On the state of respectable & satisfactory Treasurs

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Our Heroics
by
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By the term hernia is generally understood a protrusion of any viscus from the natural cavity which contains it, but surgeons generally confine it to the more frequent form of such, namely protrusions of the viscera from the cavity of the abdomen. It is sometimes seen in children, who are born with the bones of their skull in a malformed condition, a mass of the central substance projecting through between them, to this the term hernia cælicæ has been given. Such a condition may be often produced in the adult as a result of compound fractures of the cranial bones. Instances have also occurred though very rarely, where portions of the lungs have protruded between the ribs through the intercostal spaces.

But protrusions of the viscera of the abdomen are of the most frequent occurrence, arising from the bulk of the parts contained in the abdomen, the relaxed state of its parietes.

The term hernia formerly used to be applied to such cranial protrusions, from the mistaken idea that the peritoneum must necessarily be ruptured in such cases, but it has now been fully ascertained that except in some few very rare cases, the peritoneum always remains entire, which being pushed before the protruded viscera constitutes the sac of the hernia.
The walls of the abdomen in a healthy state, unaffected by injury, disease, or malformation, retain under all circumstances the viscera within their cavity, except when certain natural openings exist; and these openings hernial protrusions are liable to occur, from the effect of the compression to which the included organs are subjected during the production of labor.

Here are four species of hernia more frequently met with than others, to which I will believe us more particularly to attend—namely,

1. Inguinal Hernia, sometime called spermatorrhea, taking the course of the spermatic cord, varying a little in different cases but most frequently following this direction.

2. Femoral Hernia, passing beneath Papsini's ligament, within the crural canal, on the inside of the femoral artery and vein.

3. Umbilical Hernia, taking the course of the umbilical cord.

4. Ventral Hernia, a protrusion at any part of the front or sides of the abdomen, except at the navel or spine.

Besides these, we have others of much more rare occurrence, which are named according to the site of
The causes which produce hernia may be predisposing or exciting. The predisposing causes are those which diminish the resistance which prevents the protrusion of the viscera. Whatever weakens the abdominal walls at any point, always predisposes to protrusion at that point, as a natural want of close development, for instance at the groin or triangle.

Rupture of muscle or fascia at any point, as may happen during parturition, or from a penetrating wound.

Inguinal hernias are more frequent in the male than female from the larger size of the inguinal canal in the female.

The exciting causes consist in the operation of more than usual compressing force, acting on the contents of the abdomen. Whatever tends to propel the abdominal contents with more than usual force against the weak point or predisposed parts, as severe muscular exertion, coughing, straining at stool, sneezing, etc. Other articles of diet which compress the abdomen, involving thereby the confinement of its contents, without strengthening the partes at the natural apertures, are exciting causes of hernia. Pressure from within is consequence of enlargement of some of the abdominal viscera is
a common cause of herna. Women in a state of pregnancy are liable to herna, most frequently to umbilical protrusions; the intestines are forced up, by the uterus as it ascends from the pelvis to the upper part of the abdomen, into a very small space; in this way protrusions sometimes take place.

Herna occurs more frequently on the right than on the left side, because we generally prefer the right side in making any great muscular exertion; the effort made by muscles is consequently in that direction. Persons advanced in years are more liable to hernial protrusions from the partial relaxation of the abdominal wall at the parts of the body where hernial protrusions occur. Certain states of the atmosphere may predispose to herna, from causing relaxation of the body; for the same reason heat may also be considered a predisposing cause, people inhabiting warmer countries being more liable to herna than those living in the colder regions of the earth.

Lastly persons recovering from certain diseases such as fever, which produce a general relaxed state of the body, are extremely liable to hernial protrusions from any unusual bodily exertion. Hernial protrusions vary much as to their contents, for any of the abdominal viscer are liable
to protrusion; but the most frequently affected by
spasms are the intestines and omentum; one or other or
both. When a portion of the intestines alone is pro-
truded, the tumour receives the name of Enterocèle;
when a portion of the omentum-Esophagocèle; and if the
tumour consists of both together Entero-esophagocèle.
Sometimes only a redundant portion of the bowel
escapes, in the form of a diverticulum, which receives
the name of Hernia Lática.

A hernia is said to be reducible when the
protruded parts return into the abdomen, on the
horizontal posture being assumed, or when a moderate
degree of pressure is applied to the tumour.
The symptoms of a reducible hernia are, a
painful swelling, forming at some part of the ab-
dominal parietes, suddenly generally following some
unusual exertion, the tumour coloquially, elastic and
compressible, at first perhaps slightly tense and tender;
afterwards becoming soft, but sensible to touch
disappearing on the horizontal posture being assumed
or on the application of slight pressure, again re-
appearing on recovering the erect posture or on slight
abdominal exertion. If the hernia is composed
of intestine alone, the tumour is smooth, burning
more or less elasticity, and of a rounded form; when
returned into the abdomen a snuffling noise or sensation may generally be perceived, reduction abrupt, taking place immediately.

An Epiplocele on the other hand presents a doughy feel, is less regular in form, emitting no noise on reduction, which is slow and gradual.

In the treatment of reducible hernia, three objects are to be kept in view, namely, prevention, reduction, and retention. By prevention is meant the mechanical strengthening of any part of the abdominal parietes which has become internally weakened and thereby predisposing to hernial protrusion.

All sorts of excitement must also be carefully avoided; for instance, after some unusual exertion, pain begins to be felt, fulness to appear at some abdominal outlet, but by the removal of the exciting cause, the application of suitable mechanical pressure a hernia may be prevented.

The predisposition to disease having been in a manner removed by the timely application of pressure, the surgeon cannot too carefully warn the patient against all kinds of excitement, interdicting the use of such food as has the slightest tendency to produce flatulence, or otherwise cause distension of the bowels; he must likewise be careful in preventing
all accumulation of matter in the intestinal canal.

When a normal protrusion has actually taken
place, reduction cannot be too soon affected, from
the eminent danger, arising from the liability of the
spontaneous translation, which must always be a state
found with the utmost fear to life.

Reduction is to be effected, by placing the patient
in the horizontal position, elevating the head some
what, and relaxing the abdominal muscles by all
means in our power, then using steady and con-
tinued pressure in the direction of the protrusion.

