicely. Colour and pulse fairly good.

24.4.36 Throat cleaning. Colour and pulse good.

25.4.36 Throat clean.

28.4.36 Progress satisfactory.

1.5.36 Serum rash.

5.5.36 Improving.

12.5.36 Heart regular. Tone fairly good. Colour and pulse satisfactory.

19.5.36 Palate active. Heart - slightly irregular.

21.5.36 Exposed to risk of Scarlet Fever. Treatment. 5 cc's Anti-Scarletina Serum.

25.5.36 General progress satisfactory. No paresis.

5.6.36 Heart regular. Tone improved. Treatment. Sit up.

Progress continued uninterrupted and patient discharged well.
Name: John Hammond
Sex: M
Age: 4
Lab. No.: 454

Disease: Severe faucial Diphtheria.

Date of Admission: 20.4.36 6 p.m.
Day of disease on admission: Fifth.
Type of organism: Gravis.
Complications: Adenitis, Rhinorrhea ad, Bradycardia 10

Period for throat to clean: 5 Days.

Date of Discharge: 
Date of Death: 26.4.36

Bacteriological Examination:
20.4.36
Cultures T +
N -
Dick Test -

Treatment:
Syringe fauces with chlorine water.
Poultices.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Adrenalin m iii P.R.N.
Mist A.S.A.m.6 P.R.N.
Brandy 3t P.R.N.
A.B.S.Batch No.1 10 cc I.M.
A.B.S.Batch No.1 10 cc I.P.

History of Present Illness:
Gradual onset. Patient in bed since 16.4.36.
Sore Throat 16.4.36
Glandular swelling 17.4.36
Vomiting
Bleeding from nose 19.4.36
Nasal Discharge
Sleepiness
Hoarseness
Slight recession 20.4.36

Previous Medical History:
Measles 1935 Oct-Nov.
Whooping Cough Midsall.

? Meningitis when 4/12 years old.

Condition on Admission:
Tongue furred. Throat injected. Extensive thick exudate on enlarged tonsils and soft palate and adjacent portions of lateral pharyngeal walls. Marked foetor. Glands - adenitis and periadenitis right and left.
Skin - few spots on face.
Nose - excoriation of nostrils.
Profuse purulent Rhinorrhea.
No Koplik's spots.
Heart - regular. Sounds of moderately good quality.
Lungs - breath sounds normal.
General condition - fair.
Good voice. No recession.
No laryngeal stridor.
<table>
<thead>
<tr>
<th>Date</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.4.36</td>
<td>Throat - Membrane separating with bleeding.</td>
</tr>
<tr>
<td></td>
<td>Glanda less.</td>
</tr>
<tr>
<td></td>
<td>Skin clear.</td>
</tr>
<tr>
<td></td>
<td>Heart - tone poor.</td>
</tr>
<tr>
<td></td>
<td>General condition - toxic.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Radiant heat Salines</td>
</tr>
<tr>
<td>22.4.36</td>
<td>General condition - still toxic.</td>
</tr>
<tr>
<td></td>
<td>Colour and pulse poor.</td>
</tr>
<tr>
<td></td>
<td>Irritation on skin. No petechiae.</td>
</tr>
<tr>
<td></td>
<td>Membrane separating.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Fluids.</td>
</tr>
<tr>
<td>23.4.36</td>
<td>Skin - very fine masucules on trunk and limbs.</td>
</tr>
<tr>
<td></td>
<td>No catarrh. No Koplik's spots.</td>
</tr>
<tr>
<td></td>
<td>Adenitis marked in neck.</td>
</tr>
<tr>
<td></td>
<td>General condition - poor.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Barrier.</td>
</tr>
<tr>
<td>24.4.36</td>
<td>Cleaning. Left tonsil still patchy exudate present.</td>
</tr>
<tr>
<td></td>
<td>Heart rate 60, irregular.</td>
</tr>
<tr>
<td></td>
<td>Colour cyanosed. Pulse feeble.</td>
</tr>
<tr>
<td></td>
<td>General condition - exceedingly poor.</td>
</tr>
<tr>
<td></td>
<td>Throat clean.</td>
</tr>
<tr>
<td>25.4.36</td>
<td>Heart rate still slow. Tone feeble.</td>
</tr>
<tr>
<td></td>
<td>No petechiae.</td>
</tr>
<tr>
<td></td>
<td>General condition - extremely poor.</td>
</tr>
<tr>
<td>26.4.36</td>
<td>Cyanosed and cold. Pulseless.</td>
</tr>
<tr>
<td></td>
<td>Heart rate - very slow.</td>
</tr>
<tr>
<td></td>
<td>General condition - extreme.</td>
</tr>
<tr>
<td>9.45 p.m.</td>
<td>Patient died.</td>
</tr>
</tbody>
</table>
Name: Joan Chadwick.  
Sex: F  
Age: 5  
Lab. No.: 428

Disease: Severe faucial Diphtheria.

Date of Admission: 31.3.36

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhea ad Palatal Paresis 25

Period for throat to clean: 5 Days.

Date of Discharge: 20.6.36  
Date of Death

Bacteriological Examination.  
31.3.36  
Cultures +  
Dick Test -  
17.6.36)  
18.6.36)  
19.6.36)

History of Present Illness.

Vomiting.)  
Sore Throat.)  
Shivering.)  
30.3.36  
Headache.)  
Rhinorrhea.)

Treatment.

Syringe fauces with chlorine water.  
Poultices to neck.  
A.D.S.40,000 units I.M.  
A.D.S.60,000 units I.V.  
Mist A.S.Am.8 P.E.N.  
A.B.S.10 ccs No.1 I.M.

Previous Medical History.

Measles in infancy.

Condition on Admission.

Tongue furred. Throat oedematous.  
Tonsils huge, extensive membrane over both extending on to 1/3 soft palate.  
Ulcerated area on left buccal mucosa covered with membranous exudate.  
Glands enlarged both sides of neck.  
No Koplik's spots. Skin clear.  
Profuse seropurulent rhinorrhea.  
Heart regular. Sounds closed.  
Tone poor.  
Lungs - breath sounds normal.  
General condition - poor, toxic, restless and excitable.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4.36</td>
<td>Throat clean. Fauces ulcerated. Heart - rapid. Tone fair.</td>
</tr>
<tr>
<td>8.4.36</td>
<td>Vomited this morning. Colour and pulse poor.</td>
</tr>
<tr>
<td>27.4.36</td>
<td>Throat clean. Palate sluggish. Heart sounds - closed and regular.</td>
</tr>
<tr>
<td>12.5.36</td>
<td>Palate immobile. Collecting mucous in pharynx.</td>
</tr>
<tr>
<td>18.5.36</td>
<td>Palate active. Colour and pulse good. Heart - satisfactory.</td>
</tr>
<tr>
<td>23.5.36</td>
<td>Improvement maintained.</td>
</tr>
<tr>
<td>1.6.36</td>
<td>Treatment. Get up.</td>
</tr>
<tr>
<td>20.6.36</td>
<td>Patient discharged.</td>
</tr>
<tr>
<td>Name</td>
<td>William Small</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------</td>
</tr>
</tbody>
</table>

**Disease.** Severe faucal Diphtheria.

**Date of Admission.** 26.2.36

**Day of disease on admission.** Fourth.

**Type of organism.** Gravis.

**Complications.** Adenitis, Rhinorrhea ad Palatal 38
Pharyngeal 39 Facial 36

**Period for throat to clean.** 6 Days

**Date of Discharge.** 19.5.36

---

### Bacteriological Examination.

<table>
<thead>
<tr>
<th>Date</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.2.36</td>
<td></td>
</tr>
</tbody>
</table>

**Cultures + Dick Test +**

- 12.5.36
- 13.5.36
- 14.5.36

### History of Present Illness.

Patient has been ailing for 8 weeks.

- Vomiting 25.2.36
- Sleepiness 26.2.36
- Sore throat 23.2.36
- Glandular swelling 23.2.36

### Treatment.

- Syringe fauces with chlorine water.
- Poultices to neck.
- A.D.S. 8,000 units pre.ad.
- A.D.S. 40,000 units I.M.
- Salines
- Mist A.S.A.m. 6 hourly.
- A.B.S. 1 cc I.V. 5.30 p.m.
- A.B.S. 10 cc I.M.
- A.B.S. 10 cc I.P. 8.45 p.m.
- A.D.S. 60,000 units I.V.

### Previous Medical History.

- Measles 10 weeks ago.
- Influenza 2 years ago.

### Condition on Admission.

- Extensive membrane over both tonsils, palate and uvula, spreading on to ½ soft palate, Nasopharynx and nose.
- Glands enlarged, with marked periadenitis both sides of neck.
- Profuse purulent nasal discharge.
- Heart - regular. Sounds clear.
- Lungs - breath sounds normal.
- No Koplik's spots. Skin clear.
- General condition - very poor.
27.2.36  Still extensive membrane on palate and tonsils. Prolapsed tonsil present. Heart rapid. General condition - very toxic.

29.2.36 Throat clearing.
1.3.36 Throat still cleaner.


17.3.36 Improving generally.

28.3.36 Colour and pulse still poor. No further vomiting. Palate still sluggish.


2.4.36 Palate and pharyngeal wall still immobile. Colour and pulse poor.


21.4.36 Improvement maintained. Treatment. 1 Pillow.


29.4.36 Treatment. Get up. Convalescence continued uninterrupted.

19.5.36 Patient discharged well.
Name: Edna Crewe

Disease: Severe faucial Diphtheria.

Date of Admission: 18.2.36

Day of disease on admission: Fourth.

Type of organism: Gravis.

Complications: Adenitis ad Albuminuria 10 Palatal Paresis 19 Pharyngeal Paralysis 37 Diaphragmatic Paresis 46

Period for throat to clean: 6 Days.

Date of Discharge: Date of Death: 31.3.36

Bacteriological Examination: History of Present Illness:

18.7.36

Sudden onset.

Cultures + Dick Test +

Vomiting.

Vomiting.

Sleepiness.

Sore Throat.

15.2.36

Glandular Swelling.

Cough.

Date of Death. 31.3.36

Pre-previous Medical History.

Syringe fauces with chlorine water.

Previous Medical History.

Poultices to neck.

Chicken Pox. 1934

A.D.S.40,000 units I.M.

Scarlet Fever.

A.D.S.50,000 units I.V.

No previous serum given.

Mist A.S.A. m.7 P.R.N.

A.B.S.20 cc No.1 I.P.)

19.2.36

Condition on Admission.


19.2.36 Throat - extensive membrane still present, extending on to palate on right side. Membrane not yet thickened. Periadenitis both sides of neck. Skin clear. Heart regular. Tone fair.

21.2.36 Membrane separating. Still toxic.

24.2.36 Throat clean - ulcerated. Heart regular.


Treatment. Salines.


4.3.36 Slight nasal phonation.

5.3.36 Albuminuria.

11.3.36 Heart more regular. Pulse improved. Still albumen in urine.


22.3.36 Definite palatal paresis, dysphagia. Colour and pulse - fair.

Treatment. Nasal feed.

25.3.36 Palate still immobile. General condition poor this p.m. Impaired percussion note over right lower lobe. Occasional moist sounds heard. ? early diaphragmatic paresis.

29.3.36 Colour slightly cyanotic. Poor diaphragmatic movement.

30.3.36 Throat - collecting mucous. No movement of pharyngeal wall.

Heart - irregular at times. Tone poor.

Chest - diminished air entry. Moist sounds present bilaterally.

Treatment. Atropine 1/200 P.R.N.

Strychnine 1/200 4 hourly.

Suction.

31.3.36 Colour more cyanosed. Feeble diaphragmatic movement. Pulse poor at times.

Heart - regular, extremely rapid.

10 a.m. Treatment. Placed in Drinker Respirator.

10 p.m. Patient collapsed and died.
**Name:** Herbert Francis Hepple  
**Sex:** M  
**Age:** 5  
**Lab. No.:** 70

**Disease:** Faecal Diphtheria.

**Date of Admission:** 21.11.35

**Day of disease on admission:** Second.

**Type of organism:** Gravis.

**Complications:** Adenitis & Rhinorrhea ad. Septic gland. Serum reaction immediate.

**Period for throat to clean:** 4 Days.

**Date of Discharge:** 25.1.36  
**Date of Death:**

---

**Bacteriological Examination:**
- 21.11.35
  - Cultures +
  - Dick Test -
- 8.1.36)
- 9.1.36)
- 10.1.36)  

**History of Present Illness:**
Patient at school 2 days ago 19.11.35  
Felt ill on 20.11.35 with sore throat.  
Headache.  
Drowsiness.  
Nasal Discharge.  
Glandular Swelling.

**Treatment:**
- Syringe fauces with chlorine water.
- A.D.S.40,000 units I.M.
- A.D.S.60,000 units I.V.
- Mist A.S.A. m.7 P.R.N.
- A.B.S.No.1 20 ccs I.P.

**Previous Medical History:**
Measles in infancy.

**Condition on Admission:**
- Tongue - clean. Throat - marked oedema of right peritonsillar tissues. Tonsils enlarged. Membrane on both tonsils, active edge on both sides, extending on to soft palate. Glands - bullneck right side, enlarged glands left side of neck, not so much as the right.  
- Colour good. Pulse volume fair.  
- Heart - not enlarged. Regular sounds of good quality.  
- Lungs - breath sounds normal.  
- Discharges - nil. No Koplik's spots.  
- Muscle tone - fair.  
- Patient - stuporose.  
- General condition - toxic.
21.11.35 Very restless. Abdominal pain and vomiting after serum. Pulse 120.

General condition - better to-day.
Treatment. Salines.

24.11.35 Right parotid gland enlarged. Temperature elevated.

Treatment. Antiphlogistine to glands. Barrier.

Treatment. Neck incised.
Antiphlogistine.

Improving.

10.12.35 General improvement maintained.


Treatment. Off Barrier.

2.1.36 Improvement maintained.
Treatment. 1 Pillow.

4.1.36 Improving.
Treatment. 2 Pillows.

5.1.36 Boil on buttock.
Treatment. Foment.

6.1.36 Improving.

Treatment. Sit up.

11.1.36 Treatment. Up.

16.1.36 Neck almost healed.
Treatment. Silver Nitrate to scar.

25.1.36 Palate active, glands healed. Heart and circulation satisfactory. Cultures -
Discharged to home.
**Name:** Michael Carney  
**Sex:** M  
**Age:** 4  
**Lab. No.:** 600

**Disease:** Severe faucial Diphtheria.

**Date of Admission:** 4.6.36

**Day of disease on admission:** Second.

**Type of organism:** Gravis.

**Complications:** Adenitis ad Serum Rash.

**Period for throat to clean:** 4 Days.

**Date of Discharge:** 23.7.36  
**Date of Death:**

<table>
<thead>
<tr>
<th>Bacteriological Examination</th>
<th>History of Present Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6.36</td>
<td>Vomiting ) 2.6.36</td>
</tr>
<tr>
<td>Cultures +</td>
<td>Sore Throat) 2.6.36</td>
</tr>
<tr>
<td>Dick Test -</td>
<td>Shivering) 3.6.36</td>
</tr>
<tr>
<td>21.7.36)</td>
<td>Adenitis ) 3.6.36</td>
</tr>
<tr>
<td>22.7.36)</td>
<td>Headache } 4.6.36</td>
</tr>
<tr>
<td>23.7.36)</td>
<td>Sleepiness) 4.6.36</td>
</tr>
</tbody>
</table>

**Treatment.**

- Syringe fauces with chlorine water.
- A.D.S. 40,000 units I.M.
- A.D.S. 60,000 units I.V.
- A.R.S. 10 ccs I.M.
- A.E.S. 15 ccs I.M. (5.6.36)
- Mist A.S.A. m.5 P.R.N.

**Previous Medical History.**

- Whooping Cough 1935
- Measles 1936

**Condition on Admission.**

- Throat injected. Tonsils markedly enlarged. Both are covered with membrane.
- Skin clear.
- Heart - marked tachycardia.
- Sounds closed and regular.
- General condition - fair.
<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6.36</td>
<td>Membrane spread on to Anterior Pillar both sides.</td>
</tr>
<tr>
<td>5.6.36</td>
<td>No further spread of membrane. Colour and pulse satisfactory.</td>
</tr>
<tr>
<td>8.6.36</td>
<td>Throat clean. Palate active. Tonsils ulcerated.</td>
</tr>
<tr>
<td></td>
<td>Heart sounds closed, regular. Tone fair.</td>
</tr>
<tr>
<td>1.7.36</td>
<td>Palate active. Heart - regular. Tone fairly good.</td>
</tr>
<tr>
<td></td>
<td>Colour and pulse - satisfactory.</td>
</tr>
<tr>
<td>6.7.36</td>
<td>Improving.</td>
</tr>
<tr>
<td>17.7.36</td>
<td>Heart regular. Tone good. No paresis.</td>
</tr>
<tr>
<td></td>
<td>Muscle tone improved.</td>
</tr>
<tr>
<td></td>
<td>Treatment. 1 Pillow.</td>
</tr>
<tr>
<td>28.7.36</td>
<td>Convalescence continued uninterrupted.</td>
</tr>
<tr>
<td></td>
<td>Patient discharged.</td>
</tr>
</tbody>
</table>
Name: Norman Metcalfe  
Sex: M  
Age: 5  
Lab. No.: 655

Disease: Severe faucial Diphtheria.

Date of Admission: 24.6.36 11.15 a.m.

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Rhinorrhea & Adenitis  
Petechiae  
7

Gallop Rhythm: 12

Period for throat to clean: 6 Days.

Date of Discharge:  
Date of Death: 6.7.36

Bacteriological Examination:
24.6.36
Cultures +
Diet Test -

History of Present Illness:
Sudden onset.  
Vomiting) 23.6.36  
Sleepiness) 23.6.36
Sore throat, 21.6.36  
Adenitis 22.6.36

Treatment:
Syringe faucæ with chlorine water.  
A.D.S. 40,000 units I.M.  
A.D.S. 60,000 units I.V.  
A.B.S. 25 ccs I.M.(25.6.36)

Previous Medical History:
Measles in infancy.  
Chicken Pox 1935.

Condition on Admission:
Throat injected. Tonsils enlarged, both covered with thick greyish yellow membrane.  
Fauces edematous, almost occluded by tonsils and uvula.  
Membrane present in left nostril.  
Skin clean. No Koplik's spots.  
Heart - tachycardia.  
Lungs - breath sounds normal.  
General condition - poor.
Date | Description
-----|---------------------
1.7.36 | Throat clean. Colour and pulse very poor.
6.7.36 | Died 5.55 a.m.
Name: Ralph Prestage  
Sex: M  
Age: 4  
Lab. No.: 758

Disease: Severe faucial Diphtheria.

Date of Admission: 28.7.36

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: (Adenitis  
Serum Rash 11)

Period for throat to clean: 6 Days.

Date of Discharge: 19.9.36  
Date of Death: 

Bacteriological Examination:
28.7.36
Cultures -
Swab pre. ad. +
Dick Test -
Gravis Infection.
11.9.36 Swab -
12.9.36 " +
13.9.36 " +
15.9.36 " +
16.9.36 " +
17.9.36 " +

Treatment:
Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Poultices to neck.
Blocks.
Adrenaline 0.5 P.R.N.
A.D.S. 25 ccs.

History of Present Illness:
Sudden onset.
Vomiting 26.7.36
Sleepiness

Headache.
Rigors.  
Sore Throat.
Bilateral Adenitis.

Previous Medical History:
Whooping Cough.
Pneumonia 1934.

Condition on Admission:
Tongue furred.
Throat - both tonsils covered with thick greyish white membrane, extending on to palate.
Glands - per adenitis both sides of neck, more marked on left side.
Skin - No petechiae bruising.
Heart - Rapid, Sounds closed. Regular.
Lungs - Breath sounds normal.
No Koplik's spots. Nasal discharge.
General condition - toxic.
<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.7.36</td>
<td>Epistaxis this morning. Membrane separating on throat.</td>
</tr>
<tr>
<td>6.8.36</td>
<td>Serum rash - generalised.</td>
</tr>
<tr>
<td>5.9.36</td>
<td>Improving. Treatment. Sit up.</td>
</tr>
<tr>
<td>8.9.36</td>
<td>Improvement maintained. Treatment. Up on couch.</td>
</tr>
<tr>
<td>19.9.36</td>
<td>Convalescence continued uninterrupted and patient discharged well.</td>
</tr>
</tbody>
</table>
Name: Pauline Brookes.
Sex: F  Age: 6  Lab. No.: 460

Disease: Severe faucial Diphtheria.
Date of Admission: 27.4.36
Day of disease on admission: Fourth.
Type of organism: Gravis.
Complications: Adenitis. Rhinorrhoea ad Petechiae 6
Period for throat to clean: Dead before clean.
Date of Discharge:  Date of Death: 30.4.36

Bacteriological Examination:
27.4.36
Cultures +
Dick Test -

History of Present Illness:
Sudden onset. In bed since 25.4.36
Last perfectly well 23.4.36
Sore throat 24.4.36
Glandular swelling 26.4.36
Sleepiness
Headache
Blood stained nasal discharge

Treatment:
Syringe fauces with chlorine water.
A.D.S. 8,000 pre. ad.
A.D.S. 30,000 units I.M.
A.D.S. 60,000 units I.V.
Poultices to neck.
Salines.
Brandy 3/11 P.R.N.
Mist A.S.A.m. 8 4 hourly.
Radiant Heat.
A.B.S. 15 cc's I.M.

Previous Medical History:
Measles in infancy.

Condition on Admission:
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.4.36</td>
<td>Haemorrhage from nose and throat. Petechiae on chest. Treatment. Adrenalin Swabs if bleeding continues.</td>
</tr>
<tr>
<td>30.4.36</td>
<td>Gradually deteriorated.</td>
</tr>
<tr>
<td>2.20 p.m.</td>
<td>Died.</td>
</tr>
</tbody>
</table>
Name: Roy Dolman.

<table>
<thead>
<tr>
<th>Name</th>
<th>Roy Dolman.</th>
<th>Sex</th>
<th>M</th>
<th>Age</th>
<th>6</th>
<th>Lab. No.</th>
<th>381</th>
</tr>
</thead>
</table>

Disease: Severe faucial Diphtheria.

Date of Admission: 10.3.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis, Rhinorhoea, Bullneck, Cardiac Muscle Failure.

Period for throat to clean: Dead before clean.

Date of Discharge: Date of Death: 13.3.36

Bacteriological Examination:
- 10.3.36
- Cultures +
- Dick Test -

History of Present Illness:
- Gradual onset.
- Patient in bed since 5.3.36
- Sore throat, glandular swelling.
- 8.3.36

Treatment:
- Syringe fauces with chlorine water.
- A.D.S.40,000 units I.M.
- A.D.S.60,000 units I.V.
- Poultices.
- Mist. A.S.A.10 4 hourly.
- A.B.S.10 ccs. I.M.
- A.B.S.10 ccs. I.P.

Previous Medical History:
- Measles
- Whooping Cough 1934.

Condition on Admission:
- Tongue furred.
- Throat injected. Extensive thick membranous exudate on both tonsils and large area of the palate, especially on the right side and nasopharynx.
- Glands - Bullneck right side, adenitis left.
- Nose - profuse purulent discharge.
- No membrane seen.
- Heart - regular. Sounds of fair quality.
- Lungs - Breath sounds normal.
- Skin - clear. Pallor - very marked.
- General condition - very toxic.
11.3.36 Throat oedematous with extensive membrane on palate and both tonsils. Bullneck + Heart - very rapid. Tone feeble.
Peripheral circulation sluggish.
General condition - extremely toxic.
Treatment. Salines.

Mist. A.S.A. m.5 4 hourly.

13.3.36 General condition deteriorated.
3.0 a.m. Died - cardiac muscle failure.
Name: Alan Sullivan  
Sex: M  
Age: 6  
Lab. No.: 295

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 9.2.36

**Day of disease on admission.** Third.

**Type of organism.** Gravis.

**Complications.** Adenitis. Rhinorrhea ad

**Period for throat to clean.** 6 Days.

**Date of Discharge.** 4.4.36  
**Date of Death.**

---

**Bacteriological Examination.**

- **9.2.36**
  - Cultures +
  - Dick Test -
- **24.3.36**
- **25.3.36**
- **26.3.36**

**Treatment.**

- Syringe faucæ with chlorine water.
- Poultices.
- A.D.S. 40,000 units I.M.
- A.D.S. 40,000 units I.V.
- Mist. A.S.A. m.7 P.R.N.
- A.B.S. 10 cc No.1 I.M.

---

**History of Present Illness.**

- Sudden onset.
- In bed on 7.2.36
- Sleepiness
- Headache
- Glandular swelling
- Excoriation of right nostril 8.2.36

---

**Previous Medical History.**

- Whooping Cough 1932.
- Measles 1933.

