DIAGRAMS

ILLUSTRATING

SIX SURGICAL CASES.

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June 1936.
CASE I.

MRS. MARY McGOVERN.

THYROID CARCINOMA.
Cervical **GLANDULAR INVOLVEMENT** by **THYROID CARCINOMA**. Normal Gland structure entirely replaced by fibrous tissue which is invaded by Thyroid tissue.

Vesicles, with slight colloid content, are seen.

The fibrotic changes, and diminished vascular supply are the results of Radiation.

X. L.P.
Secondary involvement of Lymph gland by Thyroid Carcinoma.

Little Colloid storage.

General fibrotic changes.
SLIDE XXXVIII.  878.

Showing intense secondary Glandular Involvement.

Dense masses of thyroid epithelial cells invading fibrous stroma.

Vesicle formation.

X L.P.
SLIDE XXXVIII. 878.

Showing Thyroid Vesicles, lined by several-celled layer of epithelium.

A row of cells is seen, a precursor of a vesicle. Cells show mitotic activity.

X H.P.
SLIDE XXXVIII. 878.

Shows another gland, on same slide. Gland tissue is seen, the majority of the small-cells being lymphocytes.

Towards the left of the field is the edge of the gland, surrounded by a fibrous zone, in which a nest of typical thyroid cells is seen. This was the only involvement of the gland noted in the section.

This is in accord with the common finding of periperal arrest of malignant cells in Lymph Gland involvement.

X H.P.
Glandular involvement. X Oil Immersion P.

Showing a vesicle wall, with a double layer of cells, with nuclei of varying shape.

The lumen contains debris and cells released from the lining wall.

The surrounding tissue is densely fibrotic.
Another field of the same tissue.

X Oil Immersion P.

Shows fatty-tissue spaces at the edge of the fibrous zone.

The whole tissue is being invaded by single Carcinoma-Cells, which are spreading between the fat lobules, and among the fibrous stroma.

There is as yet no thyroid structure established.
The extent of the **Neck Swelling**.

Position and size of palpable gland masses is indicated, in the general swelling.
The Incision.

Used for Cervical Gland dissection.
GLANDULAR INVOLVEMENT in Thyroid Carcinoma.

The affected gland groups lie in Relation to

1. Common facial Vein

2. Carotid Sheath.


Small Glands are seen lying on the Muscle.

The Gland macroscopically resembled thyroid tissue.

One large Gland, as indicated, contained pus, from which Tubercle Bacilli were isolated.
CASE II.

LESLIE SMITH.

PYLORIC STENOSIS.
PYLORIC STENOSIS.

Showing extent of pain, and (smaller area) of tenderness.
POSTERIOR GASTRO-ENTEROSTOMY.

Showing short circuiting of Duodenum.

Stomach content passes directly to the
Lumen of the Jejunum.

The ulcer site is indicated in the Pyloric Region.
GASTRO-ENTEROSTOMY.

Shows approximation of Stomach (L) and Jejunum (R).

Posterior Sutures in Position.
COMPLETED ANASTOMOSIS of Stomach to Jejunum (viewed from Right Side).

The Transverse Colon is seen to the Right, and the Stomach and Jejunum meet in an opening in the transverse Mesocolon.
CASE III.

MRS. MABEL JAMIESON.

ACUTE INTESTINAL OBSTRUCTION.
INCISION in Operation for Symptoms of "Cervical Rib".
LAPAROTOMY INCISION, for acute intestinal obstruction.

The previous mid-line incision for Caesarian Section is indicated.
The APPENDIX Vermiformis, Mucous surface.

Small faecolith occupies the Lumen proximally, though not causing obstruction.

There is a zone of congestion near the tip.
INTESTINAL OBSTRUCTION due to OMENTAL BAND.

A band of omental tissue is adherent to the scarred Anterior Surface of the Uterus, and has obstructed a loop of Ileum.

The distended and collapsed portions of the loop are seen (viewed from Right Side).
CASE IV.

WILLIAM ARCHIBALD.

UNDESCENDED TESTICLE and
OBLIQUE INGUINAL HERNIA.
RIGHT INDIRECT INGUINAL HERNIA.

Shows position and size of swelling, which is constant in size.

Swelling lies in the line of the Inguinal-Canal, but is larger than can be explained solely by the presence of an abnormally situated testicle. The swelling was increased by local venous dilatation.
RIGHT INGUINAL HERNIA.

The Incision.

Is directly over the swelling, and, medially, turns down towards the Scrotum.
The **essential pathology** in this case is indicated by the Undescended Testicle, by the patent Processus Vaginalis which extends beyond the testicle, and by the contained Omentum.
UNDESCENDED TESTICLE.

Position of Catgut Sutures holding the Testicle in the Scrotum.

