RADIOGRAPHY AND RADIOThERAPy

BY

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Photographic Work

Submitted are photographs taken of cases admitted to hospital or receiving treatment as Outpatients. They have been mainly on Surgical work. These photographs have all been taken on Lumière X-Ray 10x12 rapid plates, or full plates, and developed with a Pyro-iodo developer.

Exposures are for the hand 10 sec., for arms 15 sec., chest 35 sec., abdomen 45 to 60 sec. and so on.

Description of plates -
1. Humeral fracture of both bones of leg showing bending of fibia.
2. Shows a very fine example of a spiral fracture of the fibia. Patient is now walking quite normally.
3. Case of Equation flat foot showing great flattening of the plantar arch.
5. Note: A recent case taken from without-in wards. Note the great backward displacement of foot.
6. Example of a foreign body in the hand. Recovered easily after being located.
7. Photograph of a patient's hand. He had been under treatment for some time outside hospital. First, septic condition not improving, he was sent to us. We placed a metal ring over the most superficial area and almost in the centre of the ring can be seen a small foreign body. A wound was also occurred from wound phalanx of the index finger.
8. Showing a dislocated terminal phalanx of the thumb.
10. Photograph of a badly bruised
11. Elbow joint from within outwardly to show detachment of lower end of humerus epiphysis.
12. Fracture fracture of bone of forearm.
13. Osteomyelitis of lower end of humerus. Taken for diagnostic purposes.
14. Separation of internal and external epiphysis of humerus.
15. Complete fracture of olecranon. The case was a Japanese birth.
17. Fracture of surgical neck of humerus. In good recovery - no impairment of joint.
18. Photograph of clubbed hip.
Case was one of suspected inspiration of foreign body.
19-20. Two other views of same case.
21. Fracture of surgical neck of humerus - too also good recovery.
22. Photo of hip joint.
Dent. operative ease. Section of hand of
16. Mr. Photograph was taken to
ascertain if the web of fingers
occupied the acetalunam.
23. Piece of metal in palmar of
hand. Tidal ring applied over
wrist for sake of localization.
24. Fracture abraded of hand.
25. Fracture of both bones of leg
due to indirect violence.
26. Photo. of a Rott's fracture four
weeks after the accident.
Splints were removed. 2nd of
the third week.
27. Fracture of styloid process of ulna.
Undiagnosed.
28. Compare with no. 5. Same
case after plating and tenotomy
performed. And laid flat up
in Hask. of Paris.
29. Fracture of left femur from
being run over by a toy
child aged 10.
30. Fracture of anatomical neck of
knees.
31. Complete fracture of the clavicle - result of being thrown out of a machine. Wired - with good result.

32. Foreign body in palmar of hand
   Easily removed.

Salts are used with the X-rays
the apparatus used is an 18-inch coil with spark gap. The current is direct from the wall at 250 volts, passing through a Rheostat Board, which controls the Voltage and Amperage.

For photographic purposes the coil receives as much as 10 to 15 amperes, but for ordinary treatment not more than 2 to 3 amperes are used. Sittings for Lupus, Syphils, Rodent ulcers, Juica etc. last from 10 to 15 minutes and
are at intervals of 2 to 3 days. No apparatus for applying pressure to the
skin has been used, and the only
adjunct is an ointment of salicylic
acid (\( \text{HNCO}_2 \text{H} \)) in dry ointment
salve. Ointment has been used in cases where the
reaction has been too severe. The Rays
have been kept to the part affected
by means of glass diaphragms of a
brittly - David Shield.

The tube used are Iago's
Photod - and Henry Anode. These
can, of course, being regulated from
time to time as required.

The mode of treatment adopted
has been to keep up enough
reaction and resilience of the part
without producing an inflammation.
In no cases have any untoward
results as, Dermatitis, superceded.
Only a small part is at first
irritated until the reaction of the
patient to the Rays is ascertained;
thereafter the whole surface is
then treated.
With regard to results—unqualified success has followed treatment of such cases as Peptic ulcer, Ulcer Jansuor, lupus, etc. The benefit has resulted in cases of advanced Carcinoma and Sarcoma.