Retention is to be effected by continued suitable
pressure over the site of protrusion, by means of a
stays. In the child by the continued use of the Uri
for some time, a radical cure may be looked for;
because during the general development of the body,
the aperture may acquire its normal proportions
and capabilities. But in the adult, such a radical
cure is not to be expected, for the body has already
acquired its full development and the stays must
therefore be worn for life, unless as sometimes-
thought rarely happens, an abnormal form, from the
presence of a falling pad, which, having gone through
its different stages, have a centreised, produces ins-
sufficient irritation, which consolidating over the outlet.
places an efficient barrier to any return of the pro-
trusion, and therefore not necessitating the further
use of artificial support.

Surgical radical cases as they are called, have been
performed in the treatment of such herniae. One of which
consists in exciting, by subcutaneous puncture, inflam-
ation around the neck of the sac, thereby hoping that
during the inflammation which follows, sufficient
plastic exudation may be thrown out, which con-
solidating, may exclude the unoccupied part of the
sac. There are other methods but none of them
so safe nor so certain as the above. However, no
radical case should ever be attempted unless in
extreme cases, and at the earnest desire of the
patient, from the danger of excessive concomitant
inflammation.

Redundable Hernia. A hernia is said to be incondusive
when it is not amenable to reduction and is per-
mancently fixed in its abnormal position.
The most common cause of this arises from the adhesion
of the omentum or intestine to the interior of the
hernial sac; a second cause is the nature of the
inhumation; a third, contraction of the abdominal
cavity upon the remainder of its contents; a fourth,
from the growth of the omentum or myometary,
without adhesions, from the accumulation of fat, rendering all attempts impossible to return the protruded parts into the cavity of the abdomen.

In the treatment of such cases great watchfulness is to be observed; the patient must constantly wear a simple suspensory bandage to support and shield the protruded parts; the bowels are to be carefully attended to, avoiding all abdominal exciting.

If strangulation at any time supervenes, operative interference must immediately be had recourse to.

**Incarcerated Hernia:** A hernia is said to be incarcerated when it is temporarily retained in its abnormal position, the intestinal canal being in no way obstructed and complete absence of inflammation.

The circumstances which give rise to incarceration are:
1. Thickening and hardening of the aperture.
2. Enlargement of the hernial contents.
3. Temporary contraction of the aperture although the tumour may be but little altered in size.

The main object in the treatment of incarcerated hernia is to remove the obstacles to reduction.

If enlargement of the hernial contents is the obstacle from the accumulation of pasdous matter, it may be diminished by the continued application of cold.
If the contents are solid a fluid, purgatives and enema will prove useful.

If there is reason to suppose that the resistance to reduction is owing to a thickened and indurated omentum, it may be so far removed as to allow of reduction by means of pressure and starvation. Spasmodic contractions at the aperture will be relieved by warm fomentations, opium and other antispasmodics.

Strangulated Hernia: A hernia is said to be strangulated when it is not only confined within the space into which it has descended, but when it is so much constricted by the narrow part through which it has passed, that the circulation in the parts which have descended, is in a great degree suspended, as also all local flow through the intestine constricted. The constriction may depend on spasm, or on other alteration at the abdominal outlet, but much more frequently it is produced by a sudden enlargement or distension of the protruded parts, causing the neck of the tumour to be jammed at the aperture of descent.

The symptoms accompanying strangulation are well marked. The patient first complains of pain about the umbilical region, he is continually
annoyed with flatulence and uneasiness; there is constant
vomiting, owing to the large quantity of gas rising from
the intestines to the stomach; vomiting next supervenes
accompanied by costiveness, although there is a frequent
and urgent desire to go to stool. The tumour is
found incapable of reduction, as first it may be felt
but it soon grows tense, which gradually increases.
There is considerable pain in the swelling and a good
deal around the seat of structure.

Vomiting attends the first onset of strangulation. The abdomen afterwards becomes considerably
distended with air, not at first as the result of in-
flammation, but in consequence of the accumulation
of flatus in the intestine. The vomiting becomes more
frequent and succulent matter is ejected from the mouth
the spasmodic movement of the intestine having
become reversed. During the early stage of strangulation
the pulse is hard and frequent; but as the case
proceeds typical symptoms gradually supervene,
the pulse becoming very much increased in frequency,
and so small as hardly to be perceptible; the
vomiting and evacuation continue and the patient
lies pale, collapsed, and covered with cold perspira-
tion, the countenance contracted and anxious.

The tumour becomes more and more painful,
and tend, intolerant of even the slightest pressure. Pain is felt throughout the whole abdomen; respiration is rapid and distinct; the pulse becomes still more rapid and indistinct; tachycardia comes on; the tumour now becomes less intolerant of manipulation, less tense and painful, it feels doughy and cephalic on being handled; the patient may express himself as being better and imagines that he is getting well, but spasm has taken place and death is close at hand.

When a person has strangulated hernia, there is no hope of safety, but by returning the intestine into the cavity of the abdomen, and as such a condition is attended not only with extreme suffering but also with great and imminent danger to life, it demands the most speedy and decided assistance of the Surgeon.

In order to effect the object in view namely, the return of hernia into the cavity of the abdomen, we are to employ what is called the taxis.

The taxis is a particular kind of pressure on the protruded parts, which is to be performed in the following manner. You elevate the lower part of the hernia with your hand, elevate it slightly and push it back in the direction in which it has
Risk in ice - lower retail power - promote pan-pan - ni atravuea - cases
Having done this with one hand, the fingers and thumb of the other are placed upon the neck of the tumour, and a pinching or tearing movement is gradually continued with, until the tumour is reduced.

In applying the tapec, the patient should be reclining, the shoulders and pelvis slightly elevated, with the limbs and trunk so arranged, as to relax as much as possible the walls of the abdomen. If it has been found impossible to apply the tapec from the great intolerance of manipulation, as is sometimes the case, we may, by the application of ice to the place, so far relieve their sensibility, as to facilitate their reduction, or what is much better, place the patient deeply under the influence of chloroform.

We should, however, never attempt reduction at once, but proceed gently and gradually, and often the pressure for some time, provided the patient does not complain greatly of incureate of pain, and general uneasiness. It is to be pitched back not in mass but piece by piece. In some cases it is not applicable at all, for instance, when the case is acute and has made great progress before assistance has been called, when the parts are so in-
tolerant of pressure as to excite the fear of rupturing the tissues under an attempt at reduction; also when we are satisfied from the extent of the inflammation, that bleeding or ulceration must inevitably take place in the joints. Failing to make any impression on the frontal tumour by means of the forceps alone, we are to have recourse to the following auxiliaries to it.

