Pneumonia.

Thesis.
by
John Macdonald
List of works consulted on the subject of the thesis.

2. Tweedie’s Library of Medicine.
3. Stokes on the chest.
5. Lænne’s Diseases of the Chest.
7. Bennett on Pneumonia.
8. Rokitanskiop Pathological Anatomy.
9. Sawers Practice of Medicine.
Pneumonia.

Pneumonia, derived from the Greek word ἀνεμών, signifying a lung or the lungs, which itself again is derived from ἀνέμωσις, the latter, was the term used by Hippocrates, the Father of Medicine, and by many other writers of the Hellenic times, to designate most of the athmic form of pulmonary ailments unaccompanied by acute suffering. As time passed on, however, it came to be employed in a more and more circumscribed sense, and consequently its meaning became more limited and definite. In the present day, what is understood by the designation Pneumonia...
is Inflammation of the Parenchyma
ous substance of the Lung or Lungs.
Such a dispute, however, has arisen
among different medical authors
even of the present day as to the
exact seat of the disease, or in
other words, as to the particular
structure or structures in the
Lungs, that are subject to the
inguine inflammation. Action
of Pneumonia. Some writers
strongly maintain that only the
interlobular aereal or connective
substance is brought under its
influence; others assert that
the air-veisels solely are in-
filtrated; whilst a third party
affirm that both the Parenchyma
and the air cells mutually
suffer from the pneumonic action.
Bennett, Copland, and Stokes
opine that not only are the
Parenchyma, the air-veisels in-
...costed, but also the minute bronchial tubes. In slight pneumonia, Allibone declares the minute bronchial tubes are not affected, for "he says in such cases, the divided extremities of the minute bronchi, at autopsies stand out in the midst of the inflamed part like so many white points."

The pneumonia may arise, though not necessarily so, in the vascular texture of the organ, or it may be communicated to it by the spread of the inflammatory mischief from the bronchial to the lobules, whence it may be imparted to the lung substance proper. The inflammation having germinated in this fashion may not be retained within the limits of the cellular tissue, the minute subdivisions of the air passages or the air sacs, but may reach the Pleura and...
There divided itself into the form of pleurisy. The pneumonia may exist as a primary disease, or as a secondary affection. It may be developed as a single or as a double pneumonia, that is to say it may involve either one of the lungs or both of them. The exudation in this inflammatory process may be circumscribed to a very limited number of air-articles; to the bronchi. Communicating with these air-articles in which instance the pneumonia is termed a follicular pneumonia. Should a whole lobe be involved by its attack, then it is denominated a lobar pneumonia. If a lobe, then it is designated a lobar pneumonia.

Of the portions of the lung most commonly affected by this lesion the inferior lobe is the most frequent in point of frequency, is the superior lobe. "In 264 cases,
the superior lobe was the seat of the disease in 101 instances, the lower in 133, the middle in 30, and the lower portion only in 30 examples (Griscotti). Dr. Walsh seems to think that pneumonia in the middle of the lung can scarcely exist here, but that it generally is a result of lung-cancer or of blood origin. Occasionally the inflammation of the anterior margin of one or of both lungs in dependence of each other is noticed. The right lung was the subject of the inflammatory process in 58 cases out of 95 that were under the care of Dr. Bennett, and the left lung in 37 instances which would seem to prove that the right lung was much more subject to this malady than the left. This same fact would also seem to be indicated from statistics afforded by other authors. Walsh states that of 430 cases, 75.2
more of the right lung, 4,26 of the left, and 262 of both lungs. In both cases of double pneumonia, which constitute a large proportion of the given number, it is worthy of remark that by far the most of them had their origin as single pneumonias, although subsequently they assumed the character of double pneumonias.

Dr. Forbes has clearly demonstrated from the observations of Andral, Chomel, and Lombard, that out of 1,131 cases, the right organ was inflamed in 562 instances whereas the left one was implicated in only 333 cases. Both the viscera were the seat of the affection in 236. Dr. Stokes affirms that double pneumonia is of more frequent occurrence than is ordinarily suspected, for although the existence of the inflammation may be so well marked in the one lung as to render its discovery quite
A simple mention in examination still its presence in the fellow viscus may be so thoroughly masked from lack of concomitant symptoms as to enable it to escape detection. Dr. Copland offers as his undoubted opinion that double pneumonia is most generally met with "in the previously diseased or cachectic, in the nervous or debilitated, in states of the air causing vital depression, or in the course of epidemic diseases, characterised by impaired tone and lowered vital resistance."