---

**Condition on Admission.**

- Tongue furred. Throat injected.
- Tonsils greatly enlarged and covered with exudate of varying thickness.
- Uvula oedematous, soft palate involved. Foetor present.
- Glands palpable in neck and slightly tender. Skin clear. Colour good.
- No Koplik's spots and no discharges.
- Right nostril excoriated.
- Heart - rapid and regular.
- Sounds clear.
- Lungs - breath sounds normal.
- General condition - only fair.
10.2.36  Rhinorrhoea. Throat membrane still over both tonsils and uvula. Fauces still oedematous. Glands still enlarged.

Heart - regular.

General condition - fairly toxic.

11.2.36  Membrane still over both tonsils. Glands still enlarged. Colour and pulse fair.


No marked response to serum.

18.2.36  Circulation seems satisfactory.

25.2.36  Throat clean. Palate active.

Heart satisfactory.

General condition seems better.

3.3.36  Palate active.

Heart regular.

General condition - fairly good.

10.3.36  General improvement.

17.3.36  Palate active.

Heart regular. Colour and pulse good.

No paresis.

20.3.36  Improvement maintained.

Treatment. 1 Pillow.

22.3.36  Treatment. Sit up.

23.3.36  Treatment. Up on couch.

Convalescence continued uninterrupted.

4.4.36  Discharged.
Name: Kathleen Carney  
Sex: F  Age: 7  Lab. No.: 569

Disease: Severe faucial Diphtheria.

Date of Admission: 31.3.36

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhoea ad

Period for throat to clean: 5 Days.

Date of Discharge: 28.7.36

Bacteriological Examination:
- 31.5.36
- Cultures + Dick Test -
- 23.7.36
- 24.7.36
- 25.7.36

History of Present Illness:

Vomiting.  
Sore throat.  
Headache.  
Shivering.  
Epistaxis.

Previous Medical History:

Measles  
Bronchitis  
Infancy.

Condition on Admission:

Throat injected, and oedematosus.  
Tonsils enlarged and covered with thickened membrane over both.  
Beginning to separate on left.  
Foetor marked.  
Glands adenitis and periadenitis in neck.  
Skin - Herpes Labialis.  
Heart sounds rapid and regular.  
Lungs - breath sounds normal.  
No Koplik's spots. No discharges.  
General condition - rather toxic.
Disease. Severe faucial Diphtheria.

Date of Admission. 31.5.36

Day of disease on admission. Second.

Type of organism. Gravis.

Complications. Adenitis. Rhinorrhea ad

Period for throat to clean. 5 Days.

Date of Discharge. 28.7.36 Date of Death.

Bacteriological Examination.

<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.5.36</td>
<td></td>
</tr>
<tr>
<td>23.7.36</td>
<td>Cultures + Dick Test +</td>
</tr>
<tr>
<td>24.7.36</td>
<td></td>
</tr>
<tr>
<td>25.7.36</td>
<td></td>
</tr>
</tbody>
</table>

History of Present Illness.

<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.5.36</td>
<td>Vomiting.</td>
</tr>
<tr>
<td>29.5.36</td>
<td>Sore throat.</td>
</tr>
<tr>
<td>29.5.36</td>
<td>Headache.</td>
</tr>
<tr>
<td>29.5.36</td>
<td>Shivering.</td>
</tr>
<tr>
<td>29.5.36</td>
<td>Epistaxis.</td>
</tr>
</tbody>
</table>

Treatment.

Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
A.B.S. 10 ccs I.M.
A.B.S. 25 ccs I.M. )
1.6.36 )
Hist A.S.A. m.7 P.R.N.

Previous Medical History.

Measles ) Infancy.
Bronchitis ) Infancy.

Condition on Admission.

Throat injected, and oedematous.
Tonsils enlarged and covered with thickened membrane over both.
Beginning to separate on left.
Foetor marked.
Glands adenitis and periadenitis in neck.
Skin - Herpes Labialis.
Heart sounds rapid and regular.
Lungs - breath sounds normal.
No Koplik's spots. No discharges.
General condition - rather toxic.
<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6.36</td>
<td>Throat clean.</td>
</tr>
<tr>
<td>15.6.36</td>
<td>General condition fair.</td>
</tr>
<tr>
<td>1.7.36</td>
<td>Palate active. Skin clear. Heart - regular. Colour and pulse good.</td>
</tr>
<tr>
<td>10.7.36</td>
<td>Palate quite brisk. Phonation clear.</td>
</tr>
<tr>
<td>20.7.36</td>
<td>General improvement maintained.</td>
</tr>
<tr>
<td>23.7.36</td>
<td>Treatment. Sit up.</td>
</tr>
<tr>
<td>23.7.36</td>
<td>Treatment. Up.</td>
</tr>
<tr>
<td>28.7.36</td>
<td>Convalescence continued uninterrupted and patient discharged fit.</td>
</tr>
</tbody>
</table>
Name: Josephine Marie Cooper.  
Sex: F  
Age: 6  
Lab. No.: 568

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>3.6.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Third</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis</td>
</tr>
<tr>
<td>Complications.</td>
<td>Adenitis, Rhinorrhea ad. Albuminuria 7, Septic Rash 10</td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>5 Days</td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>25.7.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>3.6.36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultures + Dick Test -</td>
<td>20.7.36, 21.7.36, 22.7.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment.</th>
<th>Syringe fauces with chlorine water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poultices to neck.</td>
<td>A.D.S. 40,000 units I.M.</td>
</tr>
<tr>
<td>Desensitise.</td>
<td>A.D.S. 60,000 units I.V.</td>
</tr>
<tr>
<td>Adrenalin m.3 4 hourly</td>
<td>A.B.S. 25 ccs</td>
</tr>
<tr>
<td>A.B.S. 10 cc I.M. (4.6.36)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>History of Present Illness.</th>
<th>Sore throat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>31.5.36</td>
</tr>
<tr>
<td>Vomiting</td>
<td></td>
</tr>
</tbody>
</table>

Immunised against Diphtheria 1933

<table>
<thead>
<tr>
<th>Previous Medical History.</th>
<th>Chicken Pox (Infancy), Whooping Cough</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scarlet Fever 1933, Measles 1934</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition on Admission.</th>
<th>Tongue furred, Throat injected, and oedematous. Tonsils enlarged and both covered with extensive membrane.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glands - adenitis and periadenitis both sides of neck.</td>
<td></td>
</tr>
<tr>
<td>Heart - regular and rapid.</td>
<td></td>
</tr>
<tr>
<td>Lungs - breath sounds normal.</td>
<td></td>
</tr>
<tr>
<td>Skin clear. No Koplik’s spots.</td>
<td></td>
</tr>
<tr>
<td>General condition - fairly toxic</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Notes</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>3.6.36</td>
<td>Very marked serum reaction, extensive urticarial eruption.</td>
</tr>
<tr>
<td>4.6.36</td>
<td>Membranes thickened, separating. Oedema of fauces less.</td>
</tr>
<tr>
<td></td>
<td>Heart - regular and rapid.</td>
</tr>
<tr>
<td></td>
<td>General condition - toxic. Ommit Adrenalin.</td>
</tr>
<tr>
<td>5.6.36</td>
<td>Throat cleaning, ulcerated. Mist A.S.A. m.5 P.P.N.</td>
</tr>
<tr>
<td></td>
<td>Heart - regular. Colour and pulse good.</td>
</tr>
<tr>
<td>15.6.36</td>
<td>Improving.</td>
</tr>
<tr>
<td>1.7.36</td>
<td>Palate active. Heart - regular. Tone improving. No paresis.</td>
</tr>
<tr>
<td>6.7.36</td>
<td>Heart sounds distant - regular. Colour and pulse - good.</td>
</tr>
<tr>
<td>10.7.36</td>
<td>Improving.</td>
</tr>
<tr>
<td></td>
<td>Treatment: 1 Pillow.</td>
</tr>
<tr>
<td>20.7.36</td>
<td>Progress maintained.</td>
</tr>
<tr>
<td></td>
<td>Treatment: Up.</td>
</tr>
<tr>
<td>25.7.36</td>
<td>Patient's convalescence continued uneventful.</td>
</tr>
<tr>
<td></td>
<td>Discharged.</td>
</tr>
</tbody>
</table>
Name: Joseph Slater  
Sex: M  
Age: 9  
Lab. No.: 772

Disease: Severe faucial Diphtheria.

Date of Admission: 1.8.36

Day of disease on admission: Sixth.

Type of organism: Gravis.

Complications: Adenitis. Rhinorrhea ad Palatal Paralysis 16 & 35

Period for throat to clean: 6 Days.

Date of Discharge: 9.10.36  
Date of Death:

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8.36</td>
<td>Vomiting.</td>
</tr>
<tr>
<td>Cultures +</td>
<td>Sore throat</td>
</tr>
<tr>
<td>Dick Test -</td>
<td>Headache.</td>
</tr>
<tr>
<td>29.8.36</td>
<td>Shivering.</td>
</tr>
<tr>
<td>30.8.36</td>
<td>Rhinorrhea 31.7.36</td>
</tr>
<tr>
<td>22.9.36</td>
<td>Glandular Swelling 23.7.36</td>
</tr>
<tr>
<td>24.9.36</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>25.9.36</td>
<td></td>
</tr>
</tbody>
</table>

Treatment.

- Syringe fauces with chlorine water.
- Poultices to neck.
- Desensitise for 40,000 units A.D.S I.M.
- A.D.S 60,000 units I.V.
- A.D.S. 25 ccs I.M.

History of Present Illness.

<table>
<thead>
<tr>
<th>Condition on Admission.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tongue furred.</td>
</tr>
<tr>
<td>Throat oedematous on right side.</td>
</tr>
<tr>
<td>Very extensive membrane over right tonsil, extending over fauces to palate. Left tonsil also covered. Tonsillar enlargement extends over midline and conceals left tonsil and uvula. Foster marks.</td>
</tr>
<tr>
<td>Glands very marked adenitis and periadenitis right side of neck.</td>
</tr>
<tr>
<td>Profuse serous rhinorrhea.</td>
</tr>
<tr>
<td>No Koplik's spots. No discharges.</td>
</tr>
<tr>
<td>Heart sounds poor and regular.</td>
</tr>
<tr>
<td>Chest - breath sounds normal.</td>
</tr>
<tr>
<td>General condition - very toxic, unsatisfactory.</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>2.8.36</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3.8.36</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td>4.8.36</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>6.8.36</td>
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<tr>
<td></td>
</tr>
<tr>
<td>10.8.36</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>12.8.36</td>
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<tr>
<td></td>
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<tr>
<td>15.8.36</td>
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<tr>
<td></td>
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<tr>
<td>25.8.36</td>
</tr>
<tr>
<td></td>
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<tr>
<td>30.8.36</td>
</tr>
<tr>
<td>1.9.36</td>
</tr>
<tr>
<td></td>
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<tr>
<td>6.9.36</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>17.9.36</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>21.9.36</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>9.10.36</td>
</tr>
</tbody>
</table>
Name: Betty Walton
Sex: F  Age: 8  Lab. No.: 532

Disease: Severe faucial Diphtheria.

Date of Admission: 22.5.36
Day of disease on admission: Second
Type of organism: Gravis
Complications: Rhinorrhea & Adenitis ad Albuminuria 17
Cardiac Irregularity 40

Period for throat to clean: 4 Days.

Date of Discharge: 28.7.36
Date of Death:

Bacteriological Examination:
22.5.36
Cultures +
Dick Test -
20.7.36
21.7.36 -
22.7.36)

History of Present Illness:
Sore throat
Headache
Glandular swelling
21.5.36

Previous Medical History:
Measles
Chicken Pox
Whooping Cough

Treatment:
Syringe fauces with chlorine water.
A.D.S.40,000 units I.M.
A.D.S.60,000 units I.V.
A.B.S. 25 ccs I.M.
Mist A.S.A. m.5 P.R.N.

Condition on Admission:
Tongue furred. Throat, membrane on both tonsils, extending on to palate, probably more recent and more active on the right. Oedema slight. Adenitis and periadenitis both sides of neck. Skin - septic spots present on trunk.
Heart - rapid and regular. Tone poor.
Lungs - breath sounds clear.
General condition - toxic.


1.6.36 Improving.


15.6.36 Circulation satisfactory.


1.7.36 Improving.

2.7.36 Vomiting. Colour and pulse fair. Heart - regular.


Treatment. Radiant Heat. Oxygen and Cardiac Foment. Mist. A.N.A.m.5 4 hourly.


7.7.36 Colour and pulse definitely better to-day. Heart - rapid. Tone improved.


20.7.36 Treatment. Up.

23.7.36 Patient's convalescence continued uninterrupted. Discharged.
<table>
<thead>
<tr>
<th>Name</th>
<th>Clifford Lewis Brettelle</th>
<th>Sex</th>
<th>M</th>
<th>Age</th>
<th>9</th>
<th>Lab. No.</th>
<th>711</th>
</tr>
</thead>
</table>

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 14.7.36

**Day of disease on admission.** Second.

**Type of organism.** Gravis.

**Complications.** Adenitis ad Serum Rash

**Period for throat to clean.** 6 Days.

**Date of Discharge.** 9.9.36

---

### Bacteriological Examination

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.7.36</td>
<td>Cultures -</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Disk Test +</td>
<td>+</td>
</tr>
<tr>
<td>Swab</td>
<td>15.7.36 -</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>16.7.36 -</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>17.7.36 +</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>31.8.36 -</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>7.9.36 -</td>
<td>-</td>
</tr>
</tbody>
</table>

### Treatment

- Syringe fauces with chlorine water.
- Mist. A.S.Am10 P.R.N.
- A.D.S.30,000 units I.M.
- A.D.S.60,000 units I.V.
- Poultices to neck.
- A.D.S. 8,000 units pre.ad.
- A.B.S. 25 ccs (15.7.36)

### History of Present Illness

- Vomiting 5.7.36
- Sore throat
- Headache
- Adenitis 12.7.36

### Previous Medical History

### Condition on Admission

- Throat injected. Tonsils injected. Both covered with greyish membrane extending on to uvula on right side.
- Tongue furred.
- Marked foetor of breath.
- Glands just palpable.
- No discharges.
- Skin clear.
- Heart - tachycardia.
15.7.36 Membrane over anterior pillar of tonsils thickened.
Glands still enlarged in neck. Skin clear.
Heart - regular. Colour and pulse good.

20.7.36 Throat clean.

22.7.36 Throat clean. Glands subsided.
Heart regular. Colour and pulse good.

23.7.36 Serum Rash.

28.7.36 General condition - improved.

4.8.36 Colour and pulse - satisfactory.

11.8.36 Palate active.
Heart - regular. Colour and pulse good.

18.8.36 Circulation satisfactory.
Muscle tone improved.

25.8.36 Palate active.
Heart - regular. Colour and pulse good.
Treatment. 1 Pillow.

30.8.36 Improving.
Treatment. Sit up.

1.9.36 Heart - regular. Colour and pulse satisfactory.
No paresis.
Progress satisfactory.

9.9.36 Convalescence continued uninterrupted and patient discharged.
Name: Sylvia Cummings.

Sex: F
Age: 3

Lab. No.: 713

Disease: Severe faucial Diphtheria.

Date of Admission: 15.7.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Serum Rash 17 Albuminuria Adenitis Ad Sluggish palate 21

Period for throat to clean: 5 Days.

Date of Discharge: 21.9.36

Date of Death:

---

Bacteriological Examination.

15.7.36
Cultures + Dick Test -
15.9.36
16.9.36 -
17.9.36

History of Present Illness.

Sore throat.
Headache
Adenitis
Loss of Voice
Rhinorrhea

Previous Medical History.

Measles in infancy
Chicken Pox in infancy

---

Treatment.

Syringe fauces with chlorine water.
Poultices to neck.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
A.E.S. 10 cc's
Mist A.S.A. m.5 P.R.N.

Condition on Admission.

Tongue - furred. Marked foetor.
Throat - injected and oedematous.
Tonsils - large. Extensive membrane present on both tonsils and on uvula.
Membrane is extending on to palate on right side.
Heart sounds clear.
Lungs - breath sounds clear.
Cervical adenitis present.
No Koplik's spots. Nares excoriated.
General condition - toxic.


27.7.36 Palate active. Heart - regular. Tone good. Colour and pulse satisfactory.

28.7.36 Generalised serum rash. Treatment. Adrenalinm.4 P.R.N.

20.8.36 Nasal phonation. Palate sluggish. Treatment. Strychnine 2.00 B.I.D.


22.8.36 Purulence of ext: auditory meatus.

30.8.36 Palate moving.


3.9.36 General condition - improved. No paresis. Treatment. 1 Pillow.

11.9.36 Improvement maintained. Treatment. Sit up.


21.9.36 Convalescence continued uninterrupted and patient discharged quite well.
**Name**: Peter Joyson  
**Sex**: M  
**Age**: 8  
**Lab. No.**: 742

**Disease**: Severe faucial Diphtheriae.

**Date of Admission**: 25.7.36

**Day of disease on admission**: First.

**Type of organism**: Grevis.

**Complications**: (Serum Rash 9

**Period for throat to clean**: 8 Days.

**Date of Discharge**: 19.9.36  
**Date of Death**: 

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
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<tbody>
<tr>
<td>25.7.36</td>
<td>Examination. Examinations.</td>
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<tr>
<td></td>
<td>Cultures +</td>
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<tr>
<td></td>
<td>Dick Test -</td>
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<tr>
<td></td>
<td>Pre-ad.</td>
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<tr>
<td></td>
<td>18,000 units A.D.S.</td>
</tr>
<tr>
<td></td>
<td>11.9.36 -</td>
</tr>
<tr>
<td></td>
<td>13.9.36 -</td>
</tr>
<tr>
<td></td>
<td><strong>Treatment</strong></td>
</tr>
<tr>
<td></td>
<td>Syringe fauces with chlorine water.</td>
</tr>
<tr>
<td></td>
<td>A.D.S. 40,000 units I.M.</td>
</tr>
<tr>
<td></td>
<td>A.D.S. 60,000 units I.V.</td>
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<tr>
<td></td>
<td>Poultices</td>
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<td>Saline</td>
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<td></td>
<td>Mist A.S.A.m.4 P.R.N.</td>
</tr>
<tr>
<td></td>
<td>Blocks</td>
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<tr>
<td></td>
<td>A.B.S. 25 cc. No.1 I.M.</td>
</tr>
</tbody>
</table>

**History of Present Illness**

- Sudden onset 24.7.36
- Vomiting.
- Sore throat.
- Rigors.
- Headache.
- Adenitis.

Admitted to Booth Hall with fractured femur 17.5.36. Now full range of movements.

**Previous Medical History**

- Chicken Pox.
- Whooping Cough.
- Measles.

**Condition on Admission**

- Tongue furred. Fauces injected and covered with gelatinous active looking membrane posteriorly.
- Tonsils ++.
- Both tonsils extensively covered with darkish membranous exudate.
- Oedema +.
- Small patch on uvula.
- Glands of neck enlarged and tender.
- Skin clear, except for acneform eruption of left leg, due to plaster.
- Poetor +
- Nose moist, slight excoriation.
- Heart - tachycardia.
- Lungs - breath sounds normal.
- General condition - fairly good.
25.7.36 Membrane extended over both tonsils, reaching on to soft palate.
27.7.36 Throat cleaner to-day. Pulse regular.
1.8.36 Serum rash.
6.8.36 General condition improved.
11.8.36 General condition improved.
18.8.36 Muscle tone more satisfactory. Circulation good.
25.8.36 Heart - systolic bruit still present. Regular.
5.9.36 Treatment. 1 Pillow.
8.9.36 General condition improved.
11.9.36 Allow up.
19.9.36 Convalescence continued uninterrupted and patient discharged reasonably well. Mitral systolic bruit persisted, which was Haemic.
Name: Gwelyn Edwards

Sex: M  Age: 11  Lab. No: 321

Disease: Severe faucial Diphtheria.

Date of Admission: 21.2.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis. Rhinorrhea ad. Otorrhoea 18
Palatal paresis 27

Period for throat to clean: 7 Days.

Date of Discharge: 7.5.36  Date of Death:

Bacteriological Examination.
21.2.36
Culture +
Dick Test +
24.4.36)
25.4.36) -
26.4.36)

Treatment.
Syringe fauces with chlorine water.
Poultices to neck 4 hourly.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
10 cc A.B.S. I.M. (22.2.36 5.0 p.m.)
10 cc A.B.S. I.V. (22.3.36 5.30 p.m.)
Mist A.S.A.m. 7 P.R.N.

History of Present Illness.
Vomiting
Sore throat.
Headache. 20.2.36
Shivering.
Glandular swelling

Previous Medical History.
Measles in infancy.
Pneumonia - 2 1/2 years ago.
Empyema - 2 1/2 years ago.

Condition on Admission.
Thin film of membrane covering both tonsils, and extending to soft palate and uvula. Edema of faucial tissues, tongue coated. Glands, periadenitis both sides of neck.
Heart - regular. Tone fair.
Lungs - breath sounds clear.
Scar on right side of chest.
No Koplik's spots.
Left internal strabismus.
General condition - poor.
22.2.36 Throat oedematous, with extensive membrane over both tonsils and soft palate.
   Glands - bullneck.
   Heart - regular and rapid.
   General condition - toxic.

25.2.36 Throat not yet clean - Oedema less.
   Glands subsiding.
   Colour and pulse good.

28.2.36 Throat clean.

3.3.36 Colour and pulse fair.

6.3.36 Right otorrhoea.
   Treatment. Swab ear dry 4 hourly.

17.3.36 Palate sluggish.
   Heart irregular, rapid. Tone fair.
   Treatment. Strychnine 1/100 T.D.S. gr.

24.3.36 Palate inactive.
   Heart sounds - soft.

30.3.36 Palate inactive.
   Heart sounds regular. Dysphagia.
   General condition - poor.
   Treatment. Nasal feeds.
   Atropine gr.1/100 P.R.N.

7.4.36 Palate moving.
   Heart tone - poor.

11.4.36 Palatal movement.
   Improved. Can manage light diet.
   Treatment. Light diet.
   Omit nasal feeds.

14.4.36 Palate active.
   Heart tone improved. Colour and pulse good.
   Treatment. Omit strychnine.

18.4.36 Improving.
   Treatment. 1 Pillow.

21.4.36 Muscles firming.
   Heart regular - tone improving.
   Treatment. Sit up.
   Syrup Triplex 1 dr. T.D.S.

7.5.36 Patient's convalescence uninterrupted.
   Discharged.
Name: Evelyn Derbyshire
Sex: F
Age: 11
Lab. No.: 220

Disease: Severe faucial Diphtheria.

Date of Admission: 14.1.36
Day of disease on admission: Second.
Type of organism: Gravis.
Complications: Rhinorrhea, Adenitis ad Enteritis 26

Period for throat to clean: 6 Days.
Date of Discharge: 12.3.36
Date of Death:

Bacteriological Examination:
14.1.36
Cultures +
Dick Test -
15.1.36 +
5.3.36 -
4.3.36 -
5.3.36 -

Treatment:
Syringe fauces with chlorine water.
Poultices to neck.
A.D.S. 40,000 units I.M.
Desensitize.
A.D.S. 60,000 units I.V.
A.B.S. 25 cc. I.M. 15.1.36

History of Present Illness:
Vomiting
Sore Throat
Shivering: 13.1.36
Sleepiness
Headache: 14.1.36
Adenitis

Mother admitted to Monsall Hospital 11.1.36

Previous Medical History:
Measles 1931
Tonsillitis 1935
Reported to have been immunised against Diphtheria 1935.

Condition on Admission:
Tongue - moist, furred.
Throat - congested - oedematous.
Membrane covering both tonsils.
Tonsils enlarged.
Glands - palpable both sides of neck. Periadenitis.
No Koplik's spots.
No discharges.
Heart - sounds regular in rate and rhythm. Force good.
Lungs - normal.
Squint left eye.
General condition - only fair.
Treatment. Brandy P.R.N. Mist A.S.A.m.7 P.R.N. Blocks. Salines P.R.N.


20.1.36  Throat clean.

27.1.36  Heart irregular at times. Condition - fair. 
Treatment. Mist A.S.A.m.7 4 hourly. Circulation still feeble.

3.2.36  Mucous in stool. Temperature 103°F. Enteritis. 
Treatment. Kaylene Oil P.R.N. Barrier.

10.2.36  Stools satisfactory. Colour and pulse improved. 

17.2.36  Palate active. Heart tone improved. Pulse volume better.

23.2.36  Improving. 
Treatment. Omit all stimulants. Syrup Triplex.

27.2.36  Treatment. 1 Pillow.

2.3.36  Progress maintained. Sit Up.

12.3.36  Discharged. General condition - satisfactory.
Name: Edith Lilian Simonite.  Sex: F  Age: 10  Lab. No: 209

Disease: Severe faucal Diphtheria.