1. **Pneumectomy.** This procedure is not suitable for every case, the quantity of blood must be proportioned according to the age and condition of the patient, bleeding gently when the patient is sleepy and flaccid, less gently if at all. When the patient is considerably advanced in years, presents symptoms of much constitutional weakness. By bleeding, we diminish the contractile tone of the muscular fiber; at the same time relieving the inflammatory action going on in the parts.

2. **Warm Bath.** This is one of the old and sweet means we possess for assisting in the reduction of a fracture, it ought to have a temperature of from 90° to 100°. The patient is to be kept under its influence until stiffness is beginning to be felt, then the tube is to be suddenly continued with. Some think it best to attempt reduction, while the patient is in the bath, for fear of the stiffness going off before
Best time after

More likely to succeed with layers, after the baths then in the

dissipation of gas in bowl
Reduction can be completed. The warm drink by produ-
cing complete perspiration of the muscular system, it is in general more applicable than a blister.

3. Cold. In some cases this has been used with con-
siderable success and advantage. It may operate
beneficially in two ways: 1. by contracting the system
and diminishing its bulk by which means it presses
against the stratified parts and facilitates their circu-
tion; 2. some think it possesses sympathetic action
in allaying and attending the inflammation of the in-
testines. Cold is only to be applied however in those
cases between which are chronic in their progress,
and where the inflammatory action is scarcely at
all begun. As a cold application, ice is often em-
ployed, but if ice cannot be procured which may
often be the case, ether is to be sprinkled over the
system and surrounding parts, favouring its evapora-
tion by directing a current of air upon it.

2. Infused Eperna. This is one of the most powerful
agents we possess. A proper strength will be, to add
to a pint of boiling water, the drachm of tobacco,
let it infuse for a quarter of an hour and then strain.
Small quantities of this infusion are to be injected
at a time to begin with, in case there should be
a want of tolerance in the patient, of such a

* Bath.
remedial agent. It has the effect of quickening the pulse and making it small; the skin becomes cold and pallid, and the patient experiences extreme muscular relaxation.

This remedy however is to be used with great caution, for little trust to the safer means, if they will answer the purpose. The depression which is produced by its use is often so great as to render the patient unable to bear an after operation, if that should be found necessary.

3. Opium. This given in full doses of not less than one grain at a time, is far better suited than the tobacco enema. It acts favorably upon the system, assisting it to face up against the depressing effects of transplantation, at the same time producing muscular relaxation. It can be only used however, when there is no particular urgency in the case, as it requires some time, before its effects are fully developed.

6. Simplex Mild Enemata. These are sometimes of great use, by diluting the lower portion of the intestine of their contents, and thus making room within the abdomen for the reception of the inflated fluid.

Chloroform. Since the introduction of this anesthetic agent into practice, it has in a great measure lessened the auxiliary means already discussed, and it ought always to be used when pain is to be
Act lead...
avoided and great muscular relaxation required.

Instruments are never to be used from the tendency
that process of increasing the contents of the hernial
hernia.

Pursatious are likewise unapplicable in cases of stran-
ugulation, from the great danger of increasing the in-
flammatory action going on to the fluids, in being the
fluid is shut off, it is impossible that they can act
otherwise.

If the taxis is to be successful, a giving way of
the tumour is felt beneath the hand of the operator,
a@gmail.com noise then follows and quickly afterward
the tumour recedes into the cavity of the abdomen.

Suitable mechanical pressure is now to be applied;
the patient is to be kept quietly in bed, free from
all excitement, and under a strict antiphlogistic re-
gimen. If required an enema may be administered,
but no suppressive should ever be given until a con-
siderable time after the operation.

If a patient and cause of the taxis should
fail, under the assistance of the advocate already
mentioned, the assistance to reductio(n the structure)
must now be removed by means of the knife.

It is difficult to determine how long the operation may
will definitely be done, since inflammatory and

*Safety*
gangrene are liable to come on more quickly in some cases than others, but the majority of experienced surgeons agree, that pain more frequently attends delay than pre-disposition. The best course to follow is to operate as soon as a fair trial has been given to the lacer and its auxiliaries, without success, showing that by no other means than by an operation, can the pains be relieved and the humor expelled.

If on exposing the seminal contents the pains are found quite healthy or merely congested, they are to be reduced unhesitatingly and the external wound approximated with a piece of adhesion. But if on the contrary the pains present all the appearance of becoming gangrenous, namely presenting a dark, purulent color at some places a greenish at others, and pimple to the touch, under these circumstances they to be reduced, the fatal extravasation of feculent matter within the cavity of the peritoneum must ensue.

If it is a gangrenous condition it must be allowed to slough away in its abnormal position. In the case of a gangrenous intestine it is well to cut up the serous parts, so as to give relief by evacuating the feculent matter, by plastic evagination the open portion of the bowels is retained in contact with the abdominal parietes, thereby establishing the condition
necessary for an artificial anus.

Having now as briefly as possible discussed the first part of this thesis, namely general hernia, I come now to treat of each individual hernia more in detail, and in carrying out my observations I will first speak of the surgical anatomy of the particular hernia, secondly as to its diagnosis, and thirdly as to its treatment. But as so much has already been said upon the treatment under general hernia, I will confine myself principally to its treatment, as regards the lines of incision that will be found necessary in operating for its relief when strangulated.

There can be no doubt as to which hernia deserves our first and most particular attention from the quite frequency of its occurrence at least in the male sex, namely Inguinal Hernia.

Surgical Anatomy

Inguinal Hernia.

In the direction of the abdominal walls it will be seen that the weakest part is immediately above Poupart's Ligament, where the Intercostal Oblique and Transversalis muscles are wanting. In consequence of this deficiency the abdomen
contains an more liable to protrude here, giving rise to an inguinal hernia, to which they are likewise predisposed from the passage of the afferent cord. In leaving the abdomen, the enteric ulcer passes with the cord through the internal abdominal ring, or it may push its way through the triangular space between the epigastric artery and outer border of the rectus muscle. According to the relation it bears to the epigastric artery a hernia of this region has been divided into External and Internal; or from its course through the abdominal walls, Oblique or Direct; the one accompanying the afferent cord being at the same time internal and oblique, while the other, protruding internally to the epigastric artery, being internal and direct.