It is a pretty well ascertained fact that males are more apt to be the subject of pneumonic attacks than females, seeing they are considerably more exposed to the exciting causes of it in prosecuting vocations, such as, for example, the calling of sailors, soldiers, coachmen, grooms, day-labourers, firemen, etc., which bring them under the influence of every variation of mental
and climate which they must suffer, or lay them open to the assault of debilitating causes. It would appear from the returns made by the Registrar General, that the majority in favour of males is not so large as might be anticipated. When numbers are compared it is seen that the death of men from peripneumony bear the same ratio to those of women as 10 to 8. Of 125 cases treated by Dr. Bennett in the Royal Infirmary of Edinburgh, 85 were males and 20 females, showing a very great preponderance on the side of men.

No particular period of human life is exempted from a liability to inflammation of the respiratory organs, so far as has been discovered by research and from positive facts. Pneumonia is "inflammation of the true pulmonary tissue, which
in its acute sthenic form, uncomplicated by constitutional or symptomatic disease, runs a definite course, expressed by severe febrile symptoms, which come on suddenly, attaining in a few hours a great intensity, and which undergo a no less sudden abatement or improvement between the fifth and tenth day, in proportion to the severity of the disease, and while the local productive results of inflammation in the form of the lung lesions are yet intense, but which are eventually removed. Such is the admirable, distinct and comprehensive definition of pulmonitis given by Dr. Atkerson in the first volume of his work, entitled "The Science and Practice of Medicine," which I now thankfully avail myself of as well as my capacity to frame a better or even one so good.
Pneumonia may be developed either in the simple acute or fibrous form, or may assume the acute, chronic, or typhoid type. It may occur either by itself as an uncomplicated affection, or in which phase it is rarely met with, or have linked hand in hand with it Bronchitis in while instance the malady is styled broncho-pneumonia, or the inflammatory process may extend in its course the pleura as well as the parenchyma of the lungs, from which there will result the secondary lesion termed pleuro-pneumonia. There may also arise another and third variety of disorder in which both the bronchial tubes and the pleura may be involved.

My object in writing this thesis is to deal entirely with the Subject of Simple Acute or Fibrous Pneumonia, however imperfectly it may be handled.
singly, or treating very summarily, Asthenic Pneumonia, & its complicated varieties. The inflammatory process in this species of the distemper takes on the asthenic form, and the concomitant febrile symptoms assume the adynamie or typhoid character. It occasionally makes itself manifest in epidemics of continued fevers, smallpox, encephalitis, & scarlatina, and in various chronic diseases.

At such times, it too often appears to be the direct cause of death. In innumerable similar instances, the signs of the pulmonary affection are frequently sufficiently well masked. It principally selects as its victims the ill-sheltered, half-starved, and dissipated poor, who are compelled to dwell in unhealthy localities & to inhale too often vitiated atmospheres. It almost invariably pronounces on its subjects whilst suffering...
from impaired health to having a de-
prived and debilitated constitution.
It may lay hold of the Spleen as
a primary ailment, or be developed
as the Sequela of Spleenic Pulmonary,
or present itself as a secondary
affection in continued form. The
local evidences of its existence are
by no means at all marked, and not-
with standing the presence of pain,
cough and dyspnoea, the enfeebled
condition of the mind stands in
the way of much regard being paid
to these manifestations. The functions
are very much disarranged;
the pulse is extremely rapid, small,
and feeble; the integument is parch-
ed and somewhat elevated in
temperature, or belted with a
clammy perspiration; the tongue
is dry and invested with a dirty
brom fur; anorexia accompanied
by distressing thirst & characteristic
monosomus, the fluid and the dis- 
charged from the bronchi is of a 
ofisy hue and possesses a remarkably 
disagreeable odour, the quantity 
of urine passed is greatly decreased 
the quantity and it turbid.
The weight of a chronically inflamed 
lung is much increased; to the sense 
of touch it conveys the idea of compac-
tive solidity, and seems highly 
resistant, some with difficulty and 
more or less dry. The consolidated 
exudation essentially occupies the 
interior of the pulmonary besides 
occasionally stuffing up the bronchio 
also. So where does softening of 
the exuded matted take place. 
The external wall of the chest 
become considerably contracted, 
and their movements with each 
respiratory effort, in course of 
time, are closed, and partly partially 
arrested, particularly those of the
nits, and the dimensions of the thorax
decrease.

Hypostatic pneumonia is a fatal
variety of atelectic pneumonia. While
attacks the aged and infirm, it
is also liable to overtake such debilitated
ones as have long been compelled
to retain the supine position in
consequence of a fracture having
_disabled, or a paralytic stroke
preventing
them.

The diverse modes of termination
of chronic pleurisy unusually are four
in all, viz.: 1. Complete recovery or
perfect restoration to its natural function
of the viscera. This is by no means
so commonly affected in the chronic
as in the acute disease. If not:

Understanding the commencement
and speedy development of the
affection its termination is extremely
protracted, unless compared with
that of the latter: recovery may
eventually result, provided skillful and proper treatment be had recourse to. Arophy of the organ is a far more usual issue with or without evacuation, or else death itself may take place.