Date of Admission: 9.1.36

Day of disease on admission: Fourth.

Type of organism: Cravis.


Period for throat to clean: 5 Days.

Date of Discharge: 15.3.36  Date of Death.

Bacteriological Examination.
9.1.36
Cultures +
Dick Test -
5.3.36)
6.3.36)
7.3.36)

History of Present Illness.
Gradual onset. Patient has not been in bed.

Vomiting
Headache.
Sore throat.
Glandular Swelling.
6.1.36

Previous Medical History.
Measles, 1929
Mumps 1931
Chicken Pox 1932.

Condition on Admission.
Tongue furred. Throat injected.
Tonsils enlarged. Extensive Diphtheretic membrane on both tonsils and 1/3 soft palate.
Membrane separating on left.
Poetor marked.
Glands, marked adenitis and periadenitis both sides of neck.
Skin - face flushed, no rash.
Heart - regular - sounds of fair quality.
Lungs - breath sounds normal.
No nasal discharge.
General condition - fair.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1.36</td>
<td>Membrane separating from both tonsils.</td>
</tr>
<tr>
<td></td>
<td>Glands subsiding.</td>
</tr>
<tr>
<td></td>
<td>Heart - regular.</td>
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<td></td>
<td>Tone fair.</td>
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<td></td>
<td>Albumen present in urine.</td>
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<td></td>
<td>General condition - fair.</td>
</tr>
<tr>
<td>11.1.36</td>
<td>Membrane separating,</td>
</tr>
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<td></td>
<td>Colour and pulse good.</td>
</tr>
<tr>
<td>13.1.36</td>
<td>Throat clean.</td>
</tr>
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<td></td>
<td>Colour and pulse - fair.</td>
</tr>
<tr>
<td>28.1.36</td>
<td>Membrane separating,</td>
</tr>
<tr>
<td>27.1.36</td>
<td>Lateral nystagmus.</td>
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<tr>
<td></td>
<td>Palate active.</td>
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<td>Heart sounds - regular.</td>
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<tr>
<td></td>
<td>Tone poor.</td>
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<td>Nystagmus still present.</td>
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<tr>
<td>3.2.36</td>
<td>Palate active.</td>
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<td>Colour and pulse good.</td>
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<tr>
<td>10.2.36</td>
<td>Palate active.</td>
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<tr>
<td></td>
<td>Heart regular.</td>
</tr>
<tr>
<td></td>
<td>Nystagmus not present.</td>
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<tr>
<td>12.2.36</td>
<td>Heart satisfactory.</td>
</tr>
<tr>
<td></td>
<td>Knee jerks active.</td>
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<tr>
<td></td>
<td>Improving.</td>
</tr>
<tr>
<td>14.2.36</td>
<td>Nasal intonation in speech.</td>
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<tr>
<td>17.2.36</td>
<td>Palate active.</td>
</tr>
<tr>
<td></td>
<td>Heart - extra systoles.</td>
</tr>
<tr>
<td></td>
<td>Nasal intonation improving.</td>
</tr>
<tr>
<td>24.2.36</td>
<td>Palate active.</td>
</tr>
<tr>
<td></td>
<td>Speech clear.</td>
</tr>
<tr>
<td></td>
<td>Heart regular.</td>
</tr>
<tr>
<td></td>
<td>Colour and pulse good.</td>
</tr>
<tr>
<td></td>
<td>Treatment. 1 Pillow.</td>
</tr>
<tr>
<td>14.2.36</td>
<td>Treatment. Strychnine 1/20 E.I.B.</td>
</tr>
<tr>
<td>2.3.36</td>
<td>Improving.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Sit up.</td>
</tr>
<tr>
<td></td>
<td>Omit strychnine.</td>
</tr>
<tr>
<td>5.5.36</td>
<td>Progress uninterrupted.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Up.</td>
</tr>
<tr>
<td></td>
<td>Convalescence uneventful.</td>
</tr>
<tr>
<td>19.3.36</td>
<td>Discharged.</td>
</tr>
</tbody>
</table>
Name: Joseph Brindley  
Sex: M  
Age: 10  
Lab. No.: 76

Disease: Severe Facial Diphtheria.

Date of Admission: 22.11.35

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhoea, ad. Serum Rash, 10  
Albuminuria, Enteritis, 18 Palatal Paresis, 28

Period for throat to clean: 5 Days.

Date of Discharge: 5.2.36  
Date of Death:

Bacteriological Examination:

22.11.35

Cultures +  
Dick Test -  
20.1.36)  
21.1.36)  
22.1.36)

Treatment:

Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
A.B.S. 25 ccs. No.1 I.M. (6.30 p.m.)

History of Present Illness:

Sore throat.  
Vomiting.  
Sleepiness.  
Vomiting.  
Glandular swelling 22.11.35

Previous Medical History:

Chicken pox 1931.
Transfered from Henshaw's Institution for the Blind.

Condition on Admission:

Tongue clean. Throat injected.
Thick exudate over both tonsils, spreading on to soft palate.
Poetor marked. Glands enlarged and tender, both sides of neck, especially right. Periadenitis right side of neck.
Skin clear - colour good.
Heart - not enlarged, regular, sounds of good quality.
Pulse regular. Volume good.
Lungs - breath sounds normal.
Muscle tone - fair.
No Koplik's spots.
Marked nystagmus continually present.
General condition - fairly good.
22.11.35 Oedema of throat more marked. Periadenitis increased.
Generally more toxic.
Treatment. Salines.
Mist. A.S.A. m.5 4 hourly.

23.11.35 Throat oedema ++. Very thin membrane spread on to palate. Glands still marked bullneck.
Heart regular - tone good.
Rhinorrhea ++
General condition - toxic.
Heart regular. Tone fair.
Faint trace of albumen.

27.11.35 Albuminuria marked to-day.

30.11.35 Albuminuria improved.

Treatment. Hydrarg with crete
Kaylene Oil 3
T.D.S.

10.12.35 Bovels improved, circulation satisfactory.
Treatment. Omit food by mouth.
Salines.

17.12.35 Slight nasal intonation in speech.
Vomiting still. Colour and pulse good.
Treatment. Radiant heat 4 hourly.
Adrenalin m.5 4 hourly.

19.12.35 Palatal paresis.
20.12.35 No vomiting for 36 hours. Circulation fair.
Pulse volume improved.
Generally better.
Treatment. Atropine gr.1/100 P.R.N. Nasal feeds.

General condition - poor.

29.12.35 Apex beat diffuse.
31.12.35 Palate beginning to move.
Respiration shallow. Circulation feeble.

2.1.36 General condition improved.
Treatment. Omit nasal feed & stimulants.

7.1.36 Palate quite brisk. Colour and pulse improved.

13.1.36 Improvement maintained.
Treatment. 1 Pillow.

16.1.36 Improvement continued.
Treatment. Sit up.

20.1.36 Circulation and muscle tone improved.
Treatment. Up.

5.2.36 Discharged to Henshaws Institution. Walking well and fully recovered.
Name: Veronica Maloney  
Sex: F  
Age: 10  
Lab. No.: 762

Disease: Severe faucial Diphtheria.

Date of Admission: 29.7.36

Day of disease on admission: Sixth.

Type of organism: Gravis.


Period for throat to clean: 6 Days.

Date of Discharge: Date of Death: 7.8.36

Bacteriological Examination:
29.7.36
Cultures + Dick Test -

History of Present Illness:
Sore throat: 23.7.36
Headache: 23.7.36
Epistaxis: 26.7.36

Treatment:
Syringe fauces with chlorine water 4 hourly.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
A.E.S. 25 ccs. I.M.
Mist A.S.A. m.10 P.R.N.

Previous Medical History:
Measles.

Condition on Admission:
Tongue furred. Throat, membrane over both tonsils and uvula.
Foetor marked. Glands enlarged both sides of neck.
Skin: No petechiae. No rash.
No Koplik's spots.
Heart - rapid. Tone fair.
Sounds soft.
Lungs - Breath sounds normal.
No discharges.
General condition - fair.
30.7.36  Throat cleaning. Post nasal discharge ++.  
        Very slight rhinorrhoea.  
        General condition - fair.
31.7.36  Throat cleaning.  
        General condition - fairly good.  
2.8.36   Throat cleaning. Colour and pulse unsatisfactory.  
        Heart - very rapid.
3.8.36   Throat not yet clean.  
        Heart - rapid and regular.  
        General condition - fair.
4.8.36   Throat clean.  
        Colour rather cyanosed. Marked tachycardia.  
        General condition - poor.
6.8.36   Heart - Triple rhythm present to-day.  
        Colour remains cyanosed.  
        Pulse imperceptible at times.
7.8.36   Patient's condition deteriorated and she died  
        5.40 p.m. Cardiac muscle failure.
<table>
<thead>
<tr>
<th>Name</th>
<th>Alfred Bigham</th>
<th>Sex</th>
<th>Age</th>
<th>Lab. No.</th>
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<tbody>
<tr>
<td>Disease</td>
<td>Severe faucial Diphtheria.</td>
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<tr>
<td>Date of Admission</td>
<td>19.2.36</td>
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<tr>
<td>Day of disease on admission</td>
<td>Third</td>
<td></td>
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<td></td>
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<tr>
<td>Type of organism</td>
<td>Gravis</td>
<td></td>
<td></td>
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<tr>
<td>Complications</td>
<td>Adenitis, Rhinorrhoea ad, Enteritis 16.</td>
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<tr>
<td>Period for throat to clean</td>
<td>5 Days</td>
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<tr>
<td>Date of Discharge</td>
<td>15.4.36</td>
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</table>

**Bacteriological Examination.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>19.2.36</td>
<td>Cultures + Dick Test -</td>
</tr>
<tr>
<td>6.4.36</td>
<td>7.4.36</td>
</tr>
</tbody>
</table>

**History of Present Illness.**

- Vomiting
- Sore throat
- Glandular swelling

**History of Present Illness.**

**Previous Medical History.**

- Measles

**Condition on Admission.**

- Throat injected. Membrane present on both tonsils and on to soft palate on left side and nasopharynx.
- Nose excoriated. Profuse nasal discharge present. No membrane seen in nose.
- Glands enlarged. Both sides of neck.
- Heart sounds regular. Tone fair.
- Lungs - breath sounds normal.
- Skin clear.

**General condition - fair.**
Heart - satisfactory.
General condition - fair.
Treatment. Mist A.S.A.m. 5 P.R.N.

25.2.36 Throat clean. Palate active. Glands subsided.
Heart regular.

2.3.36 Palate active.
Heart regular. Tone fair. Complaining of nausea.
Stool relaxed and offensive.
Colour and pulse poor.
Treatment. Bowels lavage Oil Resini Barrier.

10.3.36 Palate active. Heart regular. Stool normal.
General condition - improved.

17.3.36 Palate active.
Heart - satisfactory.

24.3.36 Improving.

31.3.36 Heart regular. Colour and pulse satisfactory.

1.4.36 Muscle tone improving.
Colour and pulse good.
Treatment. 1 Pillow.

4.4.36 Treatment. Sit up.

6.4.36 Progress satisfactory.
Treatment. Up on couch.

15.4.36 Patient discharged.
<table>
<thead>
<tr>
<th>Name</th>
<th>Esther Armstrong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>F</td>
</tr>
<tr>
<td>Age</td>
<td>13</td>
</tr>
<tr>
<td>Lab. No.</td>
<td>208</td>
</tr>
</tbody>
</table>

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 8.1.36 6.30 p.m.

**Day of disease on admission.** Third.

**Type of organism.** Gram's.

**Complications.** Rhinorrhea & Adenitis ad. Serum Rash 12.

**Albuminuria.** Petechiae.

**Period for throat to clean.** 8 days.

**Date of Discharge.**

**Date of Death.** 20.1.36

---

### Bacteriological Examination

<table>
<thead>
<tr>
<th>Date</th>
<th>Result</th>
</tr>
</thead>
</table>
| 8.1.36 | Cultures +

### Dick Test

- Glandular swelling 8.1.36

---

### History of Present Illness

- Vomiting.
- Sleepiness.
- Sore Throat 6.1.36
- Shivering.

### Treatment

- Syringe fauces with chlorine water.
- A.D.S. 15,000 units I.M.
- A.D.S. 40,000 units I.M.
- A.D.S. 60,000 units I.V. 12.30 a.m.
- A.B.S. 25 ccs I.M. (9.1.36)

---

### Previous Medical History

- Measles in infancy.

---

### Condition on Admission

- Throat injected. Tonsils enlarged and a small patch of membrane on each.
- Glands - very marked cervical adenitis both sides.
- Heart & Lungs - No evidence of disease.
- Skin - no rash.
- No discharges.
- No Koplik's spots.
Treatment. Adrenalin m5 P.R.H. Poultices to neck.

Treatment. Salines.

Treatment. Salines. Formaldehyde 3 F.R.H. Mist A.S.A.m. 5 P.R.H.


P.M. Serum rash.

20.1.36 Circulation gradually became more feeble. Deteriorated. 

10.50 a.m. Died.
Disease. Severe faucial Diphtheria.

Date of Admission. 25.7.36

Day of disease on admission. Fourth.

Type of organism. Gravis.


Period for throat to clean. Dead before clean.

Date of Discharge. Date of Death. 5.8.36

Bacteriological Examination.
25.7.36
Cultures +
Dick Test -

History of Present Illness.
Sudden onset 21.7.36
Sore Throat 21.7.36
Adenitis 22.7.36
Vomiting 23.7.36

Treatment.
Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
A.B.S. 10 ccs No.1 I.V.
A.B.S. 25 ccs I.M. (26.7.36)
Mist A.S.A. m.10 P.R.N.

Previous Medical History.
Measles
Chicken Pox. In infancy.

Condition on Admission.
Tongue furred. Fauces injected and oedematous. Both tonsils covered extensively with membranous exudate.
Marked bilateral enlargement of cervical glands. Bullneck.
Profuse nasal discharge.
Skin clear. No Koplik's spots.
Heart - rapid, regular.
Marked tachycardia.
General condition - poor.


30.7.36 Membrane separating. Oedema of face improved. Petechiae present in left axilla.

31.7.36 Throat cleaning.

3.8.36 Throat not yet clean. Oedema of face disappeared. Heart sounds soft.

4.8.36 Heart - triple rhythm. General condition - very poor.

5.8.36 Patient collapsed and died of cardiac muscle failure.
Name  May Russell
Sex F  Age 12  Lab. No. 42

Disease. Severe faucial Diphtheria.
Date of Admission. 15.11.35
Day of disease on admission. Fifth.
Type of organism. Gravis.
Period for throat to clean. 3 Days.

Date of Discharge. 20.1.36  Date of Death.

Bacteriological Examination.
15.11.35
Cultures +
Dick Test +
11.1.36)
12.1.36) -
13.1.36)

Treatment.
Syringe fauces with chlorine water.
Poultices to neck.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Mist A.S.A.m.5 P.R.N.
A.B.S. 1 cc No.1 I.V.
A.B.S. 9 cc No.1 I.M.
A.B.S. 10 ccs I.V. (16.11.35)

History of Present Illness.
Last perfectly well 10.11.35
Last at school 11.11.35
Vomiting.
Sore throat, 11.11.35
Headache 11.11.35
Sleepiness
Glandular swelling 12.11.35
Nasal discharge 13.11.35

Previous Medical History.
Whooping Cough 1928
Chicken Pox
Scarlet Fever 1935
Bronchitis

Condition on Admission.
Throat injected. Thick loose membrane bleeding when swabbed on uvula, soft palate and both tonsils, nasopharynx involved.
Glands - periadenitis marked both sides of neck.
Heart sounds regular. Tone good
Lungs - breath sounds normal.
Colour - fair.
Nutrition good.
General condition - toxic.
15.11.35  Treatment. Salines, Paraaldehyde $\frac{3}{4}$ P.R. P.R.N. Mist A.S.A.M. 5 4 hourly.

16.11.35  Throat oedema less, membrane thickened over uvula and separating from tonsils.
Skin - no petechiae.
Heart - rapid, regular. Sounds closed, Rate 120.

Pulse regular - 120.
Urine - faint trace of albumen.
General condition - less toxic.

Treatment. Adrenaline plug to nose if necessary.

19.11.35  Epistaxis subsided.
23.11.35  Throat clean. Glands subsided.
Heart & circulation satisfactory.
Much better. Omit Mist A.S.A.

25.11.35  Heart sounds rapid. Pulse feeble.
Treatment. Radiant heat 4 hourly.
Camphor in Oil 1 cc P.R.N.

2.12.35  Generally improved. Conjunctivitis right eye.
Treatment. Irrigate eye 4% Boracic Lotion Instil Guttae Argyrol 10%.

4.12.35  Slight elevation of temperature.
Urine and stools satisfactory. Circulation fairly good.

5.12.35  Slight otorrhoea right ear.
Treatment. Clean ear with Hg C'2 Instil Guttae Spirite.
Ac: Bor.

8.12.35  Throat - collections of post nasal discharge.
Heart satisfactory.

9.12.35  Post nasal discharge troublesome.
13.12.35  Palatal paresis.

Nasal intonation in speech.
Heart - rapid and regular. Apex beat diffuse.

15.12.35  Difficulty in swallowing semi-solids.
Nasal feeds.

17.12.35  Collections of mucus troublesome.
Treatment. Blocks Suction.
Atropine gr\textsuperscript{1/10} P.R.N.

22.12.35  Palate immobile. Diaphragm acting well.


Circulation satisfactory.
General condition - improved.

29.12.35  Treatment. Semi-solids.
Off blocks.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.36</td>
<td>Heart regular.</td>
</tr>
<tr>
<td></td>
<td>Palate brisk.</td>
</tr>
<tr>
<td></td>
<td>General condition - satisfactory.</td>
</tr>
<tr>
<td></td>
<td>Treatment. 1 Pillow.</td>
</tr>
<tr>
<td>7.1.36</td>
<td>Improving.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Sit Up.</td>
</tr>
<tr>
<td>11.1.36</td>
<td>Treatment. On couch.</td>
</tr>
<tr>
<td>19.1.36</td>
<td>General condition - satisfactory.</td>
</tr>
<tr>
<td></td>
<td>Complete recovery.</td>
</tr>
<tr>
<td>20.1.36</td>
<td>Discharge to home.</td>
</tr>
</tbody>
</table>
Name: Hilda May Morris

Disease: Severe faucial Diphtheria.

Date of Admission: 13.5.36

Day of disease on admission: Fourth.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhoea ad.

Period for throat to clean: 5 Days.

Date of Discharge: Date of Death: 19.5.36

Bacteriological Examination.

13.5.36

Cultures +
Dick Test.

History of Present Illness.

Sudden onset.

Vomiting
Sleepiness
Sore throat: 10.5.36
Headache: 13.5.36

Glandular swelling
Bleeding from nose 13.5.36

Treatment.

Syringe fauces with chlorine water 4 hourly.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Mist A.S.A. m.5 4 hourly.
Brandy 3† P.R.N.
Salines.

Previous Medical History.

Whooping Cough: February 1936.

Measles: 1935.

Bronchitis:

Condition on Admission.

Tongue furred. Throat injected.

Extensive recent membraneous exudate on left side of palate, spreading edge. Thick membrane present on both tonsils.

Glands, adenitis and periadenitis, left side of neck. Skin clear.

Pallor marked. Nasal discharge.

Heart - rapid, regular.

Sounds clear.

Lungs - breath sounds normal.

General nutrition - only fair.

Patient toxic.
14.5.36 Membrane on palate and tonsils thickened.
  Oedema less. Glands subsided.
  Heart - rapid and regular.
  General condition - fair.
  Treatment: Salines.

15.5.36 Membrane separating. Glands subsiding.
  Skin clear. Nose dry. Patient restless.

16.5.36 Throat clean. Heart rapid. Tone poor.
  Colour poor. Pulse feeble.
  General condition - poor.

19.5.36 Heart - very irregular. Tone feeble.
  General condition - extreme.

2.20 p.m. Patient's condition deteriorated. Died.
Name: Barbara Huckle (119)  Sex: F  Age: 3  Lab. No: 411

Disease: Severe faucal Diphtheria.

Date of Admission: 23.3.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis and Rhinorrhoea ad.

Period for throat to clean: Dead before clean.

Date of Discharge: Date of Death: 30.3.36

Bacteriological Examination.

23.3.36
Cultures + Dick Test -

History of Present Illness.

Sore throat 21.3.36
Sleepiness Nasal discharge.

Treatment.

Syringe faucæ with chlorine water.
Desensitize.
A.D.S.40,000 units I.M.
A.D.S.40,000 units I.V.
Mist A.S.A.m.5 P.R.N.

Previous Medical History.

Chronic bronchitis.

Condition on Admission.

Tonsils enlarged. Membrane covering both, extending to uvula and anterior pillar of faucæ. Glands periadenitis right side of neck.
Heart - rapid and regular.
Sounds poor in quality.
Lungs - breath sounds vesicular.
Skin clear.
Profuse nasal discharge.
General condition - toxic.
24.3.36 Membrane necrotic, separating from tonsils and uvula. Glands subsiding.
Skin - clear.
Heart - very rapid. Sounds soft.
General condition - poor.
Treatment: Salines.

25.3.36 Still very toxic.
Colour and pulse unsatisfactory.
Restless at times.
Treatment: Paraldehyde 3 1/2 P.R.

29.3.36 Throat clean, ulcerated.
Patient restless at times.
Pulse extremely rapid. Colour unsatisfactory.
Condition - extreme.
Treatment: Camphor in oil 1/2 cc 4 hourly.
Oxygen P.R.N.

30.3.36 Patient's condition deteriorated and she 2.40 a.m. died.
Name: Donald Stewart
Sex: M
Age: 3
Lab. No.: 361

Disease: Severe faucial Diphtheria.

Date of Admission: 28.2.36
Day of disease on admission: Fifth.
Type of organism: Gravis.

Complications: Adenitis, Rhinorrhea, Albuminuria ad.
Cardiac Irregularity 43.

Period for throat to clean: 5 days.
Date of Discharge: 5.5.36

Bacteriological Examination:
28.2.36
Cultures +
Dick Test +
28.4.36)
29.4.36) -
30.4.36)

History of Present Illness:
Vomiting.
Sleepiness.
Sore throat.
Headache.
Glandular swelling.

Treatment:
Syringe fauces with chlorine water 4 hourly.
Poultices to neck.
A.D.S. 40,000 units I.M.
A.D.S. 40,000 units I.V.

Previous Medical History:
Nil.

Condition on Admission:
Thick membrane present on both tonsils, which are enlarged and edematous.
Profuse purulent nasal discharge.
Glands enlarged both sides of neck.
Heart sounds - regular. Tone fair.
Lungs - breath sounds normal.
Skin - clear.
General condition - fairly good.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.36</td>
<td>Membrane not entirely separated. Profuse nasal discharge. Pulse volume poor.</td>
</tr>
<tr>
<td>16.3.36</td>
<td>Palate active. Heart sounds soft but regular. Muscles flabby. Treatment. Mist A.S.A. m³ P.R.N.</td>
</tr>
<tr>
<td>30.3.36</td>
<td>Palate active. Colour and pulse satisfactory.</td>
</tr>
<tr>
<td>8.4.36</td>
<td>Palate still flaccid. Treatment. Strychnine qr ½coo B.I.D</td>
</tr>
<tr>
<td>15.4.36</td>
<td>Palate sluggish. Heart sounds irregular. General condition - fair.</td>
</tr>
<tr>
<td>24.4.36</td>
<td>Improving. Treatment. Sit up. Omit strychnine.</td>
</tr>
<tr>
<td>27.4.36</td>
<td>Heart regular, tone improved. Muscles more firm. Patient progressed satisfactorily.</td>
</tr>
<tr>
<td>5.5.36</td>
<td>Discharged well.</td>
</tr>
</tbody>
</table>
Name: John Rupert Steadman

Sex: M  Age: 3

Lab. No: 230

Disease: Very Severe faucial Diphtheria.

Date of Admission: 8.1.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis. Cardiac Irregularity.

Period for throat to clean: 6 Days.

Date of Discharge: 7.3.36  Date of Death: 

Bacteriological Examination:

9.1.36
Cultures + pre. ad.
Cultures + on ad.
Dick Test +
26.2.36)
27.2.36)
28.2.36)

History of Present Illness:

Sore throat)
Headache  ) 6.1.36
Shivering  )
+ K.L.B. swab 6.1.36

Treatment:

Syringe fauces with chlorine water 4 hourly.
A.D.S.20,000 units IM
A.D.S.20,000 units IM 12.40 a.m.
A.D.S.60,000 units IV (9.1.36)

History of Present Illness:

Sore throat)
Headache  ) 6.1.36
Shivering  )
+ K.L.B. swab 6.1.36

Previous Medical History:

Measles 1934.