In the surface marking this region we observe first, the prominent anterior superior spurious process of the ilium, bounding the upper and outer part of the thigh; the spine, cost, and symphysis pubis make be made out at the upper and inner part of the thigh. Stretching between the anterior superior spurious process of the ilium, and the spine of the pubis, is a tense firm band, with its convexity towards the thigh, formed by the lumbraca
fibres of the external oblique muscle, commonly called Posterior Ligament. Rather above and to the outer side of the spine of the pubes, opening of the external abdominal ring may be felt, and with it the aponeurotic cord passing to the testicle.

After the removal of the integuments we come upon the Superficial Fascia. This fascia is slightly adherent to posterior ligament along the floor of the groin, becoming continuous with the aponeuroses of the lower extremity. It varies much in thickness in different individuals according to the greater or less amount of fat deposited within its meshes, and according the depth of an incision required to divide it. This fascia has been divided by anatomists into two layers, by the ramifications of the superficial vessels of the groin. The external layer consists chiefly of loose reticulated cellular tissue, having more or less adipose tissue deposited in it. The thicker portion of this layer is stretched over the body of the or pubis, where the fat is developed in large quantities, constituting in the female the mons veneris. The quantity of fat diminishes towards the bend of the thigh.

Superficial Vessels. 1. Superficial epigastric artery and vein; the artery a branch of the common femoral, arising
a short distance below the crural arch, and passes upwards and inwards towards the umbilicus, supplying the integuments in the course and about connected with the deep epigastric artery; the vein takes the same course as the artery, and empties itself into the great saphena vein. 2. Superficial pudic arteries and veins also branches of the common femoral artery and great saphena vein, coming from the saphenous opening they pass upwards and inwards obliquely to be distributed to the superficial investments of the end and testicles. Some of these vessels will necessarily be divided in an operation in this region, but the bleeding from them is generally so slight, as seldom to require to be attended to. Superficial Lymphatics: Between the two layers of the superficial fascia, will be found situated three or four small lymphatic glands, parallel with and immediately above superficial ligaments: connected with these upon careful dissection will be found numerous delicate lymphatic vessels.

After the removal of the superficial vessels, the deep layers of the superficial fascia will come more clearly into view. It is firmly adherent towards the medial line to the linea alba, and inferiorly to the cutaneous surface of superficial ligament.
particularly to its outer half and to the illiac portion of the fascia lata. As it passes down the thigh it becomes spread over the saphenous opening, its margins of which are closely attached. This layer is strong and elastic, presenting a smooth compact and glistening appearance.

The subfascial fascia as it passes over the inguinal cord into the scrotum to become the dartos, loses its adipose cellular character and assumes a fibrous structure, which, from its contractility and microscopic appearance, is supposed to contain involuntary muscular fibers.

Afterwards of the External Oblique Muscle. Having removed the subfascial fascia, the glistening tendinous fibers of the external oblique muscle come into view. The lateralmost fibers of this muscle as they approach their insertion into the pubes, split up into two bands or columns. The upper band forming superficial ligament becomes attached to the ilium of the pubis, extending full an inch backwards on the pelvic line, forming what has been called gubernaculum ligament. The inferior band is inserted on the symphysis pubis, decorating with the fibers of the opposite side. By the separation of these two sets of fibers, an opening is left of a triangular shape, extending upwards and outwards with
its base resting on the front of the pubes, almost around one in the healthy subject, by the intercolunmal fibres, which serve firmly to bind them together.

External Abdominal Ring. The interval left by the separation of the fibres already referred to, is named the external abdominal ring, through which may now be seen passing the spermatic cord of the male or round ligament of the female. The size of this ring varies considerably in different individuals.

In some instances it is firmly applied to the parts that pass through it; in others, it is so large as to be obviously a source of weakness. The external is the known but stronger of the two pillars of the ring and supports the spermatic cord, or round ligament. When a hernial sac is protruded through it, it assumes a circular form. Thus then the external abdominal ring is merely the opening formed by the divergence of the tendinous fasciculi of the aponeurosis of the external oblique muscle. This opening is considerably larger in men than in women, for the round ligament requires a smaller opening for its transmission than the spermatic cord! This obviously accounts for the great frequency of inguinal hernia in the male than in the female.
Intercolliar Fascia. This is applied to a regular series of strong tendinous fibres, lying closely upon the outer surface of the aponeurosis of the external oblique muscle and crossing the fibres at nearly right angles. Inwards the anterior superior spinae fibres of the ilium these fibres are weak and scattered, but as they approach the outer extremity of the external abdominal ring, they become much more numerous and at the same time increased in strength and thickness, being thus well calculated to bind together the pillars of the ring. The fibres of this fascia are generally found more strongly developed in men than in women, and in some rare instances they have been found on both surfaces of the aponeurosis of the oblique muscle. They are in some subjects so thin and delicate, as evidently to be a source of weakness and to predispose to hernial protrusions at this part of the abdominal wall.

Spermatic Fascia. This is a thin and delicate fascia, supposed by some anatomists to be merely a continuation and modification of the intercolliar fascia. It descends from around the circumference of the external abdominal ring upon the spermatic cord, a round ligament, as they emerge from
the inguinal canal, passing to the lower part of the fistula is completely surrounded both at and the cord. In cases of old and large fistal fumus, the spermatic is commonly much increased in thickness and density. In the female it is neither so strong nor so extensive as in the male; in the former it becomes blended with the cellular and adipose substance which covers the crest of the os pubis, and into which the round ligament is inserted.

**Internal Oblique Muscle.** This is the second muscle in order that comes into view in this region. The inferior fibers arising from the inner half in two-thirds of Poupart's ligament, arch over the spermatic cord and become inserted by a common tendon, with the transversalis muscle, into the crest of the pubes. The spermatic cord passes beneath the fleshy part of this muscle, but in some rare cases have been noticed (Cooper) where it passed through the bone part of it.