II. Mortal hepatisation may occur.

III. A sloshing or sauganeous ataxia occasionally gathers a generally cut off the patient. IV. Chronic solidification of parts of the lung is now a then brought about and it is as a general going transformed into a tubercular condition.

Primary Syphilitic Pneumonia - Symptoms.

The commencement of the inflammatory attack is commonly ushered in by what have received the appellation of premonitory symptoms such as depression in the chest, slight short cough, hurried or short respiration coupled with general lassitude. These last but four and twenty or thirty and forty hours, when they are closely
succeeded by new ones which are better marked and point out the beginning of the duration as fairly begun. The rigor, however, may elude observation as they may not have been sufficiently sharp, or they may never have manifested themselves at all; together with these also there may be sickness, anxiety, dyspnea, general discomfort, restlessness, anorexia. Even pressing on the heels of the foot in the creased and very characteristic elevation of the temperature of the skin, dyspnea, and trembling cough; inability to draw a deep and full inspiration, from the acetabulum and inflamed condition of the parts affected. Within the cavity of the thorax there is an incessant sensation of discomfort, rather than of pain, which hovered in some instances, especially those in which the pleura is involved.
Prescend is a very distressing degree, with a feeling of tightness. The patient will lie on the affected side rather than on the other, or if both lungs are the seat of disease he prefers lying upon his back. The cough, which previously was dry, shortly becomes moist, and with it a bloody expectoration makes its appearance. Kucious viscid common unquintent spue. Some physicians consider the blood-streaked discharge from the tracheal tubes as peculiarly pathognomonic of pneumonia. However, it is not by any means always present as a symptom, consequently it cannot be relied upon for the pneumonia may and does often exist inde-

Promently of its presence. The bloody spue may accompany bronchitis as an individual ailment and does so not unfrequently. Any practitioner therefore, overlooking this fact may
* Dr. Furner observed that the pulse
may rise to 140 or even 160 beats
per minute.
to lead to commit very serious mistakes in diagnosis. The pulse is full and quick, averaging from 100 to 120. The face, lips, and tongue are more or less cyanotic owing to imperfect circulation and imperfect oxygenation of the blood in the lungs; the tongue is covered with a white or yellow fur, and the nostrils are fully dilated. Should the patient lie on his side, these symptoms will by degrees abate; but if the case incline to a mortal issue, the rapidity of the pulse will be accelerated, the tongue become brown and yellockish, epigastric perspirations will lower the whole frame, the intellect will become clouded or confused, the sufferer eventually sinks, either comatose or at phthisical.

The course run by Pneumonia may be said to consist of a certain number of
of definite, well marked stages. Laennec
limited these to three in number, viz.,
I. The stage of sanguineous congestion
or engorgement. II. The stage of
red hepatisation. III. The stage of
yellow hepatisation or florid
infiltration.

With this arrangement and subdivision
of Laennec's, as far as it goes, Dr.
Stokes most thoroughly concurs, but
says he has repeatedly seen "a
condition of the lung which seems
really the first stage of Pneumonia.
In this, the pulmonary tissue is
drier than usual, not at all en-
gorged, as in Laennec's first stage,
and of a bright vermilion colour
from intense arterial injection." He
further adds that he has found
"this condition in the upper portion
of lumps in the middle and lower
parts of white Laennec's first
and second stages existed. There
found it in cases of Pneumonia where death occurred from other causes. In a child who died of an extensive burn I found nearly two thirds of the lung in this state; and I have seen two same condition in subjects who died of acute Phthisis with severe inflammatory symptoms.”

Stokes, thereafter, proceeds to enumerate the two different stages as the complete, innumerable and complete. “I. The lung dried, then natural with liqueur and arterial injection. No effusion of blood into the air cells. II. (Lanמee’s 1st) The cells engorged with blood. No change of structure. III. (Lanmee’s 2nd) Solidity and softening. (Lanmee’s second. Stage of Aubral). IV. Interstitial suppuration. V. Abscess.

By most members of the medical profession this allotment of the subject has generally been accepted.
Skoda and Kokitausky, however, found his doctrine as they formerly do in this matter, and therefore loudly declaim against Stokes' procedure in stopping at the 1st stage in Pneumonia. What Kokitausky says "is in no respect inflammatory" but "always dependent on Anemia which is often very highly developed."

First Stage. In this, the initiatory stage of the pneumonia course or that in which the intense injection of the pulmonary capillary saps the lung. Although traces of haeemic stagnation are visible, but minus the saignant effusion and during this period the pulmonary tissue is drier than it ordinarily is. The anemic capillary ramifications of the Pulmonary artery are those mainly implicated in this lesion, but it is also very likely that these
Second Stage. This is the period of the young salmon.

