AN INaugural dissertation
ON
Hernia.

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By
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Of
Tennessee.

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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 Treatise.

The frequency of its occurrence, the variety of forms under which it appears, the disorder with which it may be confounded, the minute anatomical knowledge necessary to one and the signs of necessity for an operation, and 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 attracted 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, Bawmby Cooper, Samuel Cooper, Bolles, Lawrence, Montagu, the various authors quoted by them, and the plates of Mackenzie; together with the teaching of the Professors of the University of Edinburgh, the dissection of 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, ἄκοτος, a branch, as others think from the Latin bases, 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.


**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, oesophagus, 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 year will prove this.

No. Patients relieved 88,584.

Males 69,798.

Female 15,786.

Males with Left Inguinal Hernia 14,008.

" " Right to do 24,316.

Female " Left " 511

" " Right " 586.

Showing that of the whole number relieved 39,419 were afflicted with inguinal while 10,000 more men had hernia of the
right than of the left side.

**Anatomy of Inguinal Hernia.**

The abdomen is covered by three pairs of muscle, and various fascia besides the common integument.

The large and broad external oblique, arising high upon the ribs and downward forwards, is invested tendinous into the crest of the ilium, and the pubic bone of either side; while its central fibers becoming united to the same portion of the other muscle, the superficial fascia, and 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, and part of its fibers, while others are attached to the spine of the pubis and its crista.
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.

This 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, and also the internal oblique and transversus, muscle, and the transversus, fascia, extending above and protecting the abdomen, while another portion extending deeper forms the iliac fascia, which with the fascia latera of the thigh, extending below, completes the leaves, inserted into the well placed hinge or back of my book.
The tendon of this muscle divides near its insertion into the pubis, into two portions; the internal portion or column going to the symphysis, 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 side the column, with its apex about an inch from its base. Across this triangular opening stretch tendinous fibres, forming with some similar fibres from the column on each side, forming at right angles to them, the intercolumnar fascia. Beneath the tendinous portion of the external oblique, the lower fibres of the internal oblique 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 extensor oblique, to their insertion in the pubis.

The lower portion of the transverse muscle, runs nearly parallel with the last; arising from one third of Poupart's ligament, and passing under the external oblique, end in a tendon with the fibres of the last, and are inserted into the symphysis 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 Cecal Macpherson. His 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, and 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 and the psoas, 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, passing through the spermatic canal, and being attached to the testicle, by its contractions at the proper time, draw it to its proper place. This is disputed, and its existence cannot be demonstrated.

Still, about the sixth month of fetal life, the testicle which lies below the kidney upon the lowermost part of the peritoneum, to press against the floor of the peritoneum, pouching it, finally reaches the peritoneum upon the anterior wall of the abdomen, pushing
this also before it, the submucous coat
+ fascia transversalis are protruded, not
directly through the parietes, but obliquely
downwards & inwards beneath the transverse
muscle, & passing under the conjointed end
of this + the internal oblique, takes some
of their fascia from which afterwards
from the abdomen through the external
abdominal ring, takes its place in the
scrotum.

The spermatic cord, composed of an
artery with the vas deferens, held together
by cellular tissue, the remains of the per-
toneal covering it originally received, ac-
companies the testicle in its ascent, and
remains in the inguinal canal.

Should the opening made by this
ascent 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 ex-
ternal ring.

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

The Ergastria Artery arises from
the external iliac, and runs downward
for a short distance, then passes upward
inwards near Poupart's ligament, de-
scribing an arch around the cæcum,
of Peritoneum, and passing between the


Are the transversalis fasciae, in the Peritoneal cellular tissue, crossed beneath nearly at right angle, the Peritoneal cord, between the rings; thus being upon the iliac side of the external + the pubic side of the iliac 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 the skin—

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

The fold of intestine forcibly pushing before it the peritoneum(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 intercalicular fascia (5), which with the superficial fascia and skin from all the coverings of the sac, whether it descends into the Scrotum, or remain above the pubes.

If it descend within the Scrotum the Venaica is named Scrotal; if it remain above the pubes, outside the Extending 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 peritoneum opposite the external ring, force that coat as its Sac (1) with the subserous mem- brane (2) the transversalis fascia (3) against
the Conjoined tendons 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 it, for ascending' (44) then passing through the external ring takes as before the inter-columnnar fascia, (c) superficial fascia, (d) pouches the skin, (e) + descends into the peritoneum or remains above the edge. Then the contents of Gliss of inguinal hernia may be, 1. the skin.