In such a case, the muscular fibers would act as a sphincter upon the inguinal canal, and would be a cause of stricture either if they became spasmodically contracted upon a hernial pro-trusion. Some of the most inferior fibers of this
Muscle become very much curved as they cross over the oesphatic cord, and becoming tendinous ascend behind the cord and the internal abdominal ring, to become firmly inserted, along with similar fibers of the transversalis muscle, into the posterior of the pectineal line of the os pubis, which is situated behind the pubic symphysis.

**Breast Muscle.** This is merely the lowest fibers of the internal oblique, carried down by the rectus in its descent from the abdomen to the scrotum. Springing from the middle of Pouch's ligament, the fibers pass in the form of arches in front of the outer side of the oesphatic cord, and tunica vaginalis, after which they ascend along the inner side of the cord to terminate by being inserted into the crest of the pubis.

In the female this muscle cannot generally be said to exist, yet in some instances a few of the inferior fibers of the internal oblique are observed loosely scattered over the round ligament of the uterus, while it lies in the lower part of the inguinal canal.

**Transversalis Muscle.** This muscle which may be seen on removal of the internal oblique, does not in general possess such an extensive
origin from Piriades ligament, as the muscle presents by mentioned form which circumstance a considerable space at the lower part of the abdomen is left unprotected by it. The lowermost fibres are immediately over the cord, as it appear at the internal abdominal ring, and become inserted. As previously stated with the internal oblique into the crest of the pubis, the fibres being likewise prolonged upon the pubic bone ridge.

**Conspired Tendons of the Internal Oblique Muscles**

The muscles of the posterior part of the abdominal wall, as well as the oblique muscles, are united in this manner: They fuse together, and lie immediately behind the external abdominal ring, and well therefore done to strengthen the wall of the abdomen, where it is weakened by the presence of that opening. Partly situated in front of the pyramidalis muscle and lower portion of the rectus, it is inserted into the crest of the pubis and on the spina iliaca and behind the inguinal ligament and the spermatic cord, as it lies in the lower part of the inguinal canal. In this manner it closes up a considerable portion of that space situated between the epigastric artery and outer border of the rectus muscle, thus constituting the posterior wall of the lower extremity of the inguinal canal. Here also may be mentioned a triangular band of fibres passing from the crest of the pubis to the
luna alta, in front of the conjoined tendon, this structure will also serve to strengthen the abdominal wall in the same situation.

Rectus Muscle. This is the last muscle we have yet to speak of in this region, descending from the thorax along the front of the abdomen, it becomes inserted into the crest of the pubes. As it approaches the intestine it is considerably contracted and lies behind all the other muscles already mentioned.

Having now removed all the muscular strata in front of the abdomen, we expose the Transversalis Fascia. This fascia is intimately connected to the inner surface of the transversalis muscle and immediately surrounds the peritoneum. It varies considerably in density and strength in different individuals, and in different parts of the same individual. It increases considerably in thickness towards the lower part of the abdomen, especially to the inner side of the internal abdominal ring, and must therefore be of considerable service in giving strength to the abdominal wall at this point. The darting end pierces the membrane, a more correctly speaking stretches it before it in the form of a funnel, hence the term infundibuliform fascia given to this covering
of the end. This vessel is wider and longer above at
the internal abdominal ring, than lower down
where it gradually contracts on the structure it
serves to enclose. Around the circumference of the
internal abdominal ring, it adheres very closely to
the inferior margin of the transversalis muscle.

Internal Abdominal Ring. The term is applied
to the opening through the transversalis fascia, as
lies immediately above Pueriilis ligament and above
midway between the anterior superior spinous process
of the ilium, and spine of the pubes. In the former
condition of the fascia, the aperture with clearly de-
scribed margins will be found to exist in this
situation, the term being applied not so much in
reference to the natural figure of the part, as on
account of the form which it presents when a surgical
intervention has taken place through it. It is bounded
superficially by the flabby and tendinous margin of
the transversalis muscle, inferiorly by the guarded
surface of Pueriilis ligament and internally by
the epigastric artery and its vein comites.

The only artery of importance that is to be found
in this region is the

Deep Epigastric Artery. It is of great interest from
the relation in which it stands to the two posterior
in this region touch, arising from the external iliac, a few lines above Puerperal ligament, it curves upwards and inwards to the centre of the abdomen.

passing along the inner edge of the internal abdominal ring, between the falciform cava and transversalis fascia. In the first part of its course the artery lies embedded in the subcutaneous cellular tissue, between the fascia transversalis, and the peritoneum, but about midway between the umbilicus and symphysis pubis, it pierces the tendinous sheath of the rectus muscle, and coming up behind it communicates branches to the surrounding structures.

The vein follows the same course as the artery, occasionally there are two veins.

The channel through which the spermatic cord passes from the abdomen is called the

**Inguinal Canal.** It extends between the internal and external abdominal rings of about two inches in extent. It has an oblique course, running parallel with and immediately above the inner half of

Puerperal ligament. The floor of this canal is formed by the union between the fascia transversalis and the inferior fibres of the external oblique muscle;

it is bounded in front by the aponeurosis of the external oblique, and laterally internally for a short
Distance, by the flaccid fibres of the internal oblique; behind it is bounded by the transversalis fascia assisted towards its upper extremity, by the conjoint tendon of the internal oblique, and transversalis muscles. The male a superfiicial orifice of the inguinal canal, is the internal abdominal ring, situated immediately above Poupart's ligament and midway between the anterior superior spineous processes of the ilium and spine of the pubis. In the female anterior aperture is formed by the external abdominal ring, placed immediately above the spineous processes of the os pubis. In the male the inguinal canal contains the spermatic cord and upper portion of the cremaster muscle; and in the female the round ligament of the uterus.

Subserous Cellular Tissue. Situated between the inner surface of the fascia transversalis and peritoneum. It is frequently of considerable thickness, especially in insistent subjects, in whom it becomes very much loaded with adipose matter. The spermatic cord and round ligament each receive an investment from this structure, before entering the inguinal canal.

Inguinal Suture. On examining the inner surface of the peritoneum, two suture will be observed
as the region of the groin, separated by a projection of the internal membrane, formed by obliquity of the hypogastric artery. The most dependent part of the external fossa is generally opposite to the internal abdominal ring, while the same form corresponds to the external ring. The external inguinal fossa is in the male at least, the deepest part of the abdominal cavity, and thus is accounted for the greater frequency of hernial protrusions in this region. The internal fossa is not so deep as the preceding, it is situated on the inner side of the epigastric vessels.