Condition on Admission:

Glands not enlarged.
Heart - sounds closed and regular.
Chest - clear.
Skin - no rash. No Koplik's spots.
No discharges.
General condition - fairly good.
8.1.36  Extensive membrane over both tonsils.  Glan " markedly enlarged.
9.1.36  Spread of membrane on to anterior pillar of fauces left side and soft palate. Adenitis more marked to-day.  General condition - rather more toxic.  Treatment. Mist A.S.A. m.6 P.R.N. Adrenalin m.6
10.1.36 Membrane thickening. Pulse and colour satisfactory. Heart - rapid and regular.  Treatment - Salines.
16.1.36 General improvement.
19.1.36 Colour and pulse varies at times. Muscles soft. General condition - only fair.
25.1.36 General condition - seems improved.
31.1.36 Throat - palate active. Heart irregular. Tone fair.
7.2.36 Palate active. Heart satisfactory. General condition - fairly good.
14.2.36 Improving - colour and pulse good.
18.2.36 Treatment. 1 Pillow.
20.2.36 Improving.
23.2.36 Improvement maintained.
28.2.36 Treatment. In clothes.
7.3.36 Discharged fit.
Name: George Williamson  
Sex: M  
Age: 4  
Lab. No.: 785

<table>
<thead>
<tr>
<th>Disease: Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission: 5.8.36</td>
</tr>
<tr>
<td>Day of disease on admission: Fifth</td>
</tr>
<tr>
<td>Type of organism: Gravis</td>
</tr>
<tr>
<td>Complications: Adenitis, Rhinorrhoea ad, Petechiae 6</td>
</tr>
<tr>
<td>Circulatory failure</td>
</tr>
<tr>
<td>Period for throat to clean: Dead before clean</td>
</tr>
<tr>
<td>Date of Discharge:</td>
</tr>
<tr>
<td>Date of Death: 8.8.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.8.36 Cultures + Dick Test -</td>
<td>Sudden onset</td>
</tr>
<tr>
<td>Vomiting Sore throat) 1.8.36 Adenitis</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment.</th>
<th>Previous Medical History.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.D.S. 40,000 units I.M.</td>
<td>Mil.</td>
</tr>
<tr>
<td>A.D.S. 60,000 units I.V.</td>
<td></td>
</tr>
<tr>
<td>Syringes fauces with chlorine water 4 hourly.</td>
<td></td>
</tr>
<tr>
<td>Mist A.S.A. m.4 4 hourly.</td>
<td></td>
</tr>
<tr>
<td>Camphor in oil 1 cc P.R.N.</td>
<td></td>
</tr>
</tbody>
</table>

Condition on Admission.  

![Diagram of a throat with inflamed tonsils and a furred tongue]

7.8.36 Pulse 50. Regular. Thready. Marked double bullneck


Name: Rosie Glover.

Sex: F  Age: 5  Lab. No.: 660

Disease: Severe faucial Diphtheria.

Date of Admission: 28.6.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhoea ad Serum Rash 16

Period for throat to clean: 4 Days.

Date of Discharge: 2.9.36  Date of Death:

Bacteriological Examination.

28.6.36
Cultures +
Dick Test +

26.8.36
27.8.36
28.8.36

Treatment.

Syringe fauces with chlorine water. thrly.
A.D.S. 40,000 units I.M.
Desensitize.
A.D.S. 60,000 units I.V.  (p.m.)
Mist A.S.A. m.5 P.R.N.

History of Present Illness.

Gradual onset.
Vomiting.
Sore throat. 27.6.36 Glandular Swelling.)

Previous Medical History.

Immunised against Diphtheria 2 doses 1½ years ago.
Measles, whooping cough) Dates
Mumps and chicken pox unknown.

Condition on Admission.

Throat injected. Thin grey membrane covering right tonsil and left tonsil also partly covered. Glands enlarged both sides of neck.
Heart - rapid and regular.
Lungs - breath sounds normal.
Skin clear. No Koplik's spots.
No discharges.
General condition - fair.
Treatment. A.D.S. 60,000 units I.V. Salines.

29.6.36 Membrane thickened over both tonsils. Glands subsiding.
Heart - satisfactory.
General condition - fairly good.

3.7.36 Throat clean.
Heart regular. Colour and pulse satisfactory.

11.7.36 Generalised serum rash.

13.7.36 Palate active.
Heart sounds - closed and regular. Tone fair.
Improving.

20.7.36 Improvement maintained.

27.7.36 Palate active.
Heart sounds closed and regular. Colour and pulse good. No paresis.

7.8.36 General condition improved.

12.8.36 Elevation in pulse rate.

17.8.36 Heart more satisfactory. Pulse steadier.

19.8.36 General condition - improved.
Treatment. 1 Pillow.

25.8.36 Improvement maintained.
Treatment. Up on couch.

2.9.36 Convalescence continued uninterrupted and patient discharged fit and well.
Name: Irene Denton

Disease: Severe faucal Diphtheria.

Date of Admission: 15.6.36

Day of disease on admission: Fourth.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhoea, Serum Rash, Septic Finger, Strabismus, Palatal Paresis, Foot drop.

Period for throat to clean: 5 Days.

Date of Discharge: 4.9.36

Date of Death:

Bacteriological Examination:
15.6.36
Cultures +
Dick Test +
30.8.36 -
31.8.36 -

History of Present Illness:
Last quite well 11.6.36
Vomiting
Sleepiness 12.6.36
Headache
Glandular swelling 13.6.36
Sore throat 15.6.36
Difficulty in breathing 15.6.36

Treatment:
Syringe fauces with chlorine water 4 hourly.
Poultices to neck.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Mist. A.S.A. m.5 P.R.N.
Brandy 3 P.R.N.

Previous Medical History:
Bronchitis.

Condition on Admission:
Heart rapid. Sounds pure.
Lungs clear.
General condition - Fair.
No Koplik's spots.
16.2.36 Throat clearing. Glands still enlarged.
   Heart sounds regular.
   General condition good.

20.6.36 Throat clean.

24.6.36 Marked urticarial serum rash.
   Heart sounds soft.
   Pulse volume and force poor.

25.6.36 Septic index finger left hand.

20.6.36 Throat clean.
   Heart sounds regular. Tone fair.

24.6.36 Marked urticarial serum rash.
   Heart sounds soft.
   Pulse volume and force poor.

1.7.36 Throat clean.
   Heart regular. Tone fair.

6.7.36 Palate active. Colour and pulse satisfactory.
   Heart regular.

13.7.36 Improving.
   Heart tone fair. Colour pale.

20.7.36 Palate sluggish. Heart regular.

27.7.36 Palate moving quite briskly. Int. strabismus left eye.

8.7.36 Speech clear. Squint still present.

15.7.36 Eyes improved. No squint. Palate active.
   Circulation satisfactory.

21.7.36 General condition improved.

28.7.36 Mild degree of left foot drop.

4.9.36 Circulation satisfactory. Convalescence was continued uninterrupted, and patient was discharged walking stiffly.
Name: Sheila Walker

Sex: F  Age: 4  Lab. No.: 609

Disease: Faucial Diphtheria.

Date of Admission: 13.6.36
Day of disease on admission: Fourth

Type of organism: Gravis

Complications: Cervical Adenitis, Cardiac Muscle Failure 13

Period for throat to clean: 5 Days.

Date of Discharge: Date of Death: 25.6.36

Bacteriological Examination:

13.6.36
Cultures +
Dick Test -

History of Present Illness:

Vomiting
Sore Throat. 12.6.36
Glandular Swelling

Treatment:

Syringe fauces 4 hourly with chlorine water.
A.D.S.30,000 units I.M.
A.D.S.40,000 units I.V.

Previous Medical History:

Measles 1934.

Condition on Admission:

Tongue furred. Fauces injected.
Heart - rapid. Marked tachycardia.
Lungs - breath sounds normal.
General condition - toxic.
Heart very rapid.
Condition - toxic.
Treatment. Adrenalin m.5 P.R.N.

19.6.36 Throat clean, but ulcerated.
Glands subsided.
Colour and pulse poor.

23.6.36 Heart irregular. Marked tachycardia.
Colour and pulse unsatisfactory.
Treatment. Mist A.S.A. m.5 4 hourly.

24.6.36 Vomiting to-day. Throat clean.
Post-nasal discharge present.
Tachycardia. Heart sounds very soft.
Pulse - poor in volume.
Treatment. Salines.
Camphor in Oil ½ c.c. P.R.N.
Radiant Heat.
Oxygen P.K.N.

25.6.36 Patient’s condition deteriorated and she died.

7.30 a.m.
Name: Jack Waldron  
Sex: M  
Age: 5  
Lab. No.: 535

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>23.5.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Third.</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis.</td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>7 days.</td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>29.7.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.5.36 Cultures + Dick Test +</td>
<td>Sore throat 21.5.36</td>
</tr>
<tr>
<td></td>
<td>Vomiting</td>
</tr>
<tr>
<td></td>
<td>Shivering</td>
</tr>
<tr>
<td>24.7.36) 25.7.36) 26.7.36)</td>
<td>Adenitis 22.5.36</td>
</tr>
<tr>
<td></td>
<td>Rhinorrhoea</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment.</th>
<th>Previous Medical History.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringe fauces with chlorine water 4 hourly. A.D.S. 40,000 units I.M. A.D.S. 80,000 units I.V.</td>
<td>Measles, 1934</td>
</tr>
<tr>
<td></td>
<td>Whooping cough, 1934.</td>
</tr>
<tr>
<td></td>
<td>Chicken pox, 1934.</td>
</tr>
<tr>
<td></td>
<td>Immunised against Diphtheria 10 weeks ago.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition on Admission.</th>
<th></th>
</tr>
</thead>
</table>
23.5.36 Extensive membrane on both tonsils, and uvula.
Glands periadenitis ++. Skin clear.
Heart rapid. Sounds closed.
Nasal discharge. Muscles very soft.
Colour and pulse poor.
General condition - toxic.
Treatment. Salines. Mist. A.S.A.m.5 P.R.N.

24.5.36 Vomited to-day. Membrane separating.
Colour and pulse poor.

26.5.36 Still vomiting. Colour and pulse poor.
Heart very rapid.
Treatment. Camphor in oil 1/3 cc P.R.N.

30.5.36 Throat clean.

2.6.36 Generally improved. Circulation more satisfactory.

7.6.36 Palate active.
Heart rapid and regular. Colour and pulse good.

16.6.36 Palate active. Speech clear.
Heart sounds - closed and regular.
Generally greatly improved.

30.6.36 Improvement maintained.

5.7.36 General condition - good.
Treatment. 1 Pillow.

10.7.36 Muscle tone improved. Colour and pulse good.
Heart - regular.
Treatment. Up.

29.7.36 Convalescence continued uninterrupted.
Patient discharged well.
<table>
<thead>
<tr>
<th>Name</th>
<th>Ellen Kelly</th>
<th>Sex</th>
<th>Age</th>
<th>Lab. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease</td>
<td>Severe faucial Diphtheria.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Admission</td>
<td>21.5.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Third.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>5 Days.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>6.8.36</td>
<td></td>
<td></td>
<td>Date of Death.</td>
</tr>
</tbody>
</table>

**Bacteriological Examination.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.5.36</td>
<td>Cultures + Dick Test -</td>
</tr>
<tr>
<td>3.8.36</td>
<td></td>
</tr>
<tr>
<td>4.8.36</td>
<td>-</td>
</tr>
<tr>
<td>5.8.36</td>
<td></td>
</tr>
</tbody>
</table>

**History of Present Illness.**

- Sore throat. 19.5.36
- Vomiting.
- Headache. 20.5.36
- Glandular swelling

**Previous Medical History.**

- Measles

**Treatment.**

- Syringe fauces with chlorine water 4 hourly.
- Pre-ad. serum ? quantity.
- A.D.S. 40,000 units I.M.
- A.D.S. 40,000 units I.V.
- Mist A.S.A. m. 5 P.R.N.

**Condition on Admission.**

- Throat. Tonsils enlarged and oedematous, membrane covering both.
- Glands enlarged on both sides of neck, with a degree of periadenitis on right side of neck. Nasal discharge present. No rash.
- No Koplik's spots.
- Heart - regular, rapid. Tone fair.
- Lungs - breath sounds normal.
- Eyes - Right internal strabismus.
- General condition - fair.
22.5.36 Extensive membrane over both tonsils, which is thickening and separating. Periadenitis still present, right side of neck.
Heart - regular. Colour and pulse satisfactory.
General condition - good.
3.6.36 Palate active. Heart sounds closed and regular. No paresis.
General condition - good.
8.6.36 Palate sluggish. Nasal intonation in speech.
Heart regular.
15.6.36 Palate still sluggish. Facial paresis.
16.7.36 Paresis of palate and face still present.
11.7.36 Improving.
13.7.36 Palate active. Circulation satisfactory.
14.7.36 Vomited undigested food. Colour and pulse good.
15.7.36 Heart regular. Tone fair. No further vomiting.
16.7.36 Vomiting. Colour and pulse fair.
General condition - poor.
20.7.36 General condition - more satisfactory.
6.8.36 Convalescence continued uninterrupted and patient discharged on 6.8.36
<table>
<thead>
<tr>
<th>Name</th>
<th>Mary O'Grady</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>F</td>
</tr>
<tr>
<td>Age</td>
<td>41 лет</td>
</tr>
<tr>
<td>Lab. No.</td>
<td>512</td>
</tr>
</tbody>
</table>

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 18.5.36

**Day of disease on admission.** Third.

**Type of organism.** Gravis.

**Complications.** Rhinorrhea and Adenitis ad. Cardiac Muscle Failure.

**Period for throat to clean.** Dead before clean.

**Date of Discharge.**

<table>
<thead>
<tr>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vomiting. }</td>
</tr>
<tr>
<td>Sleepiness. } 16.5.36</td>
</tr>
<tr>
<td>Sore Throat. )</td>
</tr>
<tr>
<td>Glandular swelling both sides of neck - 16.5.36</td>
</tr>
</tbody>
</table>

**Bacteriological Examination.**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18.5.36</td>
</tr>
<tr>
<td>Cultures +</td>
</tr>
<tr>
<td>Dick Test -</td>
</tr>
</tbody>
</table>

**Treatment.**

- Syringe faucice with chlorine water 4 hourly.
- A.D.S. 40,000 units I.M.
- A.D.S. 60,000 units I.V.
- Adrenalin m.5 P.R.N.

**Previous Medical History.**

- Measles in infancy.

**Condition on Admission.**

- Heart: rapid and regular. Sounds closed.
- Lungs: breath sounds normal.
- General condition: toxic.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.5.36</td>
<td>Membrane thickened over both tonsils, present on uvula. Adenitis and periadenitis unchanged. Heart - very rapid. General condition - toxic.</td>
</tr>
<tr>
<td>p.m.</td>
<td></td>
</tr>
<tr>
<td>23.5.36</td>
<td>Deteriorated. Died.</td>
</tr>
<tr>
<td>3.10 a.m.</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Joan Broadbent</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Disease</td>
<td>Severe faucial Diphtheria.</td>
</tr>
<tr>
<td>Date of Admission</td>
<td>7.5.36</td>
</tr>
<tr>
<td>Day of disease on admission</td>
<td>Third.</td>
</tr>
<tr>
<td>Type of organism</td>
<td>Gravis.</td>
</tr>
<tr>
<td>Complications</td>
<td>Adenitis, Rhinorrhea ad., Albuminuria 9, Palatal Paresis 35.</td>
</tr>
<tr>
<td>Period for throat to clean</td>
<td>5 Days.</td>
</tr>
<tr>
<td>Date of Discharge</td>
<td>4.7.36</td>
</tr>
</tbody>
</table>

**Bacteriological Examination**
- 7.5.36
- Pre.ad. swab + Dick Test -
- 1.7.36
- 2.7.36
- 3.7.36

**History of Present Illness**
- Sudden onset. In bed since 5.5.36
- Vomiting. )
- Sleepiness. }
- Sore throat. 5.5.36
- Cough. )
- Headache. )
- Glandular swelling 6.5.36

**Previous Medical History**
- Chicken Pox 1933.
- Measles, April 1936

**Treatment**
- Syringe fauces with chlorine water 4 hourly.
- A.D.S. 40,000 units I.M.
- A.D.S. 60,000 units I.V.
- Salines.
- Poultices to neck.

**Condition on Admission**
- Tongue furred. Throat injected.
- Extensive membranous exudate with active edge covering right side of tonsil and palate. Patches of membrane on left tonsil, uvula oedematous. Foetor well marked.
- Glands enlarged with periadenitis right side of neck. Nasal discharge
- Heart regular. Sounds clear.
- Lungs - breath sounds normal.
- No Koplak's spots.
- General condition - fair.
Heart - regular and rapid.
General condition - toxic.

11.5.36 Throat clean. Tonsils +. Glands subsided.

13.5.36 Improving.

25.5.36 Palate active. Circulation satisfactory.

1.6.36 Palate active.
Heart - very poor 1st sound.
General condition - only fair.
Treatment. Mist. A.S.A. m.5 P.R.N.

8.6.36 Palate sluggish.
Heart - 1st sounds still soft.

15.6.36 Palate sluggish. Nasal phonation well marked.
Heart tone improved.
Treatment. Strychnine gr.1/200 B.I.D.

24.6.36 Palate brisk. Speech clear.
Heart improved.

25.6.36 Treatment. 1 Pillow.

28.6.36 Improvement maintained.
Treatment. Omit strychnine.

4.7.36 Convalescence continued uninterrupted and patient discharged fit.
Name: George Norris  
Sex: M  
Age: 4  
Lab. No.: 470

**Disease:** Severe faucial Diphtheria.

**Date of Admission:** 4.5.36

**Day of disease on admission:** Fifth.

**Type of organism:** Gravis.

**Complications:** Adenitis, Rhinorrhoea ad., Cardiac Collapse 6 & 7

**Period for throat to clean:** Dead before clean.

**Date of Discharge:**  
**Date of Death:** 9.5.36

---

**Bacteriological Examination.**

- **4.5.36**
  - Cultures +
  - Dick Test +

**History of Present Illness.**

- Vomiting
- Sleepiness: 3.5.36
- Sore Throat
- Glandular swelling
- Nasal discharge: 4.5.36

---

**Treatment.**

- Syringe fauces with chlorine water 4 hourly.
- Poultices to neck 4 hourly.
- A.D.S. 40,000 units I.M.
- A.D.S. 40,000 units I.V.
- Adrenalin m. 5 P.R.N.
- A.D.S. 40,000 units I.V. (5.5.36 p.m.)

**Previous Medical History.**

- Whooping cough: 1935
- Chicken pox
- Measles

**Condition on Admission.**

- Throat: Tonsils enlarged. Membrane covering both extending on to palate.
- Uvula oedematous. Slight nasal discharge. Glands enlarged both sides of neck, periadenitis on left.
- Skin clear.
- Heart: regular and rapid
- Lungs: breath sounds normal.
- General condition: fair.

8.5.36 | Extension of membrane on soft palate.

5.5.36 | Throat almost clean. Tonsils -. Glands subsided. Heart tone very poor. Colour poor. Pulse feeble at times.

8.5.36 | Treatment. A.D.S. 40,000 units I.V.

8.5.36 | General condition - poor.

9.5.36 | No vomiting to-day.

9.5.36 | Heart tone poor. Pulse very poor.


9.5.36 | Condition - extreme.

2.35 p.m. | Patient's condition deteriorated. Died.
Name: William Hammond  
Sex: M  
Age: 5  
Lab. No.: 456

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>21.4.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Third</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis</td>
</tr>
<tr>
<td>Complications.</td>
<td>Adenitis ad. Scarlet Fever 28</td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>6 Days</td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>4.7.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination.</td>
<td>Sore throat.</td>
</tr>
<tr>
<td>21.4.36</td>
<td>Sleepiness. ) 21.4.36</td>
</tr>
<tr>
<td>Cultures +</td>
<td>Glandular Swelling</td>
</tr>
<tr>
<td>Dick Test +</td>
<td></td>
</tr>
<tr>
<td>28.6.36</td>
<td>Patient's Mother admitted to Monsall</td>
</tr>
<tr>
<td>29.6.36 -</td>
<td>several days previously with</td>
</tr>
<tr>
<td>30.6.36</td>
<td>Diphtheria.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment.</th>
<th>Previous Medical History.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringe fauces with</td>
<td>Measles. ) 1935</td>
</tr>
<tr>
<td>chlorine water 4 hourly</td>
<td>Whooping Cough</td>
</tr>
<tr>
<td>A.D.S.40,000 units I.M.</td>
<td></td>
</tr>
<tr>
<td>A.D.S.40,000 units I.V.</td>
<td>(22.4.36)</td>
</tr>
</tbody>
</table>

| Condition on Admission. | |
|--------------------------| |
| Tonsils enlarged and covered with | |
| patchy looking membrane extending on to 1/3 soft palate. | |
| Tongue coated. Nasal discharge slight. | |
| Glands enlarged on both sides of neck. | |
| No Koplik's spots. | |
| Skin clear. | |
| Heart sounds regular. | |
| Lungs - breath sounds normal. | |
| General condition - fairly good. | |
Membrane active on left tonsil. Spreading on to palate. Oedema of fauces. Periadenitis right side of neck. Colour and pulse poor.

Treatment. Mist A.S.A. m.5 P.R.N.

Membrane well thickened and separating. Glands still enlarged in neck.

Heart rapid. Pulse soft.

General condition - more toxic.

Throat clean.

Heart sounds - closed, rapid and regular.

Colour and pulse good.

Improving.

Progress maintained.

Pulse active. Colour and pulse satisfactory.

Heart - regular.

General condition - better.


Recurrent of Dick Test.

Treatment. Transfer to Cubicles. Scarlet Fever.

Desquamation of both hands.

Colour and pulse satisfactory.

Circulation satisfactory.

Treatment. 1 Pill or.

Convalescence uneventful. Patient discharged.
**Name:** William Grafton  
**Sex:** M  
**Age:** 5  
**Lab. No.:** 453

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 16.4.36

**Day of disease on admission.** Fourth.

**Type of organism.** Gravis.

**Complications.** Adenitis. Rhinorrhoea ad. Petechiae 6

**Period for throat to clean.** Dead before clean.

**Date of Discharge.**  
**Date of Death.** 21.4.36

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.4.36 Cultures + Dick Test -</td>
<td>Patient not well since 13.4.36</td>
</tr>
<tr>
<td></td>
<td>Confined to bed on 15.4.36</td>
</tr>
<tr>
<td></td>
<td>Sore throat.</td>
</tr>
<tr>
<td></td>
<td>Vomiting.</td>
</tr>
<tr>
<td></td>
<td>Nasal Discharge.</td>
</tr>
</tbody>
</table>

**Treatment.**

- Syringe fauces with chlorine water 4 hourly.
- Poultices to neck.
- A.D.S. 40,000 units I.M.
- Mist A.S.A. m.5 4 hourly.
- A.D.S. 40,000 units I.V.
- Radiant Heat.
- Salines.
- Oxygen.

**Previous Medical History.**

- Measles - 1933
- Pneumonia.

**Condition on Admission.**

- Tongue furred. Throat injected.
- Skin clear. Very marked pallor.
- Profuse seropurulent Rhinorrhoea.
- No Koplik's spots.
- Heart - regular. 1st mitral sound impure.
- Lungs - breath sounds normal.
- Nutrition - poor.
- General condition - toxic.
17.4.36 Thick necrotic membrane over both tonsils.
Foeotor ++. Skin bruising present.
Heart sounds -, soft, irregular. Tone poor.
Colour and pulse very unsatisfactory.
General condition - very poor.
Toxaemia ++

P.M. Very restless.
Treatment. Paraldehyde 3 1/2 P.R.

18.4.36 Generalised bruising. Colour and pulse poor.
Heart irregular and feeble.
General condition - toxic.
Treatment. Camphor in oil 1/2 cc P.R.N.

19.4.36 Throat cleaning. Skin petechial.
Haemorrhages ++ on arms, chest and legs.
Heart sounds feeble, irregular.
General condition - extremely poor.

20.4.36 Bleeding from nose, probably separation of membrane in nasopharynx. Peripheral circulation feeble.
Extremities cold.
General condition - extreme.

21.4.36 Patient's condition gradually became worse and he died 4.50 a.m.
Name: Joyce Leigh

Sex: F  Age: 5  Lab. No: 281

Disease: Severe faucial Diphtheria.

Date of Admission: 25.1.36

Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Rhinorrhoea. Adenitis ad Serum rash 9

Period for throat to clean: 6 Days.

