No. 237

AN

INAUGURAL DISSERTATION

ON

Hernia.

SUBMITTED TO THE

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BY

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— Hernia. —

There is no disorder to which the human system is subject, that demands more care on the part of the Surgeon, than the one which forms the Subject of this Thesis —

The frequency of its occurrence — the variety of forms under which it appears — the disorders with which it may be confounded — the minute Anatomical knowledge necessary to understand their Situation, Contents and the signs of necessity for an operation, & the Skill needed to perform herniotomy, will justify my Estimate of the importance of this Subject.

The nature of this affection & the best Methods of relief or cure, have occupied the attention of some of the best Minds, and given occasion for the

display of the skill of some of the first Surgeons in the world.

The works of Sir Astley Cooper, Bransby Cooper, Samuel Cooper, Colles, Lawrence, Malgaigne; the various authors quoted by them, and the plates of Maclise; together with the teaching of the Professors of the University of Maybulle, and limited examination of the disease in the dead subject, are the sources from which all my information on this subject is derived: as I never yet saw a case of Hernia; nor an attempt at reduction; nor the operation for strangulated Hernia.

The term Hernia is derived according to some from the Greek, ἔρνος a branch, as others think from the Latin hæreo, or the old adjective hernius, hard or rugged—

The protrusion of any viscus, from its natural cavity, except when the change in situation is the result of a penetrating wound, or through one of the natural openings, is named a Hernia.

Systematic writers have made the following classification.

Genus- Hernia.

Sub. genera, Cranial Thoracic, Abdominal.

Species- of Cranial — — none —

" of Thoracic, Congenital, Traumatic
Consecutive. Spontaneous.

" of Abdominal. Inguinal, Femoral
Umbilical Ventral
Obturator, Ischiatic
Perineal Pudendal
Vaginal Diaphragmatic.

Varieties of Inguinal. Oblique Inguinal Hernia.
Hernia of the Tunica Vaginalis.
Direct Inguinal Hernia.

Of all these varieties of Hernia, that which most frequently occurs, and demands Surgical attention is Abdominal, or protrusion of the viscera of the abdomen.

As protrusion may take place at any part of the parietes of the Abdomen, except where that is formed of bone, the contents of the Sac may be any of the viscera contained in its cavity.

Thus the Stomach, liver, spleen, uterus ovaries, bladder, Kidneys, Colon, Coecum as well as the Mesenteric portion of the bowels have been seen in the hernial Sac.

That species of Abdominal hernia which is of most frequent occurrence is the Inguinal, named from the region of the body in which it makes its appearance.

Inguinal Hernia is of more frequent occurrence in the Man than the woman.

In the man it occurs more frequently in the right inguinal region than in the left.

The following Statement taken from the report of the London Truss Society embracing a period of 28 years will prove this.

No. Patients relieved		88.584.
Males.	64.798.	
Females	15.786.	
Males with Left Inguinal Hernia		14006.
" " Right do	do	24316.
Females " Left "	"	511
do " Right "	"	586.

Showing that of the whole number relieved 39419 were afflicted with Inguinal. While 10000 more men had hernia of the

right than of the left side—

Anatomy of Inguinal Hernia.

The abdomen is covered by ~~five~~ pairs of muscles* & various fascia besides the common integument.

The large & broad external oblique, arising high upon the ribs and extending downwards & forwards, is inserted tendinous into the crest of the ilium, & the pubic bones of either side; while its central fibres becoming united to the same portions of the other muscles, the superficial fascia & with each other, form the linea alba.

The lower edge of this muscle on each side, stretches from the crest of the ilium to the opposite pubic bone, by part of its fibres, while others are attached to the spine of the pubis & ~~the~~ its crista.

* External oblique, internal do, transversalis, rectus, & pyramidalis, of which the 1st three alone are concerned

Although it has thus three insertions, a part remains unattached, forming a strong ligamentous edge, to which has been given the technical name of Poupart's ligament.