Operation scars have been given sitting, namely those arising from extensive operations for malignant disease, e.g., carcinoma with resulting lymphatic deposits, lympho-sarcoma of tongue with widespread glandular infiltration, etc. The results herein cannot yet be properly saturated until further

hair elopage: the case.

usually, lympho-sarcoma of tongue with glands in both sides of neck, I may quote.

This patient was operated on by Watson Chayes and Bullen and 4 rays to seen were advised. He had 34 sittings of ten minutes 5 min. on each side of neck, the month
late - that is two months after the operation - gangular infection had returned.

Typical cases have given us varied results - applications have been given in such conditions as Spheno-sellar hypertrophy, Eosinophilic Gout and Hodgkin's Disease. Results are given below.

In the majority of cases, such as fractures, a simple examination is all that is required.

Every so-called sprain should be carefully screened, as mistakes are extremely liable to be made.

Many sprains, which prove unsatisfactory to ordinary treatment, have been sent to this Department. In some cases hearing a case to the effect, that the case is one of simple sprain, but it would practically relieve the patient's mind, if we would kindly try the

suit. Fortunately in many instances the recent examination
did not but out the original diagnosis. In the diagnosis and treatment of chest cases it is of great value, allowing one to study the movements of the diaphragm and the expansion of the lung. In our Hospital a large portion of the medical cases are pathological and we have had several cases of bronchietatic cavities to deal with. She tends to show that some examinations are of great confirmatory value in histological with regard to bronchietatic cases, an accurate diagnosis of the condition has been made from such examination alone, where the physical signs revealed practically nothing. Following on diagnosis, resection of the rib performed opposite the affected area. three days allowed to lapse for adhesion of the pleural surfaces. Exploration of the lung carried out cavity found and drained. Old subsequently
posing these cavities the found condition as revealed by careful examination, viz. vascular and lying deeply in the lung tissue. One can with these cases study them in their different phases—showing a dense shadow; then, after a severe fit of coughing with profuse expectoration, often a coughful, then examination showing a light-shadowed cavity.

With regard to foreign bodies swallowed, or supposed to have been swallowed, we can lay claim to having had a great variety of cases. In these cases our attention was mainly directed to the passage through the pharyngeal valve.

We cannot lay claim to any such brilliant results as have been published from examination of a bismuth loaded stomach. We have attempted in several cases (in all) of dilated stomach to test the functional activity. The
results were fair, clinically
laboratory we could ascertain all
the facts we wished. In four
cases of stricture of the bowel,
which we examined, we could
by means of the screw
localise the condition very
accurately. In an article dealing
with the
stomach it was stated that
"neoplasms of stomach tumors as
visualised by operation or post-
mortem examination and to be
recognised and situated with
accuracy." Although we have
examined some number of cases
of malignant stomachs, we cannot
hold this statement as a true one.
In all cases of haematoma and
inflammation of he bladder as routine
examination of the cases with the
screw, photograph, and cystoscope
should be made. We examined
animal cases for suspected renal
calculi in none of these cases.
the result positive and no site was found in that which contributed subsequent operation.

Examples of Cases treated in X Ray Dep.

Pyrosis -

In most cases a mixed infection of Staphylococci and Streptococci, in some forming a diffuse inflammatory condition, as Desyrytac. In another class of which we have made a special study, the disease presents a definite formula - the patch is hypoid in appearance, is usually raised above the surface and presenting a weeping or dry surface. There are deep seated elevations from small openings, on pressure. It may be on any part of the body and is modified by its position. It passes from the centre, and heals apparently as it passes, but in sexual cases after nearly healing has broken out
microscopically. Staphylococcus is always present, and, though tubercle bacilli have been carefully looked for, they have not been found. Other organisms, as Staphylococcus, have been found. In doubt this is a mixed infection; it may have originally been lupus, but is now a mixture of infection and inflammation caused by several organisms.

J. Smith and F.P.

Chronic Syphilis originating in a foul sore nine months previous to admission to hospital.