Date of Discharge: 24.3.36  Date of Death:

Bacteriological Examination.

25.1.36  Cultures + Dick test +

20.3.36)  21.3.36) -  22.3.36)

Treatment.

Syrings fauces with chlorine water. 4 hourly
A.D.S. 8,000 units pre.ad.  A.D.S.40,000 units I.M.
A.D.S.60,000 units I.V.
Poultries to neck.

History of Present Illness.

Sleepiness
Sore throat
Headache.  } 25.1.36
Shivering.  }
Glandular swelling.

Previous Medical History.

Chicken Pox 1934.
Whooping Cough 1935
Measles 1934.

Condition on Admission.

Fauces very injected, uvula oedematous. Both tonsils and nasopharynx covered with membrane.
Heart - regular.
Lungs - breath sounds normal.
Skin clear.
Some periadenitis present both sides of neck.
General condition - fair.

27.1.36  Membrane necrotic shrinking. Colour and pulse poor.


2.2.36  Generalised serum rash. Adrenalin m.5 P.R.N.

7.2.36  Rather improved. Omit Mist A.S.A.


21.2.36  Palate active, no paresis. Heart more satisfactory.

28.2.36  Improvement maintained.

6.3.36  Palate active. No paresis. Heart regular, tone improved. Treatment. 1 Pillow.

13.3.36  Improvement maintained.

Treatment. Sit up.

16.3.36  Treatment. Up. Convalescence continued uninterrupted and patient was discharged fit.
Name | Dorothy Moore
---|---
Sex | F
Age | 5
Lab. No. | 219

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>10.1.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Third</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis</td>
</tr>
<tr>
<td>Complications.</td>
<td>Adenitis, Rhinorrhea ad. Serum rash 5, Aluminuria 16, Palatal Paralysis 35, Strabismus 37, Left Otorrhoea 36</td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>6 Days</td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>27.3.36</td>
</tr>
</tbody>
</table>

| Date of Death. | |

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1.36</td>
<td>Sore throat 7.1.36</td>
</tr>
<tr>
<td>Cultures +</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>Dick Test -</td>
<td>Glandular swelling</td>
</tr>
<tr>
<td>23.3.36</td>
<td>9.1.36</td>
</tr>
<tr>
<td>24.3.36</td>
<td></td>
</tr>
<tr>
<td>25.3.36</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Treatment.</th>
<th>Previous Medical History.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.D.S.3,000 units pre.ad. Syringe fauces with chlorine water 4 hourly.</td>
<td>Bronchitis 3 years ago.</td>
</tr>
<tr>
<td>A.D.S.40,000 units I.M.</td>
<td></td>
</tr>
<tr>
<td>A.D.S.60,000 units I.V.</td>
<td></td>
</tr>
<tr>
<td>Adrenalin m.5</td>
<td></td>
</tr>
<tr>
<td>Mist.A.S.A. m.5 P.R.N.</td>
<td></td>
</tr>
<tr>
<td>Radiant Heat.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition on Admission.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>23.1.36</td>
<td>Albumen and trace of blood in urine. Treatment: Blanket bed and fluids.</td>
</tr>
<tr>
<td>27.1.36</td>
<td>Joint pains improving. Urine albumen less. General condition - Improved a little.</td>
</tr>
<tr>
<td>2.2.36</td>
<td>Profuse Otorrhoea. Treatment: Cleanse ear 4 hourly.</td>
</tr>
<tr>
<td>6.2.36</td>
<td>Enteritis. One stool relaxed and offensive. No blood or mucous. Treatment: Barrier. Mist Bismuth $\frac{3}{4}$ 4 hourly.</td>
</tr>
<tr>
<td>9.2.36</td>
<td>Stool normal</td>
</tr>
<tr>
<td>12.2.36</td>
<td>Palate immobile. Nasal phonation present. Heart rapid and regular. Treatment: Nasal feeds. Atropine gr. $\frac{1}{10}$ P.R.N.</td>
</tr>
<tr>
<td>13.2.36</td>
<td>Slight internal strabismus left eye.</td>
</tr>
<tr>
<td>17.2.36</td>
<td>Palate still immobile. Colour and pulse poor.</td>
</tr>
<tr>
<td>2.3.36</td>
<td>Treatment: 1. Pillow.</td>
</tr>
<tr>
<td>6.3.36</td>
<td>Improvement maintained. Treatment: Sit up.</td>
</tr>
<tr>
<td>11.3.36</td>
<td>? Slight drooping of left side of face.</td>
</tr>
<tr>
<td>27.3.36</td>
<td>Patient discharged.</td>
</tr>
</tbody>
</table>
Name: Ronald Ellis  
Sex: M  
Age: 5  
Lab. No.: 149

Disease: Severe faucial Diphtheria.

Date of Admission: 10.12.35

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis ad Albuminuria 12 Otorrhoea 28  
Palatal Paralysis 32  Diaphragmatic paralysis.

Period for throat to clean: 5 Days.

Date of Discharge:  
Date of Death: 10.1.36

Bacteriological Examination.
10.12.35
Cultures +
Dick Test +

History of Present Illness.
Last perfectly well 7.12.35
Confined to bed 8.12.35.
Vomiting, sleepiness on the 10.12.35
Headache on 8.12.35
Sore throat 9.12.35
Glandular swelling 10.12.35.

Treatment.
Syringe fauces with chlorine water 4 hourly.
Poultries.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Adrenalin milli P.R.N.
Radiant Heat.

Previous Medical History.
Ear discharge after measles, August 1935.
Whooping cough 1932.
Bronchitis 1933.

Condition on Admission.
Thin filmy membrane covering both tonsils which are enlarged and oedematous and 1/2 soft palate involved.
Tongue coated. No Koplik's spots.
No discharges.
Glands and periglandular tissue swollen, mostly on left side of neck.
Heart sounds - regular. Tone fair.
Nutrition and colour good.
Skin - clear.
General condition - fairly toxic.
Date | Description
--- | ---
10.12.35 | Throat - still oedematous. Membrane separating. Treatment. Salines. Paraidehyde \( \frac{3}{4} \) P.R.N.
29.12.35 | No further vomiting. Colour and pulse improved. Treatment. Fluids. Camphor in oil .5 cc P.R.N.
5.1.36 | Left Otorrhoea.
10.1.36 | Died. Diaphragmatic paralysis.
9.40 a.m.
Name: Audrey Potter  
Sex: F  
Age: 7  
Lab. No.: 789

<table>
<thead>
<tr>
<th>Disease</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission</td>
<td>5.8.36</td>
</tr>
<tr>
<td>Day of disease on admission</td>
<td>Fourth</td>
</tr>
<tr>
<td>Type of organism</td>
<td>Gravis</td>
</tr>
<tr>
<td>Complications</td>
<td>Adenitis, Rhinorrhoea ad., Petechiae 5</td>
</tr>
<tr>
<td></td>
<td>Triple Rhythm 6., Cardiac Muscle Failure</td>
</tr>
<tr>
<td>Period for throat to clean</td>
<td>Dead before clean</td>
</tr>
<tr>
<td>Date of Discharge</td>
<td></td>
</tr>
<tr>
<td>Date of Death</td>
<td>8.8.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological Examination</th>
<th>5.8.36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultures +</td>
<td></td>
</tr>
<tr>
<td>Dick Test -</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>History of Present Illness</th>
<th>Sleepiness</th>
<th>Sore throat</th>
<th>Glandular swelling</th>
<th>Shivering</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.8.36</td>
<td>2.8.36</td>
<td>4.8.36</td>
<td>5.8.36</td>
</tr>
</tbody>
</table>

| Treatment.             | Syringe fauces with chlorine water, 4 hourly A.D.S. 8,000 units pre.ad.  
                        | A.D.S.40,000 units I.M.  
                        | A.D.S.60,000 units I.V.  
                        | Hist.A.S.A. m.7 P.R.N.  

<table>
<thead>
<tr>
<th>Previous Medical History</th>
<th>Bronchitis 1936</th>
</tr>
</thead>
</table>

| Condition on Admission. | Tongue furred. Throat injected.  
                        | Tonsils enlarged, covered with thick membrane, which extends up on to soft and hard palate and downwards to Post. wall of pharynx.  
                        | Bilateral cervical adenitis and periadenitis. Skin clear.  
                        | No Kopluk's spots.  
                        | Heart = regular and rapid.  
                        | General condition -, very poor. |
Membrane thickening, extending well up on to hard palate. Periadenitis unchanged. Foetor very marked. Petechiae left axilla.

Heart - regular and rapid. Sounds very soft. General condition - poor.

Vomiting coffee ground material during night. Membrane separating, leaving ulcerated bleeding area. Foetor still marked. Glands enlarged. Skin, many petechiae.


Patient's condition deteriorated and she died.

1.55 a.m.
Name: Elsie Denton

Disease: Severe faucial Diphtheria.

Date of Admission: 12.6.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis and Albuminuria 12

Period for throat to clean: 5 Days

Date of Discharge: 13.8.36

Bacteriological Examination:
12.6.36
Cultures +
Dick Test +
11.8.36)
12.8.36) -
13.8.36)

Treatment:
Syringe faucies with chlorine water. 4hrly
A.D. S.40,000 units I.M.
A.D. S.60,000 units I.V.
Mist A.S.A. m.5 P.R.N.

History of Present Illness.
Vomiting )
Sleepiness ) 10.6.36
Sore throat)

Previous Medical History.
Measles in infancy

Condition on Admission.
Throat injected. Tonsils oedematous, covered with thick yellow membrane. Spreading on to the posterior pharyngeal wall.
Marked foetor of breath. Glands enlarged both sides of neck.
Periadenitis on the right side.
Skin clear.
Heart - marked tachycardia.
Lungs - breath sounds normal.
No nasal discharge.
General condition - fairly good.
13.6.36 Membrane thickening and separating.
Heart - regular.
Colour and pulse good.
General condition - fair.
15.6.36 Throat clearing. Glands subsiding.
Heart rapid but regular.
Colour good.
16.6.36 Throat clean.
24.6.36 Throat clean. Colour and pulse satisfactory.
Heart - regular. Albuminuria.
1.7.36 Heart sounds - closed, regular. Tone fair.
Progress good.
6.7.36 No paresis. Colour and pulse satisfactory.
Heart - regular.
13.7.36 Improving.
20.7.36 Improvement maintained.
27.7.36 Palate active.
Heart - regular.
General condition - satisfactory.
5.8.36 Improvement maintained.
Treatment. 1 Pillow.
Treatment. Up.
14.8.36 Convalescence continued uninterrupted and patient discharged fit.
Name: Raymond Burns

Sex: M
Age: 7
Lab. No.: 562

Disease: Severe faucial Diphtheria.

Date of Admission: 1.6.36

Day of Disease on Admission: Second.

Type of Organism: Gravis.


Period for Throat to Clean: 5 Days.

Date of Discharge: 30.7.36

Date of Death: 

Bacteriological Examination:
1.6.36
Cultures +
Dick Test -
27.7.36
28.7.36
29.7.36

History of Present Illness:
Sudden onset.
Nasal discharge
Sleepiness
Sore throat 31.6.36
Adenitis 1.6.36

Treatment:
Syringe faucae with chlorine water 4 hourly.
A.D.S. 40,000 units I.M.
A.D.S. 50,000 units I.V.
Mist A.S.A. m.5 P.R.N.

Previous Medical History:
Scarlet Fever.
Chicken Pox.
Measles.

Condition on Admission:
Skin clear.
Heart - tachycardia.
Glands - enlarged with periadenitis.
General condition - toxic.
2.6.36 Membrane over both tonsils and uvula. Glands enlarged both sides of neck. Heart regular. Colour and pulse good.

7.6.36 Throat clean.

9.6.36 Colour and pulse satisfactory. Heart regular.


7.7.36 Circulation satisfactory. No paresis.


16.7.36 Palate still sluggish. Muscles right side of face atonic.

Treatment. Strychnine qr 1/2 B.I.D.


Treatment. 1 Pillow.

28.7.36 Improvement maintained.


29.7.36 Convalescence continued uninterrupted and patient discharged fit.
Name: Arthur Chappelle  
Sex: M  
Age: 6  
Lab. No.: 521

Disease: Severe faucial Diphtheria.

Date of Admission: 21.5.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis, Petechiae ad Rhinorrhea ad Triple Rhythm 15 Otorrhea 25 Palatal Paralysis

Period for throat to clean: 8 Days.

Date of Discharge: 1.9.36  
Date of Death: 

Bacteriological History of Present Illness.

Examination:

21.5.36
Cultures +
Dick Test +

28.8.36) +
29.8.36) -
30.8.36)

Treatment:

Syringe fauces with chlorine water 4 hourly
Poultices to neck.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Calcium Sandoz 10ccs I.V.

Condition on Admission:

22.5.36 Membrane separating with haemorrhage. Oedema of throat less. Glands still enlarged. Petechial still present.
Heart tone very poor. Rapid and irregular.
General condition - toxic.
Treatment. Paraldehyde $\frac{1}{3}$ P.R.M. A.S.A. m.5 4 hourly.

23.5.36 Throat still ulcerated and bleeding.
Heart irregular. Tone poor.

25.5.36 No change in general condition.

26.5.36 Throat not yet clean. Oedema of both orbital regions.

29.5.36 Throat clean.

31.5.36 Oedema of face improved. Heart triple rhythm.
Pulse imperceptible. Colour cyanosed.
General condition - poor.

2.6.36 Face improving. Heart still triple rhythm.

5.6.36 Heart more regular. Face improving.
Treatment. $\frac{1}{3}$ cc Camphor in oil 4 hourly.

9.6.36 Generally better.

16.6.36 Glands enlarged in neck. Heart irregular, tone poor, colour and pulse better.

Heart - grossly irregular.

20.6.36 Collected mucus in throat.
Treatment. Atropine gr.1/100 P.R.N.
Strychnine gr.1/200 T.D.S.

21.6.36 Palate still sluggish.
Treatment. Semi-solid diet.

23.6.36 Marked dysphagia.
Treatment. Nasal feeds.

5.7.36 Palate moving, phonation clear.
Heart regular. Sounds muffled.
General condition - slightly improved.
Treatment. Omit nasal feeds.

13.7.36 Palate movement brisk. Heart regular.
General condition - improving.

17.7.36 Heart - regular. Muscle tone improving.
Treatment. 1 Pillow.

23.7.36 Improvement maintained.
Treatment. Up on couch.
Omit strychnine.

29.7.36 Convalescence continued uninterrupted.
Culture virulent.

1.9.36 Discharged fit and well.
Name: Terence Collins  
Sex: M  
Age: 7  
Lab. No.: 479

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>6.5.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Third</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis</td>
</tr>
<tr>
<td>Complications.</td>
<td>Adenitis, Rhinorrhoea ad.</td>
</tr>
</tbody>
</table>

| Period for throat to clean. | 6 Days |
| Date of Discharge. | 26.6.36 |
| Date of Death. |

| Bacteriological Examination. | 6.5.36 |
| Cultures + | Dick Test + |
| 23.6.36 | 24.6.36 - |
| 25.6.36 |

| History of Present Illness. |
| Sudden onset. Last perfectly well 3.5.36 |
| Sore throat. 5.5.36 |
| Bleeding from nose |
| Headache. 6.5.36 |
| Glandular swelling |

| Treatment. |
| Syringe fauces with chlorine water 4 hourly |
| A.D.S. 40,000 units I.M. |
| A.D.S. 60,000 units I.V. |
| Mist A.S.A. m.7 P.R.N. |

| Previous Medical History. |
| Measles |
| Whooping Cough |

| Condition on Admission. |
| Tongue furred. Throat injected. |
| Foetor marked. Membranous exudate on both tonsils, extending to palate on right side. |
| Glands enlarged and tender both sides of neck. |
| Skin clear. Colour good. |
| Heart - regular. Sounds clear. |
| Lungs - breath sounds normal. |
| No Koplik's spots. |
| General condition - fair. |
6.5.36  Marked oedema of uvula. Tonsils covered with membrane, periadenitis ++ right side of neck.
Treatment: Adrenalin m.5 P.R.N.

7.5.36  Throat very oedematous. Membrane spread on to soft palate. Periadenitis right side of neck.
Skin clear. Colour and pulse satisfactory.
Heart - regular.
General condition - toxic.

12.5.36  Throat clean. Ulcerated.
Heart - regular. Tone fairly good.

19.5.36  Colour and pulse satisfactory.
General condition - better.

26.5.36  Improving.

Muscle tone improving. Colour and pulse good.

8.6.36  Circulation satisfactory. No paresis.
General condition - good.

12.6.36  Improving.
Treatment: 1 Pillow.

16.6.36  Palate active. Colour and pulse good.
Heart - regular.

17.6.36  Treatment: Sit up.

Convalescence continued uninterrupted and patient discharged.
<table>
<thead>
<tr>
<th>Name</th>
<th>Joseph Cawley</th>
<th>Sex</th>
<th>Age</th>
<th>Lab. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease</td>
<td>Severe faucial Diphtheria.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Admission</td>
<td>4.5.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day of disease on admission</td>
<td>Third.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of organism</td>
<td>Gravis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complications</td>
<td>Adenitis ad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period for throat to clean</td>
<td>4 Days.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Discharge</td>
<td>4.7.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Death</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological Examination</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5.36 Cultures + Dick Test -</td>
<td>Vomiting ) Sleepiness 2.5.36</td>
</tr>
<tr>
<td>1.7.36) 2.7.36) - 3.7.36)</td>
<td>Sore throat. ) Headache. 3.5.36</td>
</tr>
<tr>
<td>Shivering. )</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Previous Medical History.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringe the faucae with chlorine water. hourly</td>
<td>Measles 1935</td>
</tr>
<tr>
<td>A.D.S.40,000 units I.M.</td>
<td></td>
</tr>
<tr>
<td>Poultices to neck.</td>
<td></td>
</tr>
<tr>
<td>A.D.S.50,000 units I.V.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition on Admission.</th>
</tr>
</thead>
</table>
4.5.36 Extension of membrane on palate.
   Treatment. Mist. A.S.A. m.6 P.R.N.

5.5.36 Membrane thickened over both tonsils. No further spread. Glands still enlarged.
   Heart - regular.
   Treatment. Paraldehyde 3/4 P.R.

8.5.36 Throat clean. Colour good. Pulse rapid and regular.

16.5.36 Colour and pulse deteriorated. Muscles soft.
   Treatment. Camphor in oil 1/2 cc P.R.N.

21.5.36 Slight aural discharge.

22.5.36 General condition improved.
   Circulation seems better.

29.5.36 Colour and pulse satisfactory.
   Ear discharge less.

5.6.36 Heart regular. Tone improving.

12.6.36 Palate active. Heart satisfactory.
   Colour and pulse good.
   Treatment. 1 Pillow.

19.6.36 Improvement maintained.
   Treatment. Sitting up.

26.6.36 General condition good. Circulation satisfactory.
   Muscle tone improved.
   Treatment. Up.

4.7.36 Convalescence uninterrupted and patient discharged fit.
Name: Bernard McCabe
Sex: M
Age: 6
Lab. No.: 434.

Disease: Severe faucial Diphtheria.

Date of Admission: 8.4.36
Day of disease on admission: Fourth.
Type of organism: Gravis.


Period for throat to clean: 6 Days.
Date of Discharge: 15.6.36

Bacteriological Examination:
8.4.36
Cultures + Dick Test -
10.6.36)
11.6.36) -
12.6.36)

Treatment:
Syringe fauces with chlorine water 4 hourly
A.D.S.40,000 units I.M.
A.D.S.60,000 units I.V.
Mist.A.S.A.m.5 4 hourly.

History of Present Illness.
Sore throat 5.4.36
Vomiting 6.4.36
Sleepiness 6.4.36
Shivering 7.4.36
Glandular swelling 7.4.36

Previous Medical History.
Measles.

Condition on Admission.
Tongue furred. Throat extensive membrane over both tonsils and uvula. Thickening and separating with bleeding.
Glands - adenitis and periadenitis ++ both sides of neck.
Skin clear.
Heart - rapid. Sounds closed and regular.
Lungs - breath sounds normal.
No Koplik's spots and no discharges.
General condition - poor.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.4.36</td>
<td>Bruising marked to-day on arms. Petechiae present. Still marked Rhinorrhea. General condition - poor. Treatment. Mist A.S.A. m.5 P.R.N.</td>
</tr>
</tbody>
</table>
Name: Eric Brookes  
Sex: M  
Age: 6  
Lab. No.: 238

Disease: Very severe faucial Diphtheria.

Date of Admission: 10.1.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhea; Albuminuria 18; Oedema of eyelids 24; Palatal paralysis.

Period for throat to clean: 6 Days.

Date of Discharge:  
Date of Death: 4.2.36

Bacteriological History of Present Illness:

Examination: 10.1.36

Cultures +

Dick Test +

Immunized: December 1935.

History of Present Illness:

Headache 8.1.36
Sleepiness, )
Sore throat. } 9.1.36
Glandular swelling
Vomiting, 10.1.36

Previous Medical History:

Measles - Discharged from Monsall 3.1.36
Diphtheria Prophylactic given whilst in Hospital.

Treatment:

Syringe the fauces with chlorine water 4 hourly.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Poultices to neck.
Mist, A.S.A. mV 4 hourly.

Condition on Admission:

Tongue furred. Throat oedema of fauces with extensive membrane over both tonsils, to edge of soft palate. Glands enlarged both sides of neck, with a degree of periadenitis.
Heart sounds - regular and rapid.
Tone fair.
Lungs - breath sounds normal.
No discharges.
General condition - fair.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heart regular. Tone feeble.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Mist.A.S.A.m.5 4 hourly.</td>
</tr>
<tr>
<td>16.1.36</td>
<td>Throat clean.</td>
</tr>
<tr>
<td></td>
<td>Heart irregular. Colour and pulse fair.</td>
</tr>
<tr>
<td></td>
<td>General condition - poor.</td>
</tr>
<tr>
<td>18.1.36</td>
<td>Vomited to-day. Pulse unsatisfactory.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Omit food and salines.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Omit Mist. A.S.A.</td>
</tr>
<tr>
<td></td>
<td>Light Diet.</td>
</tr>
<tr>
<td></td>
<td>Cédema of face. Eyes puffy.</td>
</tr>
<tr>
<td>25.1.36</td>
<td>Cédema ++ of eyelids and face.</td>
</tr>
<tr>
<td></td>
<td>Slight intonation in speech.</td>
</tr>
<tr>
<td></td>
<td>Heart regular but tone poor.</td>
</tr>
<tr>
<td>30.1.36</td>
<td>Heart grossly irregular. Tone poor. Pulse poor volume.</td>
</tr>
<tr>
<td></td>
<td>Slight cyanotic tinge and peripheral circulation feeble.</td>
</tr>
<tr>
<td>1.2.36</td>
<td>Cédema of eyelids very marked.</td>
</tr>
<tr>
<td></td>
<td>Urine - albumen ++. Temperature unsettled.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Argyrol 10% to eyes. Foment eyelids 2 hourly.</td>
</tr>
<tr>
<td>2.2.36</td>
<td>Difficulty in swallowing.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Nasal feeds.</td>
</tr>
<tr>
<td></td>
<td>Atropine gr. 1/100. P.R.N.</td>
</tr>
<tr>
<td>3.2.36</td>
<td>Cédema + of face and right eyelid still inflamed. Eyelid seems fluctuant.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Eyelid incised. Pus obtained.</td>
</tr>
<tr>
<td></td>
<td>Adrenalin m.5 P.R.N.</td>
</tr>
<tr>
<td>4.2.36</td>
<td>Chest - crepitations ++ bilaterally.</td>
</tr>
<tr>
<td></td>
<td>No localised dullness.</td>
</tr>
<tr>
<td></td>
<td>Palate immobile.</td>
</tr>
<tr>
<td></td>
<td>Eyelid sloughing. Eye appears satisfactory.</td>
</tr>
<tr>
<td></td>
<td>Heart irregular. Tone poor.</td>
</tr>
<tr>
<td></td>
<td>General condition - extreme.</td>
</tr>
<tr>
<td></td>
<td>Cardiac weakness increased. This was associated with chest complications and a periorbital abscess.</td>
</tr>
<tr>
<td>5.p.m.</td>
<td>Died.</td>
</tr>
</tbody>
</table>
Name: Clarice Hall

Sex: F
Age: 7

Lab. No.: 171

Disease: Severe faucial Diphtheria.

Date of Admission: 28.12.35

Day of Disease on Admission: Fourth.

Type of Organism: Gravis.


Period for Throat to Clean: 6 Days.

Date of Discharge: 8.1.36

Date of Death: 7.45 p.m.