The lower border of the muscle may be compared to the back of a book; being covered by the skin, having the superficial fascia firmly attached to it & extending above over the abdomen & below over the thigh, & also the internal oblique & transversalis muscles and the transversalis fascia, extending above and protecting the abdomen, while another portion extending deeper forms the iliac fascia, which with the fascia lata of the thigh, extending below, completes the leaves inserted into this well placed hinge or back of my book.

the ~~tendon~~ tendon of this muscle divides near its insertion into the pubis, into two portions; the internal portion or column going to the symphisis, or to the opposite pubic bone, and the External column to the spine of the pubis - This opening is called the External abdominal ring; it is however a triangle; its base being the pubis, its sides the columns, with its apex about one inch from its base - Across this triangular opening thick tendinous fibres, forming with some similar fibres from the columns on each side & crossing at right angles to them, the intercolumnar fascia.

Beneath this tendinous portion of the External oblique, the lower fibres of the internal abligue take their course; those from the spine of the ilium

horizontally towards the linea alba, while those attached to the outer half of Poupart's ligament, pass obliquely in the same direction with the external oblique to their insertion in the pubes.

The lower portion of the transversal muscle, runs nearly parallel with the last; arising from one third of Poupart's ligament, and passing under the internal oblique, end in a tendon with the fibres of the last, and are inserted into the symphisis pubis & linea alba.

This conjoined lies below the External ring.

Immediately below the last named muscle, is a strong fascia; connected to the internal lip of the ilium, and to Poupart's ligament, as far as its third insertion; thence behind the rectus muscle to that

of the opposite side: from these attachments it ascends beneath the transversalis muscle as high as the diaphragm, & as far back as the Psoas magnus. This fascia is firm and tense inferiorly, but as it passes upward is little more than condensed cellular membrane.

It is an opening in this fascia, made by the passage of the Spermatic cord in the male, & of the round ligament of the uterus in the female, about midway between the anterior superior spinous process of the ilium & the pubis, & three fourths of an inch from the center of Poupart's ligament on a line to the umbilicus, which is named the internal abdominal ring.

Between this last fascia & the peritonæum, lies a subserous cellular tissue.

To understand the course of inguinal Hernia and its various coverings, it will be well to trace the passage of the testicle in its descent from the abdominal cavity to the scrotum.

It is said by Anatomists that within the scrotum is originally situated a Muscle, called Gubernaculum testis; reaching through the Spermatic Canal, and being attached to the testicle, by its contraction at the proper time, draws it to its proper place.

This is disputed, & its existence cannot be demonstrated.

Still, about the sixth month of foetal life, the testicle which lies below the kidney upon the psoas muscle, begins to press against the fold of peritoneum above it, & pouching it, finally reaches the peritoneum upon the anterior wall of the belly; pushing

this also before it, the fibrous coat & fascia transversalis are protruded, not directly through the parietes, but obliquely downards & inwards beneath the transversalis muscle, & passing under the conjoined tend of this & the internal obliques, takes some of their fleshy fibres which afterwards form the Cremaster muscle, and passing from the abdomen through the external abdominal ring, takes its place in the scrotum.

The Spermatic cord, composed of an Artery vein & the vas deferens, held together by cellular tissue, the remains of the peritonial covering it originally received, accompanies the testicle in its descent, and remains in the inguinal canal.

Should the opening made by the descent of the testicle remain open, &

the intestine descend, it forms Congenital Hernia. But this opening is usually closed & the interior wall of the abdomen presents a smooth continuous surface.

A small pouch like depression may usually be remarked opposite the exit of the Cord, and corresponding with the internal ring; & another below it similarly situated as regards the external ring.

The blood vessels of importance in this relation to this region, are the Epigastric.