  2. Subcutaneous fascia
  3. Intercolumnnar fascia
  4. Cremaster muscle
     (Occasionally but seldom)
  5. Conjoined tendons
     (Sometimes not always)
  6. Transversalis fascia
  7. Subserous Membrane
  8. Peritoneum. (Sac.)
Causes.

Sir A. Cooper reduces these to two classes—1st those which diminish the resistance of the abdominal muscles, and 2nd those which increase the pressure of the viscera.

Debility by relaxing the fibers, tends to dilate the opening of the Sphincter Canal.

Ejection after fever. Old age is very frequently attended with this complaint.

Heat labor, with much fluid food.

Heat of climate. Vomiting 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 Constipations. Stricture Rectum.

Suddenly becoming very fat, this leads to the present momentum with fat, and thus fills the abdomen too full.
Constant internal 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 enterocèle, or a portion of omentum, when it is named epiplocele; or both, when it is called entero-epiplocele.

A bubonocèle is a hernia which descends as low as the groin or labium pudendi.

When the protruded bowels lie guilty in the sac, it 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 contraction 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 and shape, free from pain, disappearing on pressure, going up spontaneously when in the recumbent posture, coming down when sick, or when the muscle of inspiration are exerted; communicating an impulse to the hand when coughing or sneezing takes place.

Difference betw. Oblique & Direct inguinal Hernia.

1st. Shape of the swelling. The tumor in an
oblique Hernia presents an strong appearance pointing in the direction of the canal towards the median line. While the shape of the swelling is in a direct Hernia is usually a circular one covering the external ring. This is the only sign in Roman 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 sac, Coverings of the Hernia in addition to the cord. The cord lies in its natural position towards the ilium, and can be felt unconnected with the Hernial Covering, when it is direct.

3. The origin of the Hernia.

The Oblique, usually common on Heart, while the direct is often 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 discerned before dissection, I am unable to see.

Diseases that may be mistaken for Impinice Hernia.

Varicocele, Bubo, Hydrocele, Inflamed Testicle

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

Hernia much more frequently on the right.

The sensation imparted by the congested varicose vein, is peculiar—

The swelling is largest below, 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 touched the swelling returns, which cannot happen if it is scleroma.

From a Bubo it is more easily distinguished.

Circumferential, incompressible hardness, no connection with the Cord, joint it out while acute; a small than of the tactus conditus will distinguish the Suppurated Bubo, from interior oramentum. It may easily mistaken for Hydrome, the equality of the tumor, power of feeling the cord at the ring, freedom from pain when handled, fluctuation of the mater, place of origin, constant size, whatever the position, impossibility of feeling
to test clo thi its transparency, usually distingush
the Hydrocele. But in some instances, they assemble so strongly, that the surgeon
who operates should use great caution.
From inflamed Testicle, or Hæmatia hernæ.
The pain in that organ, its enlargement, the
hardened epididymis, and the hæmorrhæa
usually preceding it, easily distinguish them.

All this operation for Inguinal Hæmæria, according to Aebalagnæ, may
be reduced to this head.

This consists in the proper early
application of bandages, or trusses, and
the importance of care in their application
upon the patient.

2. Radical Cure. We mention the proposed
methods, but condemn them all, on account
of the danger attending them, because Compressio
will as frequently & more easily effect radical
3.

PROCEDINGS OF REDUCTION.

The necessary means are bleeding, baths,
purgatives &c. The surgical means are Positive
Compression. Taxis.

Place the patient so as to relax the muscles—i.e.
upon his back, pelvis elevated, legs and hips flexed
in various positions, as head downwards, and
shaken by main force; suspension over a man's
back, head down, resting on hands and knees
belly down, head between the arms, resting
crotch side opposite the hernia; an old
recommendation.

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
First, commence with slight pressure, return first the parts last protruded, make the pressure in the direction of the protrusion, for Oblique, backwards through the ring, then in the course of the canal, when the ring is reached backwards for Acute, backwards through the ring then inwards. This course is usually successful in reducing Hurnia. Many old Physicians have never found it necessary to operate.

The sign of Strangulated Hernia, the operation when all these means fail, the length of time to wait before cutting, the best method of operating whether by opening the sac or without touching the after-treatment, have all claimed to obtain my attention, but would require more space than I fear would be agreeable to my Prefect to follow me, as I but follow Authors familiar to all.

Respectfully

J. M. Hoyt

January 26, 1857.