There are two principal varieties of inguinal hernia, characterized by the course which they pursue, the manner in which they are protruded from the cavity of the abdomen, and the position which the neck of their neck bear relatively to the epigastric artery.

**Inguinal Hernia.**

1. **External e Oblique Inguinal Hernia.**

This is of most frequent occurrence of the two, it pursues the same course through the inguinal canal as the spermatic cord; it is also named external from its relation to the epigastric artery.
6
S. Iubert. Ab. Dominus
The coverings, which it receives in its passage through the abdominal walls, are: 1. A covering of peritoneum from the external inguinal fold, constituting the sac of the hernia. 2. From the subserous cellular membrane. 3. The funnel shaped process of the transversalis fascia (enfundibulofemoral fascia). 4. Omentum, formed by the muscular fibres of the omentum muscle, with the intervening cellular tissue. 5. The columnar or spermatic fascia prolonged from the external oblique muscle. From this it will be seen that this hernia receives a covering from each of the structures forming the abdominal wall unless the transversalis muscle. After passing into the scrotum it becomes covered in addition by the dartos and common integument of the scrotum. In its passage along the inguinal canal, it lies in front of the vessels of the spermatic cord. When it does not extend beyond the inguinal canal it is called a "Bulbarcele." When it reaches the scrotum it is called a "Inguinal Hernia." The hernia is said to be congenital when it occupies the cavity of the tunica vaginalis, the communication between this cavity and the peritoneum not having become obliterated.
It is called "Inguinale" when the hernia is devoid with a distinct sac, the perineum consisting in the circumstance of the hernia and its sac being invested by the upper part of the inguinal canal. In the female, the inguinal canal forms the course of the round ligament, and is ultimately lodged in the cavity of the obturator internus. The coverings are the same as three in the male, with the exception of the cremasteric fascia which is wanting.

The changes which the different structures in this region undergo from the passage of a hernia are the following. The transversalis fascia in the majority of cases becomes little altered, except that the internal abdominal ring is greatly enlarged from the protrusion through it of the hernial sac.

The subserous cellular tissue is found in some cases considerably thickened and increased in vascularity when it covers the neck of the sac.

The transversalis muscle becomes little or no alteration from its usual form and appearance, however, in some cases of large inguinal hernia of old standing its lower edge is pushed upwards and become more arched than ordinary and the conjoint tendon is displaced more or less backwards.

The inferior fibers of the internal oblique muscle which
take their origin from the middle of Periparts ligament, are more or less attached in position by the fascial sustentaculum, as it abducts through the inguinal canal.

The cremaster muscle is frequently very much atvad from its natural and healthy condition, particularly if the hernia has been of old standing. The folds become very much enlarged and lose to a great extent their muscular character.

The fatty fascia in many cases becomes considerably increased in thickness and density.

The external abdominal ring in some instances is much distended and at the same time it loses its triangular form.

The intercurrences give are pushed upwards and outwards, and becoming approximated to each other, form a strong band which limits the further distension of the ring. They likewise become much increased in thickness, and strength.

The superficial fascia in general, presents its ordinary appearance, although in some cases it is increased in density.

The pubic bone is rarely found altered in its structure or appearance, unless around the neck of the sac, in this situation it is liable to become very much
thickened. This deposition of new matter around the neck of the hernial sac, is always followed, by a diminution in the calibre of the mouth of the sac.

The epigastric artery is frequently observed to be very much displaced from its usual course, by hernia of large size and old standing. In such cases it is pushed towards towards the median line.

**Internal or Direct Inguinal Hernia.**

Instead of following the whole course of the inguinal canal, the vessels in this case pass through the wall of the abdomen, unite to the epigastric artery, having a straight course through the abdominal cavities, and external ring. The hernia passes through the triangular space, already mentioned, the sides of which are formed externally by the epigastric artery, internally by the outer border of the rectus, and inferiorly by Poupart's ligament. Over the two upper thirds of the space, the tendon of the internal and transversalis muscles is stretched, but over the outer third there is no such resisting barrier.

It sometimes happens, that the sac of an internal inguinal hernia, instead of protruding at once through the external abdominal ring, passes into
the inguinal canal, where it is closely bound down
and compressed by the aponeuroses of the external
oblique muscle.

The different structures which give covering to
this hernia are:
1. Peritoneum.
2. Fascia transversalis.
3. Conjoined tendon of the internal oblique and
transversus muscles, unless at times it happens
it passes through by rupturing its fibres. 4. Intero-
columnar fascia with the superficial fascia
and integuments. In most instances of direct
inguinal hernia, the spermatic cord is situated
along the external and posterior aspect of the
sac, instead of being placed directly behind
it, as is the case in the external form of inguinal
hernia.

Sometimes the protrusion takes place through
that part of the triangular space, not covered
over by the conjointed tendon. This is generally
owing to an unusual position of the obliterated
hypogastric artery, causing an alteration in the
position of the internal inguinal fora, through
which this hernia passes in its descent.

From its course being as far out, it will receive
a covering from the external oblique muscle, which
the previous hernia wanted; its investment will
intermisc. A not mention
therefore coincide with those of an external oblique
inflammation.

Diagnosis. We find a tumour in the region of
the inguinal canal, elastic, elastic and compressible,
disappearing on the application of a slight degree
of pressure, or on the patient's assuming the sitting
the position. A distinct impulse is given to the
contents on coughing. The testicle is found separate
from the swelling at the lower side of the scrotum.
A more or less degree of swelling may be perceived
in the inguinal canal. The other affections for
which it may be mistaken are:

1. Hydrocele. In cases of hydrocele the tumour
more or less translucency, unless the covering
are proportionately thickened, and unless there
is great distension, fluctuation will be felt.
Pressure has no effect on the tumour, except in
cases where the communication between the tense
papillae, and cavity of scrotum remains
not obliterated. The testicle is generally found
occupying the back of the swelling a little
below its middle. In this case the spermatic
cord will in general be found quite free
in the inguinal canal. When a hydrocele
and a varicocele occur together, the former is most.
commonly situated in front of and below the latter.

2. Hydrcele of the Cord. When low down, it may be
distinguished by its transparency, and fluctuation
by the round or ovoid form of the swelling, its
constant varying size, the ease with which it
may be moved upon the cord. However, when it
is high up, extending into the inguinal canal, it
may receive an impulse on coughing, and otherwise
obscure the diagnosis.