The Epigastric Artery, arises from the external iliac, and runs downward for a short distance, then passes upwards & inwards. near Pouparts ligament, describing an arch around the cul de sac of Peritonaeum, and passing between this

And the transversalis fascia, in the Subserous cellular tissue, crosses beneath & nearly at right angles the Spermatic cord, between the rings - thus being upon the iliac side of the external & the pubic side of the external ring: thus taking its course behind the edge of the Rectus, it enters its sheath & ascends to inosculate with the internal Mammary Artery. It is usually accompanied in its course by two veins —

With this knowledge we can now trace the course relations & coverings of Oblique inguinal Hernia —

The fold of intestine forcibly pushing before it the peritonaeum(1) enters the internal ring obtaining another covering the Subserous Membrane(2) and the transversalis fascia which already enveloped the cord(3) then taking its course along & upon the cord,

it detaches the Cremaster,(4) and Emerges from the external abdominal ring, getting another coat the intercolumnar fascia(5), which with the Superficial fascia(6) & Skin(7) form all the coverings of the Sac, whether it descend into the Scrotum, or remain above the pubes.

If it descend within the Scrotum the Hernia is named Scrotal; if it remain above the pubes, outside the External ring, Complete; if within the canal, incomplete.

The direct inguinal Hernia, does not make its Exit from the belly through the internal ring; but making its passage against the peritonaeum opposite the external ring, forces that coat as its Sac(1) with the Adenous membrane(2) & the transversalis fascia(3) against

the Conjoined tendon of the transversalis & internal oblique muscles, & if pushing them before it as frequently happens, (or through deficiency or position passing to the side of this tendon), it gains this for a covering (4) then passing through the external ring takes as before the inter-Columnar fascia (5) & Superficial fascia, (6) pouches the Skin (7) & descends into the scrotum or remains above the Pubes.

Thus the coverings of direct inguinal Hernia may be, 1 the Skin.

2 Superficial fascia
3 Intercolumnar fascia
4 Cremaster Muscle (Occasionally but seldom)
5 Conjoined tendon (Sometimes not always)
6. transversalis fascia
7 Subserous Membrane
8. Peritonaeum. (Sac.)

Causes.

Sir A. Cooper reduces these to two classes- 1st those which diminish the resistance of the abdominal muscles. & 2ond those which increase the pressure of the viscera.

Debility by relaxing the fibres, tends to dilate the openings of the Spermatic Canal.

Exertion after fever. Old age is very frequently attended with this Complaint.

Hard labor, with much fluid food.

Heat of climate. Hernia more common in very warm or tropical climates.

Obesity, followed by Sudden leanness.

Hereditary Conformation.

Blows, as falling from a horse, a Kick.

Violent Coughing. Lifting heavy weights.

Habitual Costiveness. Stricture Urethra.

Suddenly becoming very fat. This loads the Mesentery & Omentum with fat, and thus fills the abdomen too full.

Constant External pressure. Wearing the clothing too tight.

Mechanics who press the implements of their trade constantly against the belly.

Great distension of the Stomach.

Rough riding. Cavalry Soldiers are much more subject to Hernia than infantry.

Contents of the Hernial Sac.

The Hernia may contain a portion of bowel alone, when it is named Enterocele, or a portion of Omentum, when it is named Epiplocele; or both, when it is called Entero-epiplocele.

A bubonocele is a Hernia which descends as low as the Groin or labium pudendi.

When the protruded bowels lie quietly in the sac & can be readily returned, the Hernia is, Reducible hernia.

When they cannot be returned on account of adhesions, it is Irreducible Hernia

When the contents of the Sac suffer constriction so that their passage is interrupted to the anus, thus bringing on inflammation, & an alarming, often fatal train of consequences, it is Strangulated Hernia

Diagnosis.

A reducible Hernia in the groin, is a soft, somewhat elastic tumor, continued into the inguinal canal, of variable size & shape: free from pain; disappearing on pressure, going up spontaneously when in the recumbent posture, coming down when erect, or when the muscles of respiration are exerted; communicating an impulse to the hand when coughing or sneezing takes place.

Difference between Oblique & direct inguinal Hernia.