Suture material passes through the substance of the lower pole of the testicle, through the Tunica, the scrotal wall, and superficial layer of the Thigh.
A. Usual findings in OBLIQUE INGUINAL HERNIA.

Performed sac and contents. Tunica Vaginalis intact.

B. NORMAL CONDITION.

Parietal Peritoneum shows no Sac formation.

C. The Condition present in this case.

There is a patent processus Vaginalis, with contained Omentum.
CASE V.

DAVID FRASER.

Neurofibromatosis.
Palmar and Forearm Swellings.

Diagram indicates position and size of the swellings. The whole palm is occupied by a large swelling. There are three, smaller, transverse swellings on the volar aspect of forearm.

Two are pigmented, and show abnormal hair growth.

More proximally, small nodules of varying size are seen.
Neurofibromatosis.

Diagram illustrates the number, the relative sizes and distribution of the nodules in the Facial Region.

The nodules are most numerous on the forehead, but not very conspicuous.

There is a solitary nodule, of more than average size on the scalp.
Skin Nodules, on the arms.

1. Average sized swelling with central discolouration.
2. Small, pale swelling.
3. Minute darkly pigmented nodules.
4. Larger, pale lobulated, soft swelling, partly pigmented - suggesting localised angioma - and partly covered with hair growth.
Nodules on the Back. (Actual Size).

1. Umbilicated, pale variety.

2. Small, dark, pedunculated type - the only one present.

3. Lobulated, rounded form.

4. Small redenned type.

5. Pigmented, domed type, most frequent on the back.
Leg Swellings. (Actual Size).

1. The largest swelling present, with the exception of hand and forearm tumours, in the region of the Right Knee. Swelling is rounded, soft, and not pigmented.

2. Flattened, pale type, on the Dorsum of the foot.
Soft Pigmented Swellings involving Nipples and Areolae, on both sides.
LEFT FOOT.

Showing result of toe amputations.
Flat type of skin nodules seen.
LEFT HAND.

Dark area represents extent of the original Palmar Swelling - according to patient's story.

The coloured area and the dark area together indicate size of the swelling, on admission.

Area of tenderness over the Middle Metacarpo-phalangeal joint is indicated.
THE INCISION FOR FOREARM TUMOUR EXCISION.
Incision for Removal of HAND TUMOUR.

The incision is continuous with that in the forearm.
DISSECTION OF FOREARM TUMOUR. (actual size).

The tumour lies below the superficial fatty layer.

Vessels course over its surface.

The tumour tissue is paler than the superficial fascia.

The three forearm elevations were due to a single tumour.

The skin has had an application of Blue Rettol.
DISSECTION of the PALMAR TUMOUR.

The tumour is being elevated from the deep structures of the palm. It is of a fibro-fatty appearance.

The application of a tourniquet to the upper arm has given a bloodless field for tumour dissection.
Section of Tissue from Forearm Tumour. shows cellular, but fibrous, element throughout, with a variety of cells and nuclear shapes in the different strata.

The wavy appearance of nuclei in one stratum suggests a thickened nerve strand, but this was not proved.

There are few blood vessels in the connective tissue.
Another field, in same slide, at the edge of the widespread fibrous formation. The large spaces represent fat spaces, though this tissue forms but a small part of the whole tissue.

Blood Vessels are surrounded by tissue which the histological report suggested as representing Keloid hyperplasia.
Small Pedunculated Nodule from Back.

The tissue structure has no resemblance to other nodules examined.

The section shows a typical small Papillomatous Tumour.
Section shows the cutaneous edge of the Nodule.

There is an irregular and thickened epithelial cell layer.

The fibrous stroma is in contrast to other nodules. It resembles usual fibrous tissue formation and has few nuclei.
Section shows the type of fibrous tissue cells present in the papillomatous tumour. There is considerable variation in size and shape of the cell nuclei, but the cells are typical of such a tissue.
Tissue from Forearm Nodule.

The field shows masses of cellular fibrous tissue infiltrating the subcutaneous layers and encapsulating existing structures, such as Blood Vessels, Nerves, and Sweat ducts.

The tissue, according to Histological report, could only be classified as Keloid hyperplasia.

Superficial Vessels are dilated.
Tissue from Tumour Mass in the Palm.

Field shows general fibrous nature of the tissue, showing masses of cellular fibrous tissue enveloping sweat ducts and Blood Vessels.

This tissue was again classified as Keloid.

Strands of normal subcutaneous tissue are seen passing between the areas of pale fibrous tissue.
The field shows similar tissue to that shown in previous diagram.

The fibrous tissue is present throughout, enveloping Vessels, Nerves, and also a Pacchionian Touch Corpuscle, the Nerves of which appear to be replaced by Collagen fibrils.