Bacteriological Examination:
28.12.35
Cultures +
Dick Test +

History of Present Illness:
Sore Throat: 25.12.35
Clndular Swelling: 27.12.35
Nasal Discharge: 27.12.35

Treatment:
A.D.S. 2,000 units pre.ad.
Syringe fauces with chlorine water 4 hourly.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Poultices to neck.
Mist, A.S.A. m.5 P.R.N.

Previous Medical History:
Measles - 1931.

Condition on Admission:
Throat - thick degenerate membrane covering both tonsils, nares and Nasopharynx.
Glands - enlarged both sides of neck.
Heart - rapid and regular.
Chest - breath sounds normal.
Skin - clear. No Koplik's spots.
No discharges.
Very toxic.
Colour and pulse satisfactory.


7.1.36 Vomiting again. Heart - galloping. Pulse imperceptible. Treatment. Salines only.


7.45 p.m. Died.
Name: Margaret Riley  
Sex: F  
Age: 6  
Lab. No.: 128

Disease: Severe faucial Diphtheria.  
Date of Admission: 4.12.35  
Day of disease on admission: Fourth.  
Type of organism: Gravis.  
Complications: Adenitis.  
Period for throat to clean: 5 Days.  
Date of Discharge: 7.2.36  
Date of Death:  

Bacteriological Examination.  
4.12.35  
Cultures +  
Dick Test +  
2.2.36)  
2.2.36) N & T =  
4.2.36)  

History of Present Illness.  
Gradual onset. Patient confined to bed since 1.12.35  
Vomiting  
Sleepiness  
Sore Throat  
Headache.  

Glandular swelling in neck 2.12.35  
Shivering 3.12.35  

Treatment.  
Syringe fauces with chlorine water.  
A.D.S. 40,000 units I.M.  
A.D.S. 60,000 units I.V.  
Poultices to neck.  
Mist A.S.A. m.5 P.R.N.  

Previous Medical History.  
Whooping Cough  
Broncho-Pneumonia  
Measles 1934.  

Condition on Admission.  
Tongue furred. Throat, slight injection of fauces. Extensive membrane, extending on to palate from right tonsil. Left tonsil completely covered.  
Glands - marked adenitis and periadenitis, both sides of neck.  
Skin - clear. Distinct pallor.  
Muscles limp.  
Heart - regular. 1st sounds short. Tone fair.  
Lungs - breath sounds clear.  
No Koplik's spots and no discharges.  
General condition - fair.


6.1.36 Progress maintained.


16.1.36 Treatment. 1 Pillow.

20.1.36 Progress maintained. Treatment. Sit Up.

7.2.36 Convalescence continued uninterrupted and patient discharged well.
Name: Constance Shorter

Sex: F  Age: 61

Lab. No.: 56

Disease: Severe faucial Diphtheria.

Date of Admission: 19.11.35

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Rhinorrhoea and Adenitis ad. Enteritis.

Period for throat to clean: 6 Days.

Date of Discharge: 20.1.36

Bacteriological Examination:
19.11.35
Cultures +
Dick. Test -

17.1.36)
18.1.36) -
19.1.36)

History of Present Illness:
Sore throat - 17.11.35
Difficulty in breathing.}
Glandular swelling. }
Nasal Discharge. } 18.11.35
Pain in right ear. )

Treatment:
Syringe faucæ 4 hourly with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Mist A.S.A. M.7 4 hourly.
Adrenalin m.5 P.R.N.

Previous Medical History.
Whooping Cough.

Condition on Admission.
Throat - extensive thick membrane on both tonsils and over uvula, with an active edge at the base, extending to 1/3 palate.
Glands - enlarged both sides of neck, especially on the right.
Skin - no rash, no staining or desquamation. Colour good.
Pulse volume fair, easily compressible.
Heart - not enlarged, regular.
1st mitral sound impure.
Lungs - breath sounds normal.
Nostril, right - purulent discharge.
No Koplik's spots.
General condition - fairly good.
Nutrition - satisfactory.
20.11.35 Throat - membrane over both tonsils and uvula. Oedema of fauces less. Periadenitis both sides of neck. Skin clear.
Heart - rapid and regular.
General condition - toxic.
Treat. Mist A.S.A. m.5 4 hourly.
Brandy 5 P.R.N.
Salines with paraldehyde 5 P.R.N.

Colour and pulse fairly good.
General condition - fair.

Circulation satisfactory.

Heart satisfactory.
General condition - good.
Treat. Mist A.S.A. m.5 P.R.N.


18.12.35 Improvement maintained.

22.12.35 Elevation of temperature. Tongue furred.
Vomited undigested food. Skin clear.
General condition - good. Blood and mucus in stool.
Treat. Barrier.

23.12.35 Stools still relaxed.
Treat. Ol Resin.

Generally better.

30.12.35 Throat clean. Palate active.
Heart - 1st sound soft and regular.
Improving.

2.1.36 Improving.
Treat. 1 Pillow.

5.1.36 Improvement maintained.
Treat. 2 Pillows.

General condition - good.
Treat. Sit up.

9.1.36 Improvement maintained.
Treat. Up.

20.1.36 Discharged home.
General condition - satisfactory.
Name: Eva Hunt
Sex: F  Age: 9  Lab. No.: 726

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>18.7.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Third</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis</td>
</tr>
<tr>
<td>Complications.</td>
<td>Adenitis ad Albuminuria ad Cardiac Irregularity 22</td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>4 Days</td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>17.10.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.10.36 14.10.36 15.10.36</td>
<td></td>
</tr>
<tr>
<td>Treatment.</td>
<td>Previous Medical History.</td>
</tr>
<tr>
<td>Syringe fauces with chlorine water.</td>
<td>Measles</td>
</tr>
<tr>
<td>A.D.S.40,000 units I.M.</td>
<td>Chicken Pox Infancy.</td>
</tr>
<tr>
<td>A.D.S.60,000 units I.V.</td>
<td>Whooping Cough</td>
</tr>
<tr>
<td>Poultices.</td>
<td></td>
</tr>
<tr>
<td>Mist A.S.A.m.5 F.N.</td>
<td></td>
</tr>
</tbody>
</table>

Condition on Admission.

19.7.36  Still extensive membrane over both tonsils, which are oedematous. Bilateral bullneck. Heart - rapid and regular. Tone fair. General condition - toxic.

22.7.36  Throat clean. Colour and pulse - good.

27.7.36  Glands subsided. Heart regular. General condition - improved.

3.8.36   Heart regular. Colour and pulse - good.

5.8.36   Pulse irregular at times.

10.8.36  Heart regular. Sounds of fair quality.


22.8.36  Improving.

25.8.36  Phonation very slightly nasal. Palate active. Treatment. Strychnine gr.1/200 B.I.D.


Treatment. 1 Pillow.

7.9.36   Phonation clear. Palate brisk.

11.9.36  Progress satisfactory.

Treatment. Get up. Omit strychnine.


17.10.36 Convalescence uninterrupted and patient discharged.

Discharge was delayed on account of persistent + cultures.
Name Renee Hickson

(177) Sex F Age 9 Lab. No. 424

Disease. Severe faucal Diphtheria.

Date of Admission. 5.4.36

Day of disease on admission. Fourth.

Type of organism. Gravis.


Period for throat to clean. 6 Days.

Date of Discharge. 3.7.36 Date of Death.

Bacteriological Examination.
5.4.36
Cultures + Dick Test +

1.7.36)
2.7.36)-
3.7.36)

History of Present Illness.

Sudden onset. Patient in bed since 2.4.36.

Sore throat and headache - 2.4.36 Glandular swelling)
Dyspnoea ) 5.4.36

Previous Medical History.

Measles - 1932.
Whooping Cough - 1932.

Treatment.

Syringe fauces with chlorine water 4 hourly
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Adrenalin m.5 P.R.N.

Condition on Admission.

Tongue furred. Throat - extensive membrane on tonsils, spreading from left tonsil to cover a large area of palate. Marked oedema of uvula and pharyngeal wall. Foetor +++ Glands adenitis and periadenitis left side of neck. Adenitis right side of neck.
Nose moist. No membrane visible.
Heart regular. Sounds clear.
Tone fair.
Lungs - breath sounds normal.
Skin - clear.
Colour - good.
General nutrition - good.

Radiant Heat.
Mist A.S.A. m.5 P.R.N.


11.4.36 | Throat clean.

14.4.36 | Left otorrhoea.

Heart sounds soft. Colour and pulse poor.

19.4.36 | Still very drowsy.

Heart very rapid. Tone poor. Triple Rhythm.

20.4.36 | Gallop rhythm continues. Pulse almost imperceptible.


4.5.36 | Palate sluggish.

Heart tone improved.

11.5.36 | Heart regular. Pulse satisfactory.

16.5.36 | General condition improved. Treatment: 1 Pillow.

24.5.36 | Improvement maintained.

27.5.36 | Peroneal paralysis both feet. Treatment: Back splint and foot piece to both legs.

1.6.36 | Still peroneal paresis present.

Heart satisfactory.

General condition improved during convalescence, and patient transferred to General Hospital for physiotherapy.
**Name:** Hilda Sneath  
(179)  
**Sex:** F  
**Age:** 9  
**Lab. No.:** 408

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>22.3.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Second.</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis.</td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>7 Days.</td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>18.6.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.3.36</td>
<td>Vomiting</td>
</tr>
<tr>
<td>Cultures +</td>
<td>Sleepiness</td>
</tr>
<tr>
<td>Dick Test -</td>
<td>Sore throat. 21.5.36</td>
</tr>
<tr>
<td>13.6.36</td>
<td>Headache</td>
</tr>
<tr>
<td>14.6.36</td>
<td></td>
</tr>
<tr>
<td>15.6.36</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment.</th>
<th>Previous Medical History.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringe fauces with chlorine water 4 hourly.</td>
<td>Measles</td>
</tr>
<tr>
<td>A.D.S. 40,000 units I.M.</td>
<td>Whooping Cough in infancy.</td>
</tr>
<tr>
<td>A.D.S. 60,000 units I.V.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition on Admission.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonsils oedematous, very enlarged.</td>
</tr>
<tr>
<td>covered with thin filamentous membrane. Nasopharynx slightly involved.</td>
</tr>
<tr>
<td>Glands enlarged and tender both sides of neck.</td>
</tr>
<tr>
<td>Heart sounds - regular. Sounds closed and clear.</td>
</tr>
<tr>
<td>Lungs - breath sounds normal.</td>
</tr>
<tr>
<td>No Koplik's spots. No discharges.</td>
</tr>
<tr>
<td>Skin clear.</td>
</tr>
<tr>
<td>General condition - toxic.</td>
</tr>
</tbody>
</table>

![Diagram of tonsils]
23.3.36 Membrane necrotic. Oedema of fauces marked.
Glands - still markedly enlarged. Skin clear.
Colour poor.
General condition - toxic.

Serum rash.

Treatment. Adrenalin m.5 P.R.N.

30.3.36 Throat clean.

Heart regular. Colour and pulse improved.

2.4.36 Pain in right hip - Arthritis.

6.4.36 Colour and pulse improved. Hip better.

13.4.36 Palate active. Heart regular.

Improving.

19.4.36 Patient collapsed. Pupils widely dilated.

Colour ashen. Heart - triple rhythm.


Treatment. Radiant Heat.

Cardiac Fomentations.

Adrenalin m.5 P.R.N.

Pituitrin % cc.

p.m.

Almost comatose, rational but relapses immediately afterwards.

20.4.36 Mucous collecting in throat. Heart irregular.

Tone poor, pulse feeble. Coarse nystagmus present to the left. Temperature elevated. Reflexes normal.

General condition - poor.

Treatment. Suction. Lumbar puncture.

5cc C.S.F. withdrawn, pressure normal.

No abnormal findings.


No neck rigidity.

General condition - still poor.

Treatment. Nasal feeds. Atropine gr.1/100 P.R.N.

25.4.36 Still semi-comatose. Heart regular and rapid.

Tone poor. Loss of power left arm. Sensation not impaired.

26.4.36 Still semi-conscious. Irritable moving all limbs except left arm.

Seems rational to-day - irritable, collecting mucus in pharynx. Colour and pulse satisfactory.

Moving left arm slightly to-day.

Choking attack, due to collection of mucus in pharynx.

Treatment. Suction. Elevate foot of bed.

150cc C.S.F. withdrawn, pressure normal.

2.5.36 Mucous less troublesome. Palate and pharangeal wall immobile.

Treatment. Strychnine gr.1/200 B.I.D.

4.5.36 Palate moving.

Treatment. Omit nasal feeds.

8.5.36 Colour and pulse good. Quite rational. No paresis.

11.5.36 Treatment. Sit up.

18.5.36 Very weak in legs. Circulation satisfactory.

No paresis.


18.6.36 Convalescence continued uninterrupted and patient discharged thoroughly fit and well.
Name: Marjorie Lord

<table>
<thead>
<tr>
<th>Sex</th>
<th>F</th>
<th>Age</th>
<th>Lab. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>359</td>
</tr>
</tbody>
</table>

Disease: Severe faucial Diphtheria.

Date of Admission: 1.3.36

Day of Disease on Admission: Third.

Type of Organism: Gravis.

Complications:
- Adenitis
- Rhinorrhea
- Nasal Phonation
- Vaginal Discharge
- Otorrhoea
- Albuminuria

Period for Throat to Clean: 6 Days.

Date of Discharge: 27.4.36

Bacteriological Examination:
- 1.3.36:
  - Cultures +
  - Dick Test +
- 24.4.36:
  - Serum +
  - Dick Test +
- 25.4.36:
  - Serum -
  - Dick Test -
- 26.4.36:
  - Serum -

Treatment:
- Syringe fauces with chlorine water: 4-hourly.
- A.D.S. 40,000 units I.M.
- A.D.S. 60,000 units I.V.
- Mist. A.S.A. mX 4 hourly.

History of Present Illness:
- Sudden onset.
- Sore throat: 1.3.36
- Vomiting: 27.2.36
- Headache: 27.2.36

Previous Medical History:
- Measles in infancy.

Condition on Admission:
- Tongue furred.
- Throat injected.
- Tonsils enlarged.
- Thick exudate over both, but recent membrane on 1/3 soft palate of left side.
- Marked foetor.
- Glands palpable in neck. Tender left side.
- Skin - herpetiform eruption left side of face. No discharges.
- No Koplik's spots.
- Heart - regular. Sounds clear.
- Lungs - breath sounds normal.
- General condition - fairly good.
2.3.36 Membrane still present over both tonsils. Slight oedema. Glands periadenitis present both sides of neck. Heart tone fair.

3.3.36 Membrane separating.

11.3.36 Throat clean. Heart regular. Tone fair.


23.3.36 Very slight vaginal discharge.


12.4.36 Improving.

Treatment. 1 Pillow.

16.4.36 Improvement maintained.

22.4.36 Muscle tone improving. Heart regular. Pulse and colour satisfactory.

26.4.36 Walking well.

27.4.36 Discharged - well.
Name: Frederick Bradshaw  
Sex: M  
Age: 9  
Lab. No.: 241

Disease: Severe faucial Diphtheria.

Date of Admission: 18.1.36

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Slight faucial paresis.

Period for throat to clean: 7 Days.

Date of Discharge: 23.3.36

Date of Death:

Bacteriological Examination:
18.1.36  
Cultures +  
Dick Test +  
25.3.36)  
26.3.36) -  
27.3.36)

History of Present Illness:
Sore throat.  
Shivering.  
Adenitis.  
Vomiting.  
Sleepiness 18.1.36

Previous Medical History:
Bronchitis. 7 years ago.

Condition on Admission:
<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.1.36</td>
<td>Throat cleaning.</td>
</tr>
<tr>
<td>30.1.36</td>
<td>Throat clean. Heart regular. Tone fair.</td>
</tr>
<tr>
<td>4.2.36</td>
<td>Colour and pulse fair. Heart regular.</td>
</tr>
<tr>
<td>14.2.36</td>
<td>Palate active. Heart more regular. Tone better.</td>
</tr>
<tr>
<td>3.3.36</td>
<td>Palate still sluggish. Heart satisfactory.</td>
</tr>
<tr>
<td>5.3.36</td>
<td>Right side of mouth drooping. Treatment. Strychnine qriboe B.I.D.</td>
</tr>
<tr>
<td>10.3.36</td>
<td>Palate quite brisk. Facial tone improving. Heart satisfactory.</td>
</tr>
<tr>
<td>12.3.36</td>
<td>Improving. Treatment. Pillow.</td>
</tr>
<tr>
<td>16.3.36</td>
<td>Improvement maintained. Treatment. Get up.</td>
</tr>
<tr>
<td>17.3.36</td>
<td>Palate face and heart satisfactory. Muscle tone improving. Treatment. Omit strychnine.</td>
</tr>
<tr>
<td>21.3.36</td>
<td>Improving.</td>
</tr>
<tr>
<td>28.3.36</td>
<td>Discharged quite well.</td>
</tr>
</tbody>
</table>
Name: Richard Bradbury

Disease: Severe faucial Diphtheria.

Date of Admission: 23.2.36
Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhea ad. Serum Rash II.

Period for throat to clean: 7 Days.

Date of Discharge: 18.4.36

Bacteriological Examination:
- Cultures +
- Dick Test +
- 14.4.36
- 15.4.36
- 16.4.36

Date of Death: 23.2.36

History of Present Illness:
- Sore throat - 21.2.36
- Vomiting - 22.2.36

Treatment:
- Syringe fauces with chlorine water 4 hourly.
- A.D.S. 40,000 units I.M.
- A.D.S. 60,000 units I.V.
- Poultices.
- Mist. A.S.A. m.10 P.R.N.

Condition on Admission:
- Tongue furred.
- Throat oedematous, injected fauces and soft palate.
- Tonsils large.
- Extensive membrane on both sides, with active spreading edge.
- Adenitis and periadenitis both sides of neck.
- Skin clear.
- Nose moist.
- Heart sounds regular, tone good.
- Lungs - no evidence of disease.
- Nutrition and general condition - fair.


2.3.36 Generalised serum rash. Colour and pulse good.

3.3.36 Throat clean. Heart regular. Colour and pulse good.

10.3.36 Palate active. Circulation good. Improving.

17.3.36 Palate active. Heart muscle tone only fair. Improving.

24.3.36 Speech clear. Palate active. Heart muscle tone only fair. Improving.

29.3.36 Palate active. Colour and pulse good. 1 Pillow.

7.4.36 Palate active. Colour and pulse good. Sit up.

18.4.36 Convalescence uninterrupted and the patient was discharged well.
Disease. Severe faucial Diphtheria.

Date of Admission. 23.1.36

Day of disease on admission. Fourth.

Type of organism. Gravis.


Period for throat to clean. 5 Days.

Date of Discharge. 17.3.36

Bacteriological Examination.
23.1.36
Cultures +
Dick Test -
14.3.36)
15.3.36 -
16.3.36)

Treatment.
Syringe fauces with chlorine water 4 hourly.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Hist. A.S.A. M.7 P.R.N.
Brandy ½ P.R.N.

History of Present Illness.
Gradual onset. Patient in bed since 21.1.36
Sore throat and headache 20.1.36

Shivering. 21.1.36
Vomiting. 21.1.36
Sleepiness. 21.1.36
Glandular swelling.

Nasal discharge 22.1.36

Previous Medical History.
Measles.
Whooping cough. In infancy.
Chicken pox.

Condition on Admission.
24.1.36 Throat membrane thickened and separating.
Glands subsiding.
Heart sounds regular. Colour and pulse good.
General condition - rather less toxic.
30.1.36 Throat clean.
Heart sounds regular.
Improving.
2.2.36 Otorrhea.
4.2.36 Colour and pulse satisfactory.
General condition - good.
18.2.36 Palate active. Colour and pulse satisfactory.
25.2.36 Palate active. No paresis.
Colour and pulse good.
Improving.
5.3.36 Treatment. 1 Pillow.
7.3.36 Improving.
Treatment. Sit up.
General progress maintained.
17.3.36 Patient discharged.
<table>
<thead>
<tr>
<th>Name</th>
<th>Harold Downs.</th>
<th>Sex</th>
<th>M</th>
<th>Age</th>
<th>10</th>
<th>Lab. No.</th>
<th>36</th>
</tr>
</thead>
</table>

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 12.11.35

**Day of disease on admission.** Third.

**Type of organism.** Gravis

**Complications.** Serum Rash 10 Adenitis Rhinorrhoea ad

**Period for throat to clean.** 5 Days.

**Date of Discharge.** 10.1.36

**Bacteriological Examination.**
- 12.11.35 Cultures + Dick Test -
  - 5.1.36)
  - 6.1.36) Cultures - 7.1.36)

**History of Present Illness.**
- Last perfectly well on 9.11.35.
- Was at School 8.11.35.
- Vomiting on 10.11.35.
- Went to bed on 11th.
- Sleepiness, sore throat, headache and nasal discharge.
- Glandular swelling 12.11.35.

**Treatment.**
- Syringe fauces 4 hourly, with chlorine water.
- A.D.S. 40,000 units I.M.
- A.D.S. 60,000 units I.V.
- Mist A.S.A. m P.R.N.

**Previous Medical History.**
- Pneumonia (Whooping Cough) 1925
- Measles 1926
- Bronchitis 1928

**Condition on Admission.**
- Tonsils oedematous, covered with greyish white membrane, edge of which is thin and extending on to soft palate. Right Tonsil haemorrhage.
- Tongue coated. Rhinorrhoea profuse.
- Glands enlarged both sides of neck, marked periadenitis.
- Heart - Sounds regular, quality fair.
- Pulse - Poor volume.
- Nutrition - Fair.
- Muscle tone - Good.
- General condition - Fairly toxic.
12.11.35  Throat - Membrane thickened, especially over right tonsil. Oedema still present.
Glands - Subsided somewhat. Colour and pulse good.
Muscle tone fair. Urine clear.
General condition - fairly good.
Paraldehyde 1/4 P.R. P.R.N.

13.11.35  Membranes still present on throat. Thickened - separating on right side.
Muscles soft.
General Condition - poor.

17.11.35  Throat clean. Colour and pulse improved.
18.11.35  Throat ulcerated. Glands subsided.
Skin clear - no petechiae. Urine clear.
General condition - fair.

19.11.35  Circulation seems improved.
General condition - much better.

27.11.35  Palate active. Heart regular.
Improvement maintained.

Heart regular, tone fair.
General condition - good.

10.12.35  No fresh developments. Improving.
15.12.35  Adenitis, right side of neck.
Treatment. Poultices. Omit Mist A.S.A.

17.12.35  Glands still enlarged in neck. No septic focus throat or mouth. Skin clear. Heart satisfactory.
No paresis.
General condition - good.

23.12.35  Improving.
26.12.35  Swelling in neck fluctuant.

27.12.35  Improving.
Treatment. 1 Pillow.

General Condition - satisfactory.

General condition - good. Glands healed.
Treatment. Sit up.

2.1.36  Throat - Palate active.
Heart - Sounds closed and regular. No paresis.
General condition - good.

10.1.36  Discharged home.
General condition - satisfactory.
Name: George Derbyshire  
Sex: M  
Age: 14  
Lab. No.: 216

<table>
<thead>
<tr>
<th>Disease.</th>
<th>Severe faucial Diphtheria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission.</td>
<td>11.1.36</td>
</tr>
<tr>
<td>Day of disease on admission.</td>
<td>Fourth</td>
</tr>
<tr>
<td>Type of organism.</td>
<td>Gravis</td>
</tr>
<tr>
<td>Complications.</td>
<td>Rhinorrhea, Adenitis ad Otorrhoea 13, Cardiac Irregularity</td>
</tr>
<tr>
<td>Period for throat to clean.</td>
<td>5 Days</td>
</tr>
<tr>
<td>Date of Discharge.</td>
<td>9.3.36</td>
</tr>
</tbody>
</table>

**Bacteriological Examination.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1.36</td>
<td>Culture + pre.ad. Dick Test +</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.2.36</td>
<td></td>
</tr>
<tr>
<td>23.2.36</td>
<td></td>
</tr>
<tr>
<td>24.2.36 &amp; 8.3.36</td>
<td></td>
</tr>
</tbody>
</table>

**Treatment.**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.D.S.10,000 units pre.ad.</td>
<td></td>
</tr>
<tr>
<td>A.D.S.30,000 units I.M.</td>
<td></td>
</tr>
<tr>
<td>A.D.S.60,000 units I.V.</td>
<td></td>
</tr>
<tr>
<td>Poultices to neck.</td>
<td></td>
</tr>
<tr>
<td>Adrenalin m P.R.N.</td>
<td></td>
</tr>
<tr>
<td>Radiant Heat.</td>
<td></td>
</tr>
<tr>
<td>Salines.</td>
<td></td>
</tr>
<tr>
<td>Syringe fauces with chlorine water.</td>
<td>4 hourly</td>
</tr>
</tbody>
</table>

**History of Present Illness.**


**Previous Medical History.**

Pneumonia in infancy. Quinsy 1935.