1st Shape of the swelling. The tumor in an

oblique Hernia presents an oblong appear-
pointing in the direction of the canal
+ towards the median line, while the
shape of the swelling in a direct Hernia
is usually a circular one covering the
external ring. This is the only sign in
Woman to distinguish them.

2.

The position of the Cord. In the oblique,
the cord is below the sac, and the canal
can be traced, as it contains the various
Coverings of the Hernia in addition to the
cord. The cord lies in its natural position
towards the ilium + can be felt un con-
nected with the Hernial Coverings, when
it is direct.

3. The origin of the Hernia.

The oblique, usually comes on slowly,
while the direct is oftener produced by violence
and makes its appearance suddenly.

4. The Oblique is much more common, than the direct—

5 The position of the Epigastric artery,

This is laid down as a diagnostic sign, but how it can be of value, & its position discovered before dissection, I am unable to see.

Diseases that may be mistaken for Inguinal Hernia.

Varicocele. Bubo, Hydrocele, & inflamed Testicle

Varicocele differs from Hernia, in occurring almost invariably on the left side.

Hernia much more frequently on the right.

The sensation imparted by the convoluted varicose veins, is peculiar—

The swelling is largest below. the ring its natural size. The cord itself is affected.

But to remove all doubt, Sir A. Cooper

plan will be used—

Reduce the swelling, patient in the recumbent posture. The Surgeon then presses firmly upon the external ring; when the patient rises, if it be Bubonocele the swelling returns; which cannot happen if it is Hernia.

From a Bubo it is more easily distinguished.

Circumscribed, incompressible hardness, & no connection with the Cord, point it out while recent; & a small Chain of the tactus Eruditus will distinguish the suppurated Bubo, from intestine or Omentum.

It may be Easily Mistaken for Hydrocele. The Equality of the tumor, power of feeling the cord at the ring, freedom from pain when handled, fluctuation of the water, place of origin, constant size, whatever the position, impossibility of feeling

testicle & its transparency, usually distinguish the Hydrocele — But in some instances they resemble so strongly, that the Surgeon who operates should use great caution.

Known inflamed Testicle, or Hernia humoralis the pain in that organ, its Enlargement, the hardened Epidydimis, and the Gonorrhoea usually preceding it, easily distinguish Hernia

All the operations for Inguinal Hernia, according to Malgaigne, may be reduced to 4 heads.

1— Palliative treatment.

This consists in the proper & early application of bandages, or Trusses; and the importance of care in their use, injoined upon the patient—

2. Radical Cure. We mention ten proposed methods, but condemn them all, on account of the danger attending them, & because Compressio

will as frequently, & more easily effect radical
3.

Proceedings of Reduction.

The accessory means are bleedings, baths
purgatives &c. The surgical means are Position
Compression. Taxis

Place the patient so as to relax the muscles — i.e.
upon his back, pelvis elevated, legs & thighs flexed

Various positions, as head downwards, and
shaken by main force, - suspension over a man's
back head down, - resting on hands & knees
belly down, & head between the arms, - resting
on the side opposite the Hernia; are all
recommended —

Compression. It is advised to place a
bit of lead, a flat iron, a bladder of mercury
or bandage, previous to the taxis.

→ But the great means is the Taxis.
Evacuate the bladder, let your patient breathe

freely, commence with slight pressure,
return first the parts last protruded,
make the pressure in the direction of the
protrusion, for Obliques, backwards through the
1st ring, thus in the course of the canal — &
when the 2nd ring is reached backward,
for direct, - backward through the 1st ring then
inwards — This course is usually successful in
reducing Hernia — Many old Physicians have
never found it necessary to operate —

The signs of Strangulated Hernia, the operation
when all these means fail, the length of time to wa
before cutting, the best Method of operating
whether by opening the sac or without touching
& the after treatment, have all claimed & obtain
my attention, but would require more spa
than I fear would be agreable to my Profe
to follow me, as I but follow Authors familiar to all —

Respectfully

J. W. Hoyte

January 26, 1857.