3. Bladder, a soft, loose enlargement of the aftermost
parts, resembles a hemia, and as to increase or
assuming the erect position, and dilating on cough-
ing. On applying pressure over the external ab-
domininal ring, after the tumor has disappeared
in the patient assuming the horizontal position,
there will be an return of the swelling in recovery
of the erect position in the case of a hemia, but
it will be otherwise with a bladere, the latter also
communicates to the touch the sensation of grasping
a bundle of earth worms.

4. Hematocèle, may be distinguished by many
of the same signs as hydrcele, from which it
differs in not being transparent, and possessing
a greater specific gravity.

5. Enlarged Testis, has sometimes been mistaken for
a bulcele, but the solidity and peculiar form of the swelling, and the characteristic pain on pressure, combined with the previous history of the case, will generally be sufficient to distinguish the former.

Enlargements of the inguinal glands have likewise been mistaken for varieties of this hernia, but by attending to the previous history of the case, and to the absence of all enlargement on coughing or other abnormal exertion, the two may in general be easily distinguished.

Distinctive Diagnoses between an Oblique and Direct Inguinal Hernia. The former when recently formed, is elongated and narrowed at its upper part. It is also accompanied by a degree of fulness along the inguinal canal, with considerable tenderness on pressure being made over it. After it has passed through the external abdominal ring, it is observed to be directly in front of the spermatic cord.

The direct hernia protrudes more immediately over the pubis, there is no fulness or tenderness in the inguinal canal, and the spermatic cord is usually behind its outer side. But these distinctions can be only made out when they are recent and of moderate size.

Treatment. In applying the tais, with the view of
replacing the protruded part, we will greatly aid our efforts by placing the thigh upon the abdomen, and inclining the trunk forwards, thereby relaxing the abdominal muscles which in most cases are the only obstacles to the attainment of our end. Pricking is to be made in the direction of the protrusion.

Operation. In operating with the view of relieving the structure, the patient is to be placed upon a table, or on the edge of a bed, in the recumbent position, with his shoulders well supported by pillows. The structure will be found either at the external abdominal ring, at the internal, or at the neck of the sac itself.

The first incision is to be made along the neck of the tumour to such an extent as may be thought necessary, which will vary according to the extent of the protrusion. The skin, superficial fascia, and superficial external pudic artery and occasionally the superficial epigastric, are divided by this incision, and it may be necessary to the forum of this prove traction. Having now exposed the fibres of the external oblique muscle with the intercolumnar fascia, each of the perineal coverings are to be divided in succession, by
punching them up separately with a pair of forceps and producing division with the knife held parallel to the sac. Having now by division of the sac reached the intestine or omentum, as the case may be, which will be easily recognised by the glistening appearance of the peritoneum covering them, we are to seek for the seat of structure. If it be found at the extreme abdominal ring, the contracting fibres are to be divided to the necessary extent by means of a fine pointed bistoury introduced flatly in the forefinger of the left hand, which is then turned upwards thereby bringing the edge of the knife in contact with the contraction. But if, as is generally the case, the structure is found higher up, the tendinous fibres of the external oblique muscle are to be divided for the whole extent of the inguinal canal, and the structure which will be found either at the internal abdominal ring, or at the neck of the sac, is to be divided by an incision carried directly upwards. This deep incision as a general rule is to be made directly upwards, to avoid all risk of lacerating the epigastric artery. In cases of hernia of old standing, we can have with any degree of certainty diagnose an oblique from a direct inguinal hernia. But if in any
Schmuckel's operation was admitted as very generally applicable — not the exception, almost the rule.
case, we feel perfectly satisfied as to the cause of
the fistula. In such cases, the safest incision in cases of
an oblique hernia would run upwards and outward,
while that for a direct hernia would be upwards
and inward.
Some surgeons have proposed division of the sac
without opening the sac of the hernia. This may
be useful in some cases, but as a general it is im-
possible to open the sac, for the former procedure
will be found applicable in only a very small pro-
portion of the cases. Unless the neck of the sac is
easily accessible the incision proves the source of
structure.
If the hernial contents in being exposed are found
perfectly healthy, they are to be returned into the
abdomen, by means of gentle pressure directed to
that similar to that employed in the chest.
The edges of the wound are then to be carefully
brought together, and retained by stitches, and
other means used to avoid adhesion.
The after-treatment will consist in attending carefully
to the patient's symptoms. If tenderness of the
abdomen should supervene on the operation,
warm applications will be applicable. If
symptoms of peritonitis present themselves, such
as quick pulse, thirst, anxiety, heat of skin, restlessness
with excessive tenderness over the abdomen, general and local bleeding must be stopped. To achieve this, the patient is to lie in bed for at least four hours after the operation. If required, evacuation from his bowels may be gently achieved by administering a tablespoonful of castor oil, and if necessary followed up by a mild enema.

**Surgical Anatomy.**

**Femoral Hernia.**

The groin comprises within its limits, the triangular space or hollow, observable at the upper part of the thigh. Its base upper part is bounded by Poupart's ligament, externally by the sartorius muscle, and internally by the adductor longus, the two latter structures meeting below, form the apex of the triangle. The skin over this region is very thin and delicate and slightly covered with hair.

**Superficial Fascia.** Divided into two layers, by the name of the superficial vessels of the groin. The external layer is a thin stratum of subcutaneous tissue of considerable density and firmness; it extends over Poupart's and the crest of the ilium, but without adhering closely to these structures, and becomes continuous with the corresponding layer covering the walls of the abdomen. The deep layer is firmly...
adherent to the fascia lata, about an inch below Poupart's ligament, but more intimately to the margin of the saphenous opening. Where it is stretched across the saphenous opening, it has received the name of cubital fascia, from the numerous apertures in it for the passage of blood vessels.

Veins. The large saphena vein commencing from a pleat of skin on the dorsum of the foot, passes along the inner side of the leg and thigh, to terminate by joining the trunk of the common femoral, from an inch to an inch and a half below Poupart's ligament. Immediately before its termination the internal saphena is joined by several small veins in this region, namely: superficial epigastric, superficial circumflex iliac, and external pudic veins. These veins correspond to the superficial branches of the femoral artery in this region.