**Condition on Admission.**


13.1.36 Oedema of throat subsiding, membrane beginning to clear.

14.1.36 Membrane clearing, thick inspissated mucous in pharynx. Colour and pulse weak.

16.1.36 Throat clean. Oedema subsided.

17.1.36 Right otorrhoea.

21.1.36 Throat ulcerated.

30.1.36 Palate active.

1.2.36 Complaining of pain in right hip. Nil detected on physical examination.

4.2.36 Improving.

11.2.36 Palate active.

16.2.36 Improvement maintained.

21.2.36 Treatment. 1 Pillow.

27.2.36 Treatment. Sit up.

3.3.36 Progress satisfactory.

9.3.36 Discharged fit.
Name: Joan Bell

Sex: F  Age: 14  Lab. No.: 194

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 4.1.36

**Day of disease on admission.** Second.

**Type of organism.** Gravis.


**Period for throat to clean.** 6 Days.

**Date of Discharge.** 28.2.36  **Date of Death.**

**Bacteriological History of Present Illness.**

- **Examination.** 4.1.36
- **Culture** +
- **Dick Test** +
- **23.2.36** Throat
- **24.2.36** and
- **25.2.36** nose -

**History of Present Illness.**

- Vomiting
- Sore throat.
- Headache.
- Shivering.
- Sleepiness.
- Glandular swelling

**Treatment.**

- Syringe fauces with chlorine water 4 hourly.
- A.D.S. 24,000 units pre-ad. (3rd).
- A.D.S. 20,000 units I.M.
- A.D.S. 60,000 units IV. 4.1.36
- Mist A.S.A. m.10 P.R.N.

**Previous Medical History.**

- Patient suffering from chorea since 13.12.35.
- Rheumatism.
- Measles.
- Whooping Cough.

**Condition on Admission.**

- Throat injected. Tonsils and 2/3 soft palate covered with membrane.
- Tongue furred.
- Glands - marked cervical adenitis.
- Heart - very rapid.
- Apical systolic murmur, transmitted to axilla.
- Chest - breath sounds normal.
- Slight bilateral aural discharge.
- Choreiform movement present.
- General condition - good.
Paraldehyde 37 P.R. P.R.N.

Membrane thickened. Heart satisfactory.


Throat cleaning. Slight nasal intonation in speech. Conjunctivitis both eyes. Treatment. Bathe eyes with boric lotion and instil Argyrol 5%.


Improving. Semi-solid diet.

Throat and palate sluggish. Heart satisfactory. Pulse good.

Temperature swinging. Probably due to ear trouble. Treatment. Mist Soda Sal. 3/5 tds.


Treatment. 3 Pillows.

General condition - satisfactory. Cardiac lesion still present. Treatment. Sit up. Discharged home by ambulance under the care of family Doctor.
Name: Gladys Cohen

Sex: F Age: 14 Lab. No.: 65

Disease: Severe faucial Diphtheria.

Date of Admission: 21.11.35

Day of disease on admission: Third.

Type of organism: Gravis.

Complications: Rhinorrhea Bullneck Adenitis ad Serum Rash 11 Otorrhea 20

Period for throat to clean: 4 Days.

Date of Discharge: 17.1.36

Date of Death:

Bacteriological Examination.

<table>
<thead>
<tr>
<th>Date</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.11.35</td>
<td>+ Dick Test -</td>
</tr>
<tr>
<td>7.12.35</td>
<td>Cultures -</td>
</tr>
<tr>
<td>8.12.35</td>
<td>Cultures -</td>
</tr>
<tr>
<td>9.12.35</td>
<td></td>
</tr>
</tbody>
</table>

History of Present Illness.


History of Present Illness.


History of Present Illness.


History of Present Illness.


History of Present Illness.


Treatment.

Syringe fauces with chlorine water.
A.D.S.40,000 units I.M.
A.D.S.60,000 units I.V.
Poultices to neck.
Mist A.S.A. m P.R.N.

Previous Medical History.

Measles in infancy.

Condition on Admission.

A well nourished girl - mentally very alert.
Tongue furred. Marked foetor present.
Throat. Degree of oedema of right peritonsillar tissues. Membrane on both Tonsils. Recent membrane spreading on to palate.
Glands. Bullneck. Right side very tender. Enlarged on left side. Not quite so marked as the right.
Skin, good colour, no rash.
Pulse, good volume, but very easily compressible.
Heart not dilated, regular sounds of good quality.
Lungs - Breath sounds normal. Discharges seropurulent from both nostrils.
Muscles, good tone.
General Condition. Fairly good.
<table>
<thead>
<tr>
<th>Date</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.11.35</td>
<td>Throat - oedema marked.</td>
</tr>
<tr>
<td></td>
<td>Treatment. Salines.</td>
</tr>
<tr>
<td>22.11.35</td>
<td>Membrane over both tonsils. Extending on to soft palate right side.</td>
</tr>
<tr>
<td></td>
<td>Foetor marked.</td>
</tr>
</tbody>
</table>
|          | Glands. Marked periadenitis. Right side more than left. Skin no pe-
|          | techiae.                                                              |
|          | Heart sounds - closed and regular.                                    |
|          | Muscles limp. Urine clear.                                             |
| 23.11.35 | Throat still very oedematous.                                         |
|          | Membrane separating. Glands still enlarged.                            |
|          | Colour and pulse fairly good.                                         |
|          | General condition fair.                                               |
| 25.11.35 | Throat - Oedema less clean. Glands subsided.                          |
|          | Colour and pulse good.                                                |
|          | Urine clear. Generally better.                                        |
| 29.11.35 | Generalised serum rash.                                               |
|          | Treatment. Adrenalin m P.R.N.                                         |
| 2.12.35  | Throat clean. Palate active.                                          |
|          | Heart sounds closed. Tone good.                                       |
|          | Colour and pulse good.                                                |
| 8.12.35  | Right otorrhoea - Profuse purulent discharge.                         |
| 9.12.35  | Throat clean - palate active.                                         |
|          | Tonsils +                                                             |
|          | Colour and pulse satisfactory. Ear still discharging.                 |
|          | General condition good.                                               |
|          | Treatment. Swab ear dry 4 hourly.                                     |
|          | General condition improving.                                          |
| 1.1.36   | General condition improved.                                           |
|          | Treatment. 1 Pillow.                                                  |
|          | Treatment. Sit up. Syrup triplex 4 h.d.s.                             |
| 9.1.36   | Improving.                                                            |
|          | Treatment. Up on couch.                                               |
| 16.1.36  | Throat clean. Palate active. Heart sounds closed and regular. Walks   |
|          | well. General condition satisfactory. Ear dry.                        |
|          | Cultures -                                                           |
| 17.1.36  | Discharged to home                                                   |
APPENDIX 2.

Pages 197 - 205.

INTERMEDIATE SERIES GRAVIS ANTIBACTERIAL SERUM TREATED CASES.

Pages 206 - 217.

INTERMEDIATE SERIES DIPHTHERIA ANTITOXIN SERUM TREATED CASES.
Name: Ronald Cauldwell  
Sex: M  
Age: 3  
Lab. No.: 247

Disease: Very severe faucial Diphtheria.

Date of Admission: 25.1.36

Day of disease on admission: Third.

Type of organism: Intermediate.


Period for throat to clean: 5 Days.

Date of Discharge:  
Date of Death: 3.2.36

Bacteriological Examination:  
25.1.36
Cultures +  
Dick Test +

History of Present Illness:  
Last perfectly well on 21.1.36
Shivering  
Sore throat

Treatment:  
Syringe fauces with chlorine water.
Poultices.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.

Previous Medical History:  
Pneumonia, 1933.

Condition on Admission:  
Tonsils enlarged and covered with thick membrane, nasopharynx and 1/3 soft palate involved. Glands enlarged both sides of neck, with marked periadenitis.
Skin: clear.
Heart sounds: regular but very rapid
No Koplik's spots and no discharges.
Nutrition: good, but general condition only fair.

Treatment. Salines.
Camphor in oil \( \frac{1}{2} \) cc P.R.N. Adrenalin m. 5 cc

General condition - unsatisfactory.
Treatment. Radiant Heat.
Adrenalin 4 hourly.
Cardiac Fomentations P.R.N.

1.2.36 Heart rate still 40. No pulsation in veins of neck. General condition - poor.

3.2.36 Heart still extremely slow. Pulse imperceptible.
Condition extreme.

11.20 p.m. Died from complete heart block.
Name: Frederick Hand.  
Age: 7  
Sex: M  
Lab. No.: 118

Disease: Severe faucial Diphtheria.

Date of Admission: 1.12.35

Day of disease on admission: Third.

Type of organism: Intermediate.

Complications: Serum Rash 9 Albuminuria 5 Adenitis and Rhinorrhea ad.

Period for throat to clean: Dead before clean.

Date of Discharge: 10.12.35

Date of Death: 10.12.35 1.30 a.m.

Bacteriological Examination:
1.12.35

Cultures +
Dick Test +

History of Present Illness:
Last perfectly well on 28.11.35 at school.
Bed on 29.11.35. Vomiting, sore throat and shivering.
Glandular swelling and difficulty in breathing 1.12.35

Treatment:
Syringe fauces with chlorine water.
Poultices to neck.
A.D.S. 20,000 units I.M.
A.D.S. 80,000 units I.V.
A.D.S. 40,000 units I.V.

2.12.35

Previous Medical History:
Scarlet Fever. May 1931.
Whooping Cough.
Measles.
Pneumonia.
Chicken Pox.

Condition on Admission:
Tonsils - oedematous, covered with thin spreading membrane, extending on to soft palate. Membrane in nasopharynx and nose.
Glands - bilateral periadenitis bullneck.
Heart - sounds regular, fair quality
Pulse soft.
Lungs - No evidence of disease.
General condition - Nutrition good.
Profound toxaemia.
2.12.35  Throat - extensive membrane over palate, oedema ++
Glands - bullneck persists.
Colour and pulse - poor.
General condition - toxic.
Treatment. Salines.

Mist A.S.A.m 5 4 hourly.
Radiant Heat P.R.N.

3.12.35  Membrane - thickened and separating, marked
oedema and foetor.
Glands - not enlarged. Skin - clear.
Albuminuria.
General condition - poor.
Treatment. Paraldehyde 1 P.R.
Camphor in Oil 1 cc P.R.N.


Pulse - feeble.
Heart - Tone poor, grossly irregular.

Phonation - nasal. Feeling of nausea. No actual
p.m.
Pulse scarcely perceptible.

Name: Frank Harris

Sex: M  Age: 7  Lab. No: 110

Disease: Severe faucial Diphtheria.

Date of Admission: 29.11.35  9.40 p.m.

Day of disease on admission: Second.

Type of organism: Intermediate.

Complications: Bilateral periadenitis, Bullneck, Rhinorrhoea, Cardiac Failure.

Period for throat to clean: Dead before clean.

Date of Discharge: 29.11.35

Date of Death: 29.11.35 10.15 p.m.

Bacteriological Examination:

Examination: Vomiting.

Cultures: +

Vague sickness 28.11.35

Treatment:

Syringe fauces with chlorine water.
Cardiac Foment.
Oxygen.
Atropine gr 1/100
Camphor in Oil 1cc
Adrenalin m.5

Condition on Admission:

Tonsils covered with dirty offensive smelling membrane.
Glands - bilateral periadenitis, bullneck.
Nose - nasal discharge profuse.
Mouth and tongue dry, covered with sordes.
Heart - sounds very rapid, very poor quality.
Lungs - Crepitations present bilaterally.
General condition - Patient has mongoloid facies - cyanotic - moribund.

DIED.
Name: Ernest Wheldon  
Sex: M  
Age: 10  
Lab. No.: 117

Disease: Nasal & Faucial Diphtheria.

Date of Admission: 30.11.35

Day of disease on admission: Fifth.

Type of organism: Intermediate.

Complications: Nasal Discharge, Adenitis ad. Cardiac Irregularity

Period for throat to clean: 3 Days.

Date of Discharge: 27.1.36  
Date of Death: 

Bacteriological Examination:
- 30.11.35
- Cultures + Dick Test +
- 22.1.36
- 23.1.36
- 24.1.36

History of Present Illness:
- Headache
- Sore throat
- Vomiting 26.11.35
- Adenitis.
- Croupy cough 29.11.35
- Nasal discharge 25.11.35

Treatment:
- Syringe fauces with chlorine water.
- A.D.S.18,000 Units pre-ad.
- Poultices to neck.
- A.D.S.40,000 units I.M.
- A.D.S.30,000 units I.V.

Previous Medical History:
- Measles: In infancy.
- Chicken Pox: Immunised against Diphtheria 3 years ago.

Condition on Admission:
- Tongue furred. Throat injected.
- Tonsils enlarged, covered with recent exudate, extending on to uvula and palate. No Koplik's spots.
- Fecor very marked.
- Glands - palpable in both submaxillary regions.
- Nasal discharge present.
- Profuse purulent membrane in both nostrils.
- Heart - regular. Sounds of good quality.
- Lungs - breath sounds normal.
- General condition - fair.
<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.12.35</td>
<td>Nasal discharge still present. Heart more satisfactory. Colour and pulse good. Treatment: Kaylene Oil. 3 T.D.S.</td>
</tr>
<tr>
<td>8.12.35</td>
<td>Nasal discharge still present. Heart more satisfactory. Colour and pulse good. Treatment: Kaylene Oil. 3 T.D.S.</td>
</tr>
<tr>
<td>10.12.35</td>
<td>Improving.</td>
</tr>
<tr>
<td>17.12.35</td>
<td>Pupils dilated. Treatment: Omit Mist A.S.A.</td>
</tr>
<tr>
<td>6.1.36</td>
<td>Improving.</td>
</tr>
<tr>
<td>13.1.36</td>
<td>Improvement maintained. Treatment: 1 Pillow.</td>
</tr>
<tr>
<td>16.1.36</td>
<td>General condition - good. Treatment: Sit up.</td>
</tr>
<tr>
<td>27.1.36</td>
<td>Discharged. General condition - satisfactory.</td>
</tr>
</tbody>
</table>
**Name**  James Wood

**Sex**  M  **Age**  11  **Lab. No.**  100

**Disease.**  Severe faucial Diphtheria.

**Date of Admission.**  27.11.35  11.45 a.m.

**Day of disease on admission.**  Third.

**Type of organism.**  Intermediate.

**Complications.**  Cervical on ad.  Adenitis and Periadenitis.

**Period for throat to clean.**  Dead before clean.

**Date of Discharge.**  

<table>
<thead>
<tr>
<th>Bacteriological Examination.</th>
<th>History of Present Illness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.11.35</td>
<td></td>
</tr>
<tr>
<td>Pre. ad. Swab +</td>
<td></td>
</tr>
</tbody>
</table>

Reported to have been immunised at school, 1934.

**Treatment.**

- Syringe fauces with chlorine water.
- Poultices to neck.
- A.D.S.40,000 units I.M.
- A.D.S.60,000 units I.V.
- Mist A.S.A. m.6 P.R.N.

**Previous Medical History.**  Measles in infancy.

**Condition on Admission.**

- A well nourished boy.  Tongue furred.
- Throat - injected, extensive membrane on tonsils and palate.  Edge spreading.
- Much post nasal mucus discharge.
- Glands - enlarged on both sides of neck.  Marked periadenitis present.
- Skin - clear.
- Heart - regular, not enlarged.
- Sounds of moderately good quality.
- Lungs - breath sounds normal.
- Muscles - tone fair.
27.11.35 Colour very poor. Cyanosed.
Pulse - imperceptible.
Restless condition - very toxic.
Bowels open several times since admission.
Stools appear normal.
General condition - much worse.
**Treatment.** Radiant Heat.
     Brandy. 3½
     Oxygen.

8.15 p.m. Pulse imperceptible.
Died.
Name: Austin Neville Jones

Sex: M, Age: 6

Lab. No.: 271

Disease: Severe faucial Diphtheria.

Date of Admission: 5.2.36

Day of disease on admission: Third.

Type of organism: Intermediate.


Period for throat to clean: 6 Days.

Date of Discharge: 9.5.36

Date of Death: [Blank]

Bacteriological Examination:

5.2.36

Cultures + Dick Test -

4.5.36)
5.5.36)
6.5.36)

Treatment:

Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.B.S. 10 ccs I.M.
A.D.S. 40,000 units I.V.
A.B.S. 10 ccs I.M.
Salines
Mist A.S.A.m.5 P.R.N.

History of Present Illness:

In bed 2.2.36
Vomiting 3.2.36
Sleepiness 4.2.36
Sore throat 5.2.36
Glandular swelling 5.2.36

Previous Medical History:

Pneumonia in infancy.
T.B. Spine, discharged 1935
Chronic Bronchitis.

Condition on Admission:

Thick membrane over both tonsils extending on to soft palate on left side.
Glands enlarged, both sides of neck.
Heart - rapid & regular.
Chest deformed.
Patient wearing spinal brace.
Breath sounds normal
Skin clear.
No Koplik's spots.
Nasal discharge present.
General condition - fair.
7.2.36 Membrane separating. Colour and pulse good.
18.2.36 Colour and pulse fairly good. Improving.
25.2.36 General progress maintained.
3.3.36 Palate active. Heart more satisfactory.
10.3.36 General progress maintained.
17.3.36 Squinting. Right angle of mouth drooping. Treatment. Strychnine gr.1/100 B.I.D.
24.3.36 Palate active. Face still atonic.
3.4.36 Treatment. Sit up.
7.4.36 Treatment. Get up.
23.4.36 General progress and convalescence satisfactory. Culture from throat + virulent.
9.5.36 Cultures - and patient discharged.
Name: Kenneth Leigh

Sex: M  Age: 6  Lab. No. 313

Disease: Very severe faucial Diphtheria.

Date of Admission: 19.2.36

Day of disease on admission: Fifth.

Type of organism: Intermediate.

Complications: Rhinorrhoea, Adenitis, Albuminuria, petechiae.

Period for throat to clean: Dead before clean.

Date of Discharge: Date of Death: 24.2.36

Bacteriological History of Present Illness.

Examination: 19.2.36

Cultures +

Tick Test -

Treatment.

Syringe fauces with chlorine water 4 hourly.

Poultices to neck.

A.D.S. 40,000 units I.M.

Desensitise.

A.D.S. 60,000 units I.V.

Mist A.S.A. m+ P.R.N.

A.B.S. 1 cc I.V.

A.B.S. 10 cc I.M.

A.B.S. 9 cc I.P.

Previous Medical History.

Measles & Whooping Cough 1934

Bronchitis 1934.

Tonsillitis 1935.

Reported to have been immunised against Diphtheria Jan. 1936.

Condition on Admission.

Throat: Both tonsils covered with a filmy membrane extending on to soft palate on left side and buccal mucosa.

Glands - periadenitis both sides, more especially the left.

Nose excoriated. Profuse purulent discharge.

Skin: a few septic spots present.

Heart sounds - regular. Tone fair.

General condition - poor.

General condition poor after I.V. Serum and consequently I.P. Serum was considered advisable.
20.2.36 Membrane still present on throat. No further spread.
Heart very rapid. Tone poor.
Urine - albumin trace.
**Treatment.** Salines

P.M. Paraldehyde P.R. 3

Some epistaxis, developed extensive petechial rash.
**Treatment.** Adrenalin plugs if bleeding profuse.

21.2.36 Cyanosed. Pulse feeble.
Heart - irregular.
General condition feeble.
**Treatment.** Adrenalin plugs if bleeding profuse.

22.2.36 Cyanosed. Pulse feeble.
Heart - irregular.
General condition feeble.
**Treatment.** Oxygen and Radiant Heat.
Strychnine gr. 1/100 tds.

23.2.36 Throat cleaning with degree of haemorrhage.
Nasal discharge improving.
Colour cyanotic. Pulse imperceptible.
General condition deteriorated.

24.2.36 Died of
12.5 a.m. Cardiac Muscle Failure.
Name: Edward Dillon
Sex: M  Age: 7
Lab. No.: 260

Disease: Severe faucal Diphtheria.
Date of Admission: 3.2.36
Day of disease on admission: Third.
Type of organism: Intermediate.
Complications: Adenitis, Rhinorrhea ad, Serum Rash 15

Period for throat to clean: 7 Days.
Date of Discharge: 15.4.36
Date of Death:

Bacteriological Examination.
3.2.36
Cultures +
Dick Test -
6.4.36)
7.4.36) -
8.4.36)

History of Present Illness.
Sore throat.
Indefinite onset a few days ago.
Vomiting.) 2.2.36
Adenitis 3.2.36
Earache 3.2.36

Previous Medical History.
Measles.
Whooping Cough.
Recurrent attacks Bronchitis.

Condition on Admission.
Tongue congested. Throat inflamed.
Cedematous fauces. Adenitis and periadenitis very marked both sides of neck. Poetor ++
No Koplik's spots. No rash.
Heart regular. Tone fair.
Lungs - breath sounds normal.
General condition - fair.
Profuse nasal discharge.

Syringe fauces with chlorine water.
Poultices to neck.
A.D.S.40,000 units I.M.
A.D.S.40,000 units I.V.
Mist A.S.A.m.7P.R.N.
A.B.S. 25 cc.I.M.
4.2.36 Membrane present over both tonsils.
Glands still enlarged.
Heart - rapid & regular.

5.2.36 Throat still oedematous. Membrane present over left tonsil. Glands still enlarged.
Rhinorrhea less.
General condition - fairly toxic.

11.2.36 Throat cleared. Oedema subsided.
Heart sounds closed and regular.

15.2.36 Generalized serum rash.
18.2.36 Colour and pulse satisfactory.
Improving.

25.2.36 Colour and pulse satisfactory.
Appears better.

3.8.36 Palate active.
Heart regular. Tone fair. Colour and pulse good.

10.3.36 No paresis. Circulation satisfactory.

16.3.36 Treatment. 1 Pillow.
17.3.36 Improvement maintained.
Treatment. Sit up.

18.3.36 Treatment. Up

2.4.36 General condition - satisfactory.

12.4.36 Patient discharged well.
Name: Harry Bailey

Disease: Severe faucial Diphtheria.

Date of Admission: 19.12.35

Day of disease on admission: Fourth.

Type of organism: Intermediate.

Complications: Rhinorrhoea & Adenitis ad Cedema of Face. Petechiae 6

Period for throat to clean: Dead before clean.

Date of Discharge: 

Date of Death: 22.12.35

Bacteriological Examination.
19.12.35
Cultures +
Dick Test +

History of Present Illness.
Sudden onset. Patient in bed since 16.12.35
Vomiting, 16.12.35
Sore Throat, 17.12.35
Headache & cervical adenitis 18.12.35

Treatment.
Syringe fauces with chlorine water.
Poultries to neck.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Mist A.S.A.m.6 F.R.N.
Adrenal in m.5 stat.
Blocks.
Salines.
A.B.S. 25 cc I.M.

Previous Medical History.
Measles
Chicken Pox
Infancy.

Condition on Admission.
Tongue furred.
Throat - injected. Extensive exudate with a spreading edge on left tonsil. Membrane on right tonsil. No discharges.
No Koplik's spots. Skin clear.
No rash.
Small abrasion on right thigh and knee.
Glands - much enlarged and very tender. Marked periadenitis, especially on left side.
Heart - regular. Sounds of good quality.
Lungs - Breath sounds normal.
General condition - very toxic.

p.m. Very restless. Treatment. Nepenthe, m.5


22.12.35 5.25 a.m. Died.
Name: Mary Nolan  (214)
Sex: F  Age: 9
Lab. No.: 139

Disease: Severe faucial Diphtheria.

Date of Admission: 10.12.35

Day of disease on admission: Fourth.

Type of organism: Intermediate.

Complications: Rhinorrhea & Adenitis ad Petechiae

Period for throat to clean: Dead before clean.

Date of Discharge:       Date of Death: 17.12.35

Bacteriological Examination.

10 12.35
Cultures +
Dick Test -

History of Present Illness.

Sleepiness.

Sore throat     6.12.35
Glandular swelling

Last perfectly well and at school 6.12.35
Not confined to bed until 7.12.35

Treatment.

Syringe fauces with chlorine water.
Poultries to neck.
A.D.S.50,000 I M.
A.D.S.60,000 I.v.
Radiant heat 4 hourly
Adrenaline 30 P.R.N. p.m.
A.B.S. 1cc No.1 I.V. (6.30)
A.B.S. 9cc No.1 I.M.
A.B.S. 1cc No.1 I.V. (8.15)
A.B.S. 9cc No.1 I.V. (8.30)

Previous Medical History.

Tonsillitis.)
Measles     ) Infancy.