The original infection of tubercle seems to have been rapidly overlaid with a staphylococcal infection, causing disease of all the hairs of the face, including the eyebrows. When treated, started to whole hairy part of face was covered with drier yellow crusts and considerable inflammation and
duration of the skin was present.
Condition of neuragra was well
marked. The hairs had not started
to fall out.
Applications: 10 x 12 x 15 x 15 x 13 x 15
x 15 x 15 x 15 x 15 x 15. (At this stage
a violent reaction was set up. So
applications were not given for next
two days) x 15 x 15 x 15 x 15 = 225 mil.

= 3 hrs 45 minutes. Cardi.

bases belonging to the second
class:

c  2

The patient was shown to the Northern Branch of the
British Medical Association and
was unanimously diagnosed as
Lupus Vulgans. The condition was
of two years standing and was
situated on the back of the
left hand which it almost
covered gradually spreading and
healing. There was no ulceration.

On bacteriological examinations
of scrapings taken on several
occasions no tubercle bacilli were found. I consider this case to be one of the leptoid form of yersis, caused by an infection of Staphylococcus albus, which was present.

Treatment gave us a complete cure with very little scarring.
Applications: $5 \times 6 \times 8 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 120\text{ min.}$

or 2 hours 9 minutes - dreadful.

Onslow, act 38.

An almost exactly similar case in a woman of middle age:
their condition was limited to the back of the right wrist.

Scrapings examined by the Clinical Research Association were reported to be infected with Staphylococcus albus. In no examination were tubercle bacilli found. We got a perfect cure with no scarring.

$5 \times 8 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 93\text{ min., or 1 hr. 33 min.}$
6 months duration. The condition began with a scratch on dorsum of left little finger. It next spread to the hand, healing as it went. On admission it presented a red inflamed oval patch, 2" x 1½", with oozings discharging white caseous material.

On microscopic examination staphylococcus was present, on culture staphylococcus albus.

Applications: 8 x 10 x 15 x 15 x 15 (pus cleared away, edges raised and inflamed) x 15 x 15 x 15 x 15 x 15 = 168 minutes, or 2 hours 48 minutes.

Of the above type of cases we have treated in all nine cases, with perfect results. We have several cases also at present undergoing treatment, and are endeavouring to make a special investigation into this curious form of skin disease.
Lupus Vulgaris - Some cases gained

1. 

Lupoid patch on right cheek
size of half a crown, no ulceration.
Applications: 5×6×8×10×10×10
59 minutes - Band.

2. 

Lening Standart ad 28.
Lupoid patch on left cheek,
4/8×5/8, 2 years duration.
Applications: 5×8×10×10×10×10
53 minutes - Band.

3. 

Mary Batchelor ad 34.
Lupus of ear involving laber
and septum, and two thirds of
the external surface.
Applications: 5×8×10×10×10×10
x10×10×10 = 53 min of 1 hr. 23 min.

We have treated in all
nineteen cases of Lupus Vulgaris
with perfect success.

Lupus Erythematosus -
This case was a young
domestic servant ad 16. General
health good. Since age of two
she had suffered from a slowly
Spreading inflamed areas which gradually extended from the left \[\text{malat prominence} \] across the cheek and bridge of nose to the right cheek. The condition invaded the lower eyelid, and actually involved the inner canthus.

After several applications of the ointment, a very marked reaction was produced, with considerable reddening and swelling of the left side of the face.

This gradually disappeared, and the edges of the area took on a more healthy appearance. The cicatricial tissue softened and became more like ordinary skin, and the scales disappeared.

The present appearance is that of a thin cicatrix.

Applications: 5 x 8 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 = 133 minutes of 2 hours 13 minutes.

Tuberculosis of Skin

Jas. Upson - age 29.

This patient suffered
for several months from a very persistent sore on the sole of the right foot. The condition might be described as an exudative granular one, which occasionally healed at parts, only, however, to break down again. A small portion was excised and sent for examination to the Clinical Research Tissue, who reported as follows:

"This is an inflammatory lesion and shows no evidence of malignant growth. There is marked invasion of the cornial and subcutaneous tissue with leukocytes and occasional large giant cells. Some of the latter are arranged in giant cell systems and although we cannot find any tubercle bacilli, we think the lesion is tuberculous."