Arteries. The superficial epigastric artery a small branch, springing from the trunk of the common femoral, a little below Poupart's ligament, takes its course through the saphenous opening, and turns upwards and inwards over the cranial arch, to ramify between the two layers of the superficial fascia of the abdomen. The external pudic arteries are two in number, the superficial, external pudic after
escaping through the saphenous opening, runs upwards and towards the spine of the pubes and crossing the espermatic and surrounding ligament, supply branches to the integuments and ducts of the scrotum. The deep external pudic runs downwards behind the pubic portion of the fascia lata, which it pierces near the angle of the pubes and passing over the espermatic and a little below the preceding, divides into numerous branches for the supply of the penis, and urethra, in the male and the analogous structures in the female. The superficial circumflex iliac along the smallest of these branches, generally pierces the fascia lata at some distance extend to the saphenous opening, and passing upwards over the root of the thigh, becomes distributed to the integuments in that region.

Cutaenous Fascia. This is mostly that portion of the deep layer of the superficial fascia, which is stretched over the saphenous opening. It is covered externally by the superficial vessels already described, while its internal surface is in opposition with the anterior surface of the sheath of the femoral vessels.

Fascia Lata. or the enveloping aponeuroses of the lower extremity is firmly attached along the lower border of Pyriform Ligaments. About an inch below this ligament...
and to the inner side of the middle line of the thigh is the
Saphenus Ophirion, so called from its transmitting
the internal saphena vein. This aperture is of an oval
form measuring about half an inch in breadth, and
an inch and a half in length. Externally it is bounded
by a well-defined margins, which terminates inferiorly
and inferiorly in the tibia. The rigidity of this margin
of the saphenus opening is much influenced by the
position of the limb, being most unyielding when the
limb is extended and rotated outwards and most relaxed
when the thigh is flexed and turned towards.
In accordance of description the fascia lata has been
divided into two portions as the upper part of the thigh
that first lying internal to the saphenus opening being
called fascia latae, from its attachment to the ilium,
being likewise firmly adherent to Poppeus' ligament along the side of the groin. The pubic
portion lies external to the saphenus opening and
passing over the quadriceps muscle becomes attached
to the symphysis pubis. On removal of the fascia
lata, the sheath of the femoral vessels comes into
view.
Sheath of the Femoral Vessels. The sheath is funnel
shaped, and formed by the lining menibrane of
Depart department in the Central Arch distinct structures
the abdomen passing in front and behind the
pelvis. It is divided into three compartments by septa
placed on each side of the femoral vein. Lying in
the external compartment we have the femoral artery,
in the middle the vein, and internally the lymph.
pathetic with a gland. The sheath is closely applied
to the artery and vein, so that in the natural
and healthy state of the parts there is no space
left for the passage of a hernia. The space how-
ever to the inner side of the blood vessels is occupied
but partially by the lymphatics, and through this
the hernial projection takes place.
Prepared Ligament, which in connection with femoral
hernia, is named the femoral or crural arch, extends
from the anterior superior spineous process of the
iliacum, to the spine of the ischium. Widening to
its inner end it folds backwards to become fixed
to an inch or more of the pectineal line. This latter
part is of a triangular form, and is known as
lateralis ligamentum, the base of which is sharp
and forms part of the inner boundary of the
grafting. On removing the femoral sheath a
band of fibres will be seen passing from the
transversalis fascia over the femoral sheath,
and widening towards its inner end becomes
fixed to the femoral line. This band is known as the deep femoral arch.

Crural canal, applied to the innermost or lymphatic space, within the crural sheath. Its length is from a quarter to half an inch, extending from the base of the femoral ligament to the inferior cornu of the saphenous opening. In front of the sheath are the prostatic ligament and the upper end of the saphenous margin of the saphenous opening, whilst behind is the sphenius muscle, covered with the pubic portion of the fascia lata. On the inner side is the femoral ligament and on the outer, the femoral vein.

Crural Ring, or the opening, by which the crural canal communicates with the cavity of the abdomen is larger in the female than in the male, oval in form, its greatest measurement extending from side to side, and of about half an inch in extent. It is separated from the cavity of the abdomen by the peritoneum and a layer of subserous cellular membrane. On three sides the ring is bounded by very unyielding structures. In front are the femoral arches; behind is the horizontal ramus of the pubes covered by the sphenius muscle; on the outer side the external iliac vein covered by
the sheath and on the inner side the several
cutaneous nerves connected with the sartorius line of the
pubes, namely, the rectus abdominis muscle, the conjoint
tendon of the sartorius oblique and transversalis
muscles and the deep femoral arch.
The epigastric artery is closely connected with the ring
immediately above its outer side; in front is a small
branch of the epigastric to the back of the pubes.
In some instances the obturator artery, taking its
origin from the epigastric, descends in its passage
to the pelvis on the outer side of the ring and it
has been found in a few cases to turn round
the ring to its inner side.
In the male subject, the spermatic cord as it lies
in the inguinal canal, is situated close above
the antractic margin of the cervical ring. This should
always be borne in mind, since it is recommended
by some authorities, to divide the structure directly
upwards when operating for the relief of a strangulated hernia. If the incision therefore in this
direction be not very limited, the spermatic vessels
may be wounded. Again if a femoral hernia were
to be found in an individual when the course of
the obturator artery was along the inner side of
the cervical ring, the roof of the sac would then
be surrounded, in at least three fourths of its circum-
ference, by large and important vessels.

**Septum Obturale.** This is the layer of cellular
membrane, which closes in the superior opening
of the cranial canal. It varies much in strength
in different subjects, in most persons it is sufficient
strong and resilient to afford a considerable obstacle
to the formation of a femoral hernia, while in others
it is very thin and weak. It is traversed by numerous
lymphatic vessels which ascend by the inner side
of the femoral vein, from the inferior extremity, to
the cavity of the abdomen, to terminate in the
abdominal glands, which are situated along the
sides of the external iliac artery and vein. This
structure adjoins to the tendinous margin of the
cranial ring.

The cranial ring is sometimes considerably dilated
by the protrusion through it of a femoral hernia.

The situation of the femoral vein is little altered,
it lies along the external and inferior surface
of the thigh.

The deep epigastric artery runs over and is frequently
in pretty close contact with the inferior external
angle of the neck of the sac.

The semilunar edge of