The cellularity of the "Keloid" tissue in marked.
Section of Typical Nodule from the Back.

The Nodule is composed of fibroblastic tissue, similar to that of the forearm nodule and masses. No pigment is seen in the section, though small masses of naevus cells lie beneath the overlying epithelium.

The general structure is highly cellular, and strands of dense fibrous tissue are cut obliquely.

The tissue was said to bear no recognisable relationship to any definite structure.
CASE VI.

ANDREW MILLAR.

RECTAL CARCINOMA.
Facial Appearances.

Emaciation.

Arcus senilis.
BILATERAL INGUINAL HERNIAE.

That on the Left Side is of 15 months duration.

That on the Right is the larger of the two, but is of 8 months duration.

Each is an enterocele and reducible.

There is some abdominal striation present, due to excessive loss of flesh.
The Incision for Left Inguinal Colostomy.

The incision is muscle-splitting, corresponding to the Grid-iron Appendicectomy incision as employed on the R. side.

It is 3 ins. in length.
Inguinal Colostomy.

Incision of Skin, and superficial and deep Fascial Layers.

The incision is of uniform depth.

The fibres of the External Oblique muscle are exposed, running parallel to the incision.

The skin surface has had an application of Blue Dettol.
Inguinal Colostomy.

External Oblique Muscle split in its long axis.

Fibres of the Internal Oblique Muscle exposed, running at Right Angles to the Skin incision.
**Inguinal Colostomy. (x2).**

Division of Transversalis fascia, Transversus Abdominis Muscle, and incision of extraperitoneal fatty layer, and parietal peritoneum.

Peritoneal Cavity opened:

Small Intestine Coils presenting in the wound.
Inguinal Colostomy. (Actual size).

Colon drawn to surface (viewed from Right side),
Insertion of Maydl's Glass Rod through the peritoneal attachment of the Colon.

The wound edges are not approximated at this stage.
Inguinal Colostomy.

Position of Catgut sutures holding the Colon loop in position.

Also showing section of the part, with the sutures and the Maydl's Rod maintaining the loop on the surface.
Inguinal Colostomy.

Position of the sutures for approximation of the wound edges.

The peritoneal and muscle edges are approximated through the opening in the Meso-Colon.

The skin edges remain apart.

This procedure is of value in a permanent Colostomy, increasing the surface for adhesion to bowel to occur, and tending to widen the colon loop.
Inguinal Colostomy.

Completion of First Stage.

Maydl's Rod re-introduced.
Inguinal Colostomy.

Second Stage. Division of the Colon.

In the distal segment (to the Right of Diagram) the clamped area shows many bleeding points.

The Lumen of the distal segment has been dilated mechanically.

The two segments are separated by a gauze swab.

The peritoneal Cavity is walled-off by adhesion of the Colon segments to parietal structures.
Enterostomy or Colostomy Tube, devised by Paul, of Liverpool. (Actual size).

The end with the double rim is inserted into the bowel, and is held in position by a purse-string suture.

A thin flexible rubber drainage tube fits over the other end of the glass tube.
Inguinal Colostomy.

The Paul's Tube is in position, maintained by an encircling silk suture.

The tube arm is in line with the axis of the gut lumen.

The part is surrounded by gauze swabs.
Inguinal Colostomy.

Trimming of Colostomy. Crushing-Clamps in position.

Redundant tissue, above the line of application of the clamp, was removed from both segments.

Viewed from Right Side.
Result of the Colostomy Operations.

The end result of the operations differs somewhat from that of the Colostomy designed for temporary use, and subsequent closure.

A separation between the two limbs of bowel has been obtained, a tissue spur intervening. Faecal material now tends to discharge on the surface, without entering the distal bowel segment, which is closed off.
Colostomy Belt in Position.

The belt is tightened by adjustable straps, and holds the rubber cap in position over the Colostomy opening.

A cotton wool pad is maintained in position below the colostomy opening.
The Neoplastic Growth.

In Relation to neighbouring structures.
Conditions considered in **Differential Diagnosis** of **Rectal Carcinoma**.
BENIGN.

POLYPS. (ADENOMA).

PAPILLOMA. (VILLOUS).

FIBROMA

LIPOMA

ANGIOMA

MYOMA

MALIGNANT.

CARCINOMA.

- COLUMNAR CELLED
- SQUAMOUS CELLED

SARCOMA.

- ROUND CELLED
- SPINDLE CELLED
- LYMPHOSARCOMA

MELANOMA - OF ANAL ORIGIN.
Glandular Group Involvement in Rectal Carcinoma.

Glands are:

1. Pelvic Mesocolon Glands.
2. Glands between the Levatores and the Pelvic Fascia.