Smaller fish of the young salmon are kept in the stream. After leaving the stream, they are kept in the pond. They are fed with fish food. The young salmon are kept until they are ready to be caught. The young salmon are then sent to the market.
Others remain solid and unaltered. It is not absolutely requisite, however, that actual suppuration follow as a matter of course in all instances, for in some the exudation matter is merely reduced to a fluid condition to bring about its speedier absorption. Adhesions of the diaphragm to a limited degree is extremely rare. Hepatic complication is by no means uncommonly noticed in cases of pneumonitis. It is often observed in instances where inflammation of the right lung exists either in those in which the left one is attacked, in such sufferers jaundice invariably manifests itself. The chlorides are absent from the urine. During the first day or two, the presence of their usual quantity may readily be ascertained, but these are after they commenced to disappear and ultimately vanishes altogether.
Diagnosis. The diagnosis of Simple Sthenic Pneumonia is extremely easy and may be detailed in a very few words. Walsh gives it tersely and comprehensively, when he says, "The combination of expectoration in small or tubular sputum, small tubular breathing, rusty expectoration, burning heat of skin, and perverted pulse—respiration ratio is peculiar to itself."

Duration of the Disease. The length of time from acute inflammation of the lungs takes to run its course varies greatly and is materially influenced by many circumstances among which may be enumerated the time of life of its subject, as also the plan of treatment had course in for its subjugation. The patient...
vital powers may completely succumb to the severity of the attack within six and thirty, or eight and forty hours or even in a more limited space of time. Lannec has attempted to define the bounds of the different inflammatory stages. In the first stage (the stage of engorgement) he allot from 12 hours to three days; in the second — or that of comminification — from twenty-four to seventy-two hours; in the last one — or that of interstitial suppuration — from two to six days. Andral set down red hepatisation as lasting from fifteen to twenty days; whilst of grey hepatisation, he said that when it came on suddenly and was offensive, the person attacked by it might survive twenty-four or six and thirty hours. All these assertions are generally known, taking all its various shades into...
account, pneumonia terminates between the seventh and the twentieth day. Others assert that they have themselves seen the crisis reached in simple uncomplicated cases about the fourth or sixth day. The term of the disease was exhausted, as recorded by Dr. Bennett in 73 cases under his care in the Royal Infirmary of Edinburgh. Of simple uncomplicated pneumonias, reckoning the time from the occurrence of the crisis to the beginning of convalescence in from 5 days to 26 days— the average duration being 13 ½ days. Also in 26 cases of double, uncomplicated peripneumonia, estimating likewise from the occurrence of the crisis to the commencement of recovery the time occupied was from 8 to 15 days— the average assigned to each being 16 3/4 days.

Convalescence may date from
the termination of the period of engorgement or of carunculations or of purulent infiltration. It follows generally, as a consequence of the stage of detachment in which case the detached lung may permanently remain carunculated or the consolidation may disappear by degrees.

The cessation of the affection is not infrequently marked by a critical diminution, against interfering with while great precaution should be employed. The excretion may either be a swet or urine highly charged with brick-coloured sediment which deposits especially on the coating of the water, expectoration, diarrhoea, epistaxis, haimaturia or some other form of haemorrhage, or the menstrual discharge. Such is natural method of relieving the economy of the mind's products resulting from the Inflammation.
By facts called by tradition, the notions of Hippocrates and others
obtained have been partially verified as to the acceleration of symptoms
on particular specified. The seventh or eleventh, fourteenth or the twentieth
days have generally been regarded as the critical days.

Prognosis. Peripneumony should never be regarded as a grave ailment
and consequently the prognosis even in slight instances of it should
be handled with the utmost precaution, because cases while, at their
onset, here seemed fair, are apt at a subsequent season to assume
a mortal aspect, and even in a convalescent, whilst the veriest
shred of the malady lingers there is a chance of the recurrence of
the sufferings of the patient by his being a helpless, while many
place his existence in imminent
jeopardy. The stage of the inflammatory action, its localisation, the extent of damage affected, its complication with other disorders, whether organic or functional, and the condition of the general salubrity and vis e of its subject, should all more or less influence the prognosis. As the forward march of the disease may result in the utter destruction of the lung, so its prolonged presence vastly multiplies its risk; consequently should consolidation have supervened the prognosis will be all the more serious; and yet more grievous, should symptoms point out the existence of yellow hepatisation. Gangrene is indeed a weighty aggravation where it occurs, but still it is not sufficient in itself to render any case hopeless; for examples of recovery occur from
it, have been placed on record.

I should have had the greatest

of pleasure in entering upon

the treatment of Pneumonia. But

I have been able, but for the present,

must bid adieu to it at least

of time denies me opportunity.