Condition on Admission.

Extensive thin spreading membrane on both tonsils, fauces and soft palate.

Tonsils both oedematous.

Profuse nasal discharge.

Glands - periadenitis bilaterally

Tongue - glazed. No Koplik's spots

Heart - Sounds regular - closed.

quality fair.

Lungs - No evidence of disease.

Skin - clear, excoriation of nose.

Colour - good.

Nutrition - fair.

General condition - toxic.
Treatment. Salines.

Throat - still very extensive membrane.
Glands - still enlarged - bull neck.
Skin - no petechiae.
Colour and pulse - fair.
Urine - clear.
Restful. Taking fluids.
General condition - remains toxic.

12.12.35
Throat - membrane separating over palate.
Glands - adenitis subsiding.
General condition - does not appear so toxic.

14.12.35
Throat - cleaning. Membranes separating with quite a degree of bleeding.

Treatment. Weak $H_2O_2$ irrigations to throat.
Glands - nearly subsided.
Skin - petechiae present.
Colour and pulse - fair.
General condition - poor.

16.12.35
Petechiae still marked.
Throat - cleaning.
Colour and pulse - poor.
General circulation - feeble.
General condition - extreme.

17.12.35
Died.
Name: John Richard Norton  
Sex: M  
Age: 12  
Lab. No.: 127

Disease: Severe faucial Diphtheria.

Date of Admission: 4.12.35

Day of disease on admission: Fourth.

Type of organism: Intermediate.

Complications: Rhinorrhea & Bullneck ad Petechiae. 6 Albuminuria 5

Period for throat to clean: Dead before clean.

Date of Discharge:  
Date of Death: 10.12.35

Bacteriological Examination:
4.12.35
Culture + N & T  
Dick Test +

History of Present Illness:
Gradual onset.
Sleepiness. )
Sore throat; ) 30.11.35
Headache.  )
Difficulty in breathing.
Profuse nasal discharge 3.12.35

Treatment:
Syringe fauces with chlorine water.  
Poultices to neck.  
A.D.S. 40,000 units I.M.  
A.D.S. 60,000 units I.V.  
Mist A.S.A. m.8 P.R.N.  
Brandy  \[\frac{3}{4}\] P.R.N.  
A.B.S. 1 cc No.1 I.V.(6.30)  
A.R.S. 9 cc I.M.  
A.B.S. 1 cc No.1 I.V.(8.30)  
A.B.S. 9 cc No.1 I.V.(8.45)  
Brandy £ P.R.N.  
A.B.S. 1 cc No.1 I.V.(6.30)  
A.B.S. 9 cc No.1 I.V.(8.30)

Previous Medical History:
Measles in infancy.  
Pneumonia, 1930.

Condition on Admission:
A well nourished child.
Throat - furred.
Throat - injected. Very extensive old membrane on tonsils. More recent membrane with active edge on palate.
Glands - marked adenitis and periadenitis on both sides of neck.
Nose - bilateral purulent discharge.
Extensive membrane on septum and both lateral walls.
Skin - clear.
Heart - sounds closed and regular.
Lungs - breath sounds normal.
Muscles - limp.
Colour - fair - pulse rapid.
General condition - toxic.
5.12.35
Throat - still oedematous. Extensive membrane still present.
Glands - bullneck still present.
Nose - both nostrils membrane present.
Pulse - only fair.
Heart - regular and rapid.
Albuminuria.
General condition - very poor.

Treatment. Salines - 4 hourly.
Mist A.S.A.M.5 alternately with emphor in oil loc 4 hourly.
Radiant heat - 20 mins 95° 4 hourly.
Irrigate eyes with boric acid 4% Instil. mV 10%
Argyrol.
Paradehyde 3ii P.R.

6.12.35
Petechial haemorrhage present.
No change in general condition.

7.12.35
Throat - membrane separating with haemorrhage.
Glands - still enlarged.
Skin - petechiae still present.
Rhinorrhoea +++
Albuminuria.
Heart - rapid and regular.
General condition - extremely poor.

8.12.35
Very restless. Toxie looking. throat cleaning.
Glands - still enlarged.
General condition - very poor.

10.12.35
Throat cleaning - very haemorrhagic.
Glands - still enlarged.
Heart - regular - rapid. Tone poor.
Urine - albumen.
Eyes - still puffy.
Browsy, restless at times.

10.30 p.m. Died. Cardiac Muscle Failure.
APPENDIX 3.

Pages 218 - 223.

COMPLICATED GRAVIS SERIES.
ANTI-BACTERIAL SERUM TREATED CASES.

Pages 224 - 229.

COMPLICATED GRAVIS SERIES.
DIPHTHERIA ANTITOXIN SERUM TREATED CASES.
Name: June Harvey

Disease: Severe faucial Diphtheria.

Date of Admission: 26.7.36

Day of disease on admission: Fourth.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhea ad Petechiae ad.

Period for throat to clean: Dead before clean.

Date of Discharge: Date of Death: 27.7.36

Bacteriological Examination.
26.7.36

Cultures +
Dick Test -

History of Present Illness.
Glandular swelling
22.7.38

Sore throat.
Vomiting. 25.7.38

Treatment.
Syringe fauces with
chlorine water.
A.D.S. 8,000 pre.ad.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Radiant Heat.
Salines.
Hist. A.S.A.m. 5 4 hourly.

Previous Medical History.
None known.

Condition on Admission.
Tongue furred. Throat, membrane over both tonsils and uvula.
Cedema and foetor very marked.
Glands - periadenitis, both sides of neck.
Skin - bruising.
Heart - rapid. Sounds poor.
Tone feeble.
Lungs - breath sounds normal.
No Koplik's spots.
Nasal discharge +
Muscles exceedingly limp.
General condition - very poor.
27.6.36

Still very extensive membrane on throat.
Glands - markedly enlarged.
Heart sounds very soft - tachycardia.
Nasal discharge profuse.
Still extensive bruising.
General condition very poor.
Patient's condition deteriorated and she died of Cardiac muscle failure.

1.10 a.m.
<table>
<thead>
<tr>
<th>Name</th>
<th>Flora Delves</th>
<th>Sex</th>
<th>F</th>
<th>Age</th>
<th>Lab. No.</th>
<th>725</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease</td>
<td>Severe faucal Diphtheria.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Admission</td>
<td>19.7.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day of disease on admission</td>
<td>Third.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of organism</td>
<td>Gravis.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complications</td>
<td>Adenitis ad Albuminuria. 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period for throat to clean</td>
<td>6 Dgy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Discharge</td>
<td>14.9.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bacteriological Examination.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.7.36</td>
<td>Cultures + Dick Test -</td>
</tr>
<tr>
<td>9.9.36</td>
<td>10.9.36</td>
</tr>
<tr>
<td>11.9.36</td>
<td></td>
</tr>
</tbody>
</table>

**Treatment.**

- Syringe faucæ with chlorine water.
- Poultices to neck.
- A.D.S.40,000 units I.M.
- A.D.S.40,000 units I.V.
- Mist A.S. A.m .5 P.R.N.

**History of Present Illness.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.7.36</td>
<td>Sore throat.</td>
</tr>
<tr>
<td>18.7.36</td>
<td>Headache.</td>
</tr>
<tr>
<td>19.7.36</td>
<td>Vomiting.</td>
</tr>
<tr>
<td>20.7.36</td>
<td>Adenitis.</td>
</tr>
</tbody>
</table>

**Previous Medical History.**

- Measles, 1935.

**Condition on Admission.**

- Tongue furled.
- Throat - slightly injected. Tonsils large, membranous exudate over both. Separating on left.
- Glands - enlarged on both sides of neck, particularly on left.
- Skin clear.
- Heart) Clear.
- Lungs) Clear.

- General condition - fair.
- No Koplik's spots. No discharges.
- No dyspnoea, recession, hoarseness.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.7.36</td>
<td>General condition better.</td>
</tr>
<tr>
<td>3.8.36</td>
<td>Heart - regular. Colour and pulse good.</td>
</tr>
<tr>
<td>17.8.36</td>
<td>General progress satisfactory. Palate active. No paresis.</td>
</tr>
<tr>
<td>31.8.36</td>
<td>Progress maintained.</td>
</tr>
<tr>
<td>14.9.36</td>
<td>Convalescence continued uninterrupted.</td>
</tr>
<tr>
<td>14.9.36</td>
<td>Patient discharged.</td>
</tr>
</tbody>
</table>
Name  Mary Betty Halliday  Sex  ?  Age  5  Lab. No.  566

Disease.  Severe faucial Diphtheria.

Date of Admission.  2.6.36

Day of disease on admission.  Third.

Type of organism.  Gravis.

Complications.  Otorrhoea, 22 Adenitis.

Period for throat to clean.  5 Days.

Date of Discharge.  1.8.36  Date of Death.

Bacteriological Examination.
2.6.36
Pre-ad. swab +
Cultures +
Dick Test +
26.7.36)
27.7.36 ) -
28.7.36)

Treatment.
Syringe fauces with chlorine water.
Poultices to neck.
A.D.S.30,000 units I.M.
Tepid Sponge.
Brandy.
A.D.S.60,000 units. I.V.
Mist A.S.A. m.5 P.R.N.

History of Present Illness.
Sore throat.)
Headache.  ) 31.5.36
Shivering.  )
Adenitis.  )
Sleepiness 1.6.36

Previous Medical History.
Measles 1933.
Chicken Plx 1934.
Mumps 1935
Under treatment for "Nerves" for 1 month.

Condition on Admission.
Tongue - clean.
Tonsils - enlarged, extensive membrane with active edge over right tonsil and anterior pillar. Small speck on left.
Glands - enlarged in neck, particularly on right side.
Heart) No evidence of disease.
Lungs) No Koplik's spots.
General condition - fairly good.
No discharges, no rash.


15.6.36 Colour and pulse fairly good. Heart regular.


1.7.36 Palate active. Speech clear. Heart regular.

6.7.36 Circulation seems satisfactory.

12.7.36 Colour and pulse good. Heart regular. Treatment: 1 Pillow.

20.7.36 Improvement maintained. Treatment: Sit Up.

1.8.36 Convalescence continued uninterrupted and patient discharged.
Name: Albert Blizzard
Sex: M  Age: 4  Lab. No: 416

Disease: Severe faucial Diphtheria.

Date of Admission: 31.3.36
Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Adenitis, Rhinorrhoea, ad Serum Rash, 10 Cleft palate, Triple Rhythm

Period for throat to clean: 6 Days.

Date of Discharge: Date of Death: 20.4.36

Bacteriological Examination:
31.3.36
Cultures +
Dick Test +

History of Present Illness:
Sore throat.
Shivering
Headache.
Adenitis.
Drowsiness.

Treatment:
Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.

Poultries to neck.
A.B.S. 10 ccs I.M.
Adrenalin m.5 P.R.N.

Previous Medical History:
1936. Epileptic fits.
Right hemiplegia.
Naevus on left temple.
Bilateral Internal Strabismus.

Condition on Admission:
Tongue furred. Throat - large, oedematous. Tonsils, with extensive membrane over both and anterior pillar. Congenital malformation of palate.
Heart - regular - sounds closed.
Tone fairly good.
Lungs - breath sounds normal.
General condition - poor.
Mentally defective.
31.3.36  Treatment. Salines.
1.4.36  Membrane thickened over both tonsils, beginning to separate. Glands subsiding.
Heart satisfactory.
General condition - only fair.
2.4.36  Treatment. Luminal Gr. ½ B.I.D.
3.4.36  Throat practically clean. Ulcerated tonsils.
Glands subsiding.
Colour and pulse poor.
General condition - fair.
7.4.36  Throat clean. Tonsils +
Glands not enlarged.
Heart - rapid. Colour and pulse poor.
General condition - only fair.
9.4.36  Generalised serum rash.
11.4.36  Vomiting to-day. Colour and pulse poor.
Heart - rapid.
14.4.36  Heart sounds very poor quality.
Marked tachycardia.
19.4.36  Heart - gallop rhythm. Apex beat diffuse.
Colour and pulse - very poor. No vomiting.
General condition - feeble.
Treatment. Mist. A.S.A.M. 5.4 hourly.
20.4.36  Collapsed suddenly and died of cardiac muscle failure.
Treatment. Adrenalin 5 stat.
Name: Thelma Kelly
Sex: F  Age: 4½  Lab. No.: 242

Disease: Severe faecal Diphtheria.

Date of Admission: 29.1.36
Day of disease on admission: Second.

Type of organism: Gravis.

Complications: Bullneck, Rhinorrhoea, Cardiac Muscle Failure.

Period for throat to clean: Dead before clean.

Date of Discharge:  
Date of Death: 30.1.36

Bacteriological Examination:
29.1.36
Cultures +
Dick Test -

History of Present Illness:
Patient in bed on 28.1.36
Vomiting and sore throat 28.1.36
Glandular swelling 29.1.36

Treatment:
Syringe fauces with chlorine water.
A.D.S. 40,000 units I.M.
A.D.S. 60,000 units I.V.
Poultries.
A.B.S. 10 ccs No.1 I.M.

Previous Medical History:
Measles, 1935

Condition on Admission:
Tonsils covered with thin film of membrane, extending on to soft palate, oedema of tissues.
Glands - Bullneck. Tongue coated.
Heart sounds - rapid, regular.
Very poor tone.
Lungs - breath sounds clear.
Skin - clear.
No Koplik's spots.
Profuse rhinorrhoea.
General condition - very toxic.
29.1.36  Treatment. Mist A.S.A.m. 5 4-hourly.
         Adrenalin m. 5 P.R.I.
         Radiant Heat 4-hourly.
         Salines.

30.1.36  Collapsed after vomiting.
6.15 a.m.  Colour ashen.
         Pulse exceedingly weak.
         Treatment. Camphor in oil los
                 Cardiac foment.
                 Oxygen.

6.35 a.m.  Died.
           Cardiac Muscle Failure.
Name: Winifred Hewton  
Sex: F  
Age: 9  
Lab. No: 318

Disease: Severe faucial Diphtheria.

Date of Admission: 19.2.36

Day of disease on admission: Second.

Type of organism: Gravis.


Period for throat to clean: 4 Days.

Date of Discharge:  
Date of Death: 24.2.36

<table>
<thead>
<tr>
<th>Bacteriological Examination</th>
<th>History of Present Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.2.36 Cultures + Dick Test -</td>
<td>Has been in bed for past 4 years. Sore throat 18.2.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Previous Medical History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringe fauces with chlorine water.</td>
<td>T.B. Spine for last 4 years.</td>
</tr>
<tr>
<td>A.D.S. 24,000 units pre.ad. IM</td>
<td>T.A.M. 1 cc on 10.2.36</td>
</tr>
<tr>
<td>A.D.S. 20,000 units I.M.</td>
<td>T.A.M. 1 cc on 17.2.36</td>
</tr>
<tr>
<td>A.D.S. 60,000 units I.V.</td>
<td></td>
</tr>
<tr>
<td>A.B.S. 10 cc No.1 I.M. (8.30)</td>
<td></td>
</tr>
<tr>
<td>A.B.S. 10ccs. No.1 I.M. (20.2.36)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition on Admission</th>
</tr>
</thead>
</table>
20.2.36 Extensive membrane over both tonsils, uvula and soft palate.
Glands not markedly enlarged.
Heart - rapid.
Comfortable in frame.
General condition - poor.

22.2.36 Throat clean, ulcerated.
Heart rapid. Tone poor.
General condition fair.

Treatment. Mist A.S.A.m.5 4 hourly.

p.m.
Haemorrhage P. R. About 4 ozs.
Fecal matter present. Pulse fair.
Nothing palpable on digital examination.

Treatment. Tint: Opii m.5 4 hourly.
20ccs Calc.Gluconate.
10% I.V.

23.2.36 No further bleeding P.R.
Colour extremely pale.

24.2.36 Heart rapid, regular. Malaena+
No more haemorrhage.
Seems very lethargic and lost interest in life.
Very ill.

25.2.36 Pulse feeble.
General condition - extreme.

10.40 p.m. Died. Due to combination of tuberculosis and Diphtheria.
APPENDIX 4.

Pages 230 - 235.

ATYPICAL GRAVIS SERIES

ANTI-BACTERIAL SERUM TREATED CASES.
<table>
<thead>
<tr>
<th>Name</th>
<th>Sylvia Waite.</th>
<th>Sex</th>
<th>F</th>
<th>Age</th>
<th></th>
<th>Lab. No.</th>
</tr>
</thead>
</table>

**Disease.** Severe faucial Diphtheria.

**Date of Admission.** 25.11.35

**Day of disease on admission.** Third.

**Type of organism.** Gravis Atypical.

**Complications.** Rhinorrhea. Severe adenitis ad Oedema face 5 Petechiae 6 Obstruction and tracheotomy 6 Albuminuria. Anuria.

**Date of Discharge.**

**Date of Death.** 28.11.35

**Bacteriological Examination.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.11.35</td>
<td>Cultures + Dick Test +</td>
</tr>
</tbody>
</table>

**Treatment.**

Syringe fauces with chlorine water.
Poultices to neck.
A.D.S. 40,000 u its I.M.
A.D.S. 80,000 units I.V.
Hist A.S.A.m.6 P.R.N.
Blocks. Salines.
Paradichlorophene. 3.
A.E.S. 15 ccs No.1 I.P. (6.0)
A.E.S. 10 ccs No.1 I.M.
A.E.S. 10 ccs No.1 I.M. (28.11.35)

**History of Present Illness.**

- Sudden onset.
- Vomiting 23.11.35
- Headache 22.11.35
- Sleepiness 22.11.35
- Sore throat
- Glandular swelling 24.11.35
- Nasal discharge

**Previous Medical History.**

- Measles 1934.
- Chicken Pox

**Condition on Admission.**

- Patient stuporose, tongue furred.
- Throat - membrane with active edge, covering both tonsils, uvula and adjacent § soft palate. Uvula and tonsils oedematous and enlarged. Thick purulent discharge from nose.
- Glands - markedly enlarged both sides of neck.
- Skin - clear.
- Heart - regular not enlarged.
- Sounds closed.
- Muscles - limp.
- Lungs - breath sounds normal.
- General condition - poor.
26.11.35 Throat - oedema still marked. Membrane not definitely separating.
Skin - clear.
Heart - rapid and regular.
Rhinorrhoea +
General condition - exceedingly toxic.
27.11.35 Throat - still membrane present. Drowsy.
Face marked.
Albumen present in urine.
28.11.35 Oedema of face very severe. Eyelids closed.
Pulse imperceptible.
Nose - obstructed and bleeding.
Heart - rapid, tone poor.
Urine - suppression.
Extensive petechial haemorrhage chest and buttock.
General condition - extreme.
Treatment. Urine and fluid chart.
Salines 4 hourly.
Radiant Heat.
Tracheotomy.
Patient obstructed.
6.45 p.m. Died.
Name: Kathleen Flanagan

Sex: F  Age: 7  Lab. No. 18

Disease: Severe faucal Diphtheria.

Date of Admission: 5.11.35

Day of disease on admission: Fifth.

Type of organism: Gravis Atypical.

Complications: Rhinorhoea, Adenitis ad Albuminuria 8, Heart Block 10

Period for throat to clean: 5 Days.

Date of Discharge:

Date of Death: 15.11.35

Bacteriological Examination.
5.11.35
Cultures on ad. T +
N +
Dick Test -

History of Present Illness.
Glandular swelling in neck since 31.10.35
Vomiting and sore throat 5.11.35

Treatment.
Syringe fauces with chlorine water.
A.D.S.40,000 units I.M.
Adrenaline P.R.N.
Dist A.S.A.m6
A.D.S.60,000 units I.V.
Rectal Salines.
Poultices to neck.
A.B.S.10 ccs I.M. (9.30 a.m) 6.11.35.
Gravis A.D.S.10 ccs Batch No.1 I.V. (6.30 p.m)
1 cc given IV before remainder of dose.

Previous Medical History.
Measles } Infancy.
Chicken Pox
Hare Lip operation - 1½ yrs old.
Bronchitis every winter.

Condition on Admission.
Patient - ill nourished and undersized.
Throat - extensive membrane, especially on left side of fauces. Membrane covering both tonsils and spreading on to palate. Edge on palate seems active.
Glands - marked bilateral bullneck.
Heart - regular, sounds of moderate quality.
Pulse - poor volume.
Lungs - Breath sounds normal.
Skin - few septic spots on face.
Muscles - very limp.
General condition - marked toxaemia.
6.11.35  Throat - very oedematous - membrane over both tonsils and uvula.
Glands - still enlarged both sides of neck.
Skin - clear.  Heart - marked tachycardia.
Nose - rhinorrhea ++.  Urine - clear.
Muscles - limp.
General condition - extremely toxic.
Treatment. P araldehyde 3/4 P.E. C.S.C.,

6.30 p.m. 1 hour after serum, collapse, pallor and cyanosis, shivering, dyspnoea, thready pulse.

7.11.35  Throat - oedema less, membrane well thickened.
Glands - subsided right side of neck, left side still enlarged.
Heart - rapid and regular.  Tone fair.
Nose - rhinorrhea less.
Toxaemia does not seem quite so marked to-day.

8.11.35  Throat - membrane separating.
Glands - adenitis disappearing.  Restful.
Pulse - 152.
Urine - albumen acetone present yesterday.
Vomited T this morning.

9.11.35  Passed a good night.  Tonsils still swollen.
Slight enlargement of liver.  Dullness.
Colour good.  Pulse 120 - regular.

10.11.35  Throat - clean.  Tonsils ulcerated.
Glands subsided.  Less albumen.

1.30 p.m.  Pulse reported irregular.
Heart block - 2 to 1 present.  Palate sluggish.

11.11.35  Throat clean.  Glands - nil.
Skin - clear.  No petechiae.
Heart - irregular.  Pulse at the wrist - 124.
Urine - loaded with albumen.  Palate active.
Restful and drinking well.  Colour reported poor at times.
General condition - limp.
Treatment.  Radiant head 20 minutes at 95°
Hist A.S.4 alternately with
Camphor in Oil 3/4 cc Q.H.

12.11.35  Pulse - irregular.
Pallor and albuminuria.

13.11.35  Heart irregular.  Albuminuria less.
Treatment. Continue Salines.

14.11.35  Heart Irregular.  Cyanosis present.
Muscles - extremely limp.
General condition - very poor.

15.11.35  Cardiac pain and vomiting.
Pulse scarcely perceptible.

1.30 a.m.  Died.
<table>
<thead>
<tr>
<th>Name</th>
<th>Marian Dorothy Broadbent</th>
<th>Sex</th>
<th>F</th>
<th>Age</th>
<th>10</th>
<th>Lab. No.</th>
<th>34</th>
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</thead>
</table>

**Disease.** Very severe faucal Diphtheria.

**Date of Admission.** 12.11.35

**Day of disease on admission.** Fourth.

**Type of organism.** Gravis Atypical.

**Complications.** Adenitis Bullae ad Rhinorrhoea ad Laryngeal obstruction. Tracheotomy. 4

**Period for throat to clean.** Dead before clean.

**Date of Discharge.** 13.11.35

**Date of Death.** 13.11.35

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**Bacteriological Examination.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Examination Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.11.35</td>
<td>Cultures + Dick, Test -</td>
</tr>
</tbody>
</table>

**History of Present Illness.**

Child last quite well and went to school on 8.11.35. Confined to bed with sore throat 9.11.35. Vomiting. 10.11.35. Sleepiness. Glandular swelling. 11.11.35. Headache. Nasal Discharge. 11.11.35. Previous Medical History. Measles in infancy.

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**Condition on Admission.**

Date

12.11.35 Membrane still present on palate and fauces, thickened.
Restless.

9.45 a.m.  Treatment. Salines.

9.45 a.m.  Treatment. Pareldehate 3/4 P.R.
  Radiant Heat.

8.30 p.m.  Very restless, cyanosed, breathing obstructed, pulseless.
Treatment. Tracheotomy.
  I.C. Adrenaline 1cc.
  Strychnine gr.1/60

13.11.35 Patient obstructed between the second I.V. and the last I.M. injection, passed from asphyxia livida to pallida before tracheotomy could be performed. Artificial respiration for 20 minutes after tracheotomy. Patient semi-conscious and died at 4.30 a.m. next morning.
ABBREVIATIONS.

A.B.S. - Anti-bacterial Serum.
A.D.S. - Diphtheria Antitoxin.
Bdy. - Brandy.
I.M. - Intramuscular Injection.
I.P. - Intraperitoneal Injection.
I.V. - Intravenous Injection.
Mist. A.S.A. - Atropine sulph. gr. 1/200
               Strychnine hydrochlor. gr. 1/100
               Sol. adrenalin hydrochlor. 1/1000 m.5
               Aqua dest. ad. m.10.
N. & T. - Nose and Throat.

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