Applications: \(3 \times 8 \times 10 \times 10 \times 10 \times 10\) \(\times 10 \times 10 \times 10 \times 10 \times 10 = 113\) minutes or 1 hour 53 minutes. Said.
Malignant Disease

Wife of Mr. Donald - age 32.

0 Malignant disease of the left tonsil with enlarged glands on both sides of neck. Ulceration of tonsil. Great 21cration.

Applications: 10 (3 minutes inside mouth, 7 outside) 

10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 2 hours

No advantage occurred and patient eventually died.

Wife Bethune - age 54.

2 Sarcoma of superior maxilla on right side, which had occurred three months after operation.

Applications: 5 x 8 x 10 x 10 x 10 x 10 x 10 x 10 x 10 = 10^3 mm. or 1000 mm. No improvement took place and she eventually died.

Wife R. - age 49.

3 Lymphosarcoma of tongue and resulting glands. It was subjected to a very extensive operation and after convalescence was given twenty-four applications of
- the Rays, two minutes each, five minutes on each side.

Result - no recurrence of glandular injection.

Patient: a.

Patient: a.

Patient: a.

Patient: a.

Patient: a.

Applicatons: 5 x 8 x 10 x 10 = 53 minutes.
Condition returned after four months.

10 x 10 x 10 x 10 x 10 = 40 min. at 10 x 10

No recurrence.

2. J. R. Jones age 47.

Characteristic ulcer of the right cheek sign of a shilling piece.

Applicatons: 5 x 8 x 10 x 10 x 10 = 53 minutes. Band. No recurrence.

Sphenon: Mastoid: Lecovitzian.

We have treated two cases of this disease with applications of the Rays. In neither of these cases could we claim to have got any beneficial result.

Hodgkin's Disease.
Flandr. ulcerum fasc. in the right side of the neck, right axilla, and marked enlargement of the spleen, which reached to a point almost midway between the costal margin and umbilicus.

He was given twenty-four applications of nine minutes on alternate days, three minutes to each enlarged area.

At the conclusion of the treatment patient's spleen had receded so much as to be palpated with difficulty, no difference however to fluids in neck and axilla. I should mention that this treatment was complicated by use of arsenic.

Epsilotalnic Poise.

We have observed the effects of the rays on several cases of this disease. These cases varied greatly in intensity. We shall quote the most severe case—
Jasie MacDonald, age 22.

Patient had been under treatment for eighteen months for this condition, and had been an inmate of a large hospital for two months, with temporary benefit.

On admission the gland was enlarged, particularly on the right side, soft in consistence, and exhibiting swelling boil. She was exceedingly nervous, with very pronounced tremors, exophthalmos of both eyes very marked.

Pulse 140. No albumen or glycosuria.

Her had patient on various medicines without any great improvement. X Rays were suggested, and she had in all 44 applications, on alternate days, each lasting several minutes. Rays were applied to gland, which was protected by felt.

Patient at first was distinctly improved. The gland was smaller in size, nervous condition greatly
benefited and failed rate 10v. The
eyepathalogy, however, showed no
improvement, being almost as
pronounced as before. Patient also
improved generally, gaining half
a stone in weight.

Of the other six cases, five
were treated as outpatients.
We shall instance one outpatient
case.

April 4th, 1821.

She was in a state of
intense nervousness, being unable
to walk without stumbling. Her
speech was affected, patient
stating that she did not seem
to have control over her tongue.
Gland was not greatly enlarged,
pulse 130, and marked erythema of
right eye.

She was given in all 38 sittings,
the first 24 of ten minutes each,
the rest of five minutes.

Patient at conclusion declares
she felt more like her old self,
the nervousness had almost entirely disappeared, only noticeable in a certain explosive excitability of speech. The eye condition was somewhat improved. Pulse varied from 80 to 100.

Summing up the other cases we have found that -

The eanotic element is greatly diminished. Secondly, invariably the pulse rate has diminished in the majority of cases markedly.

In two cases of the several the thyoid diminished in size. The ophthalmia was not affected to any extent in any of the cases.

The average number of exposures works out at 41 of 4 minutes each.

J. E. Roberts.

Inverness - 25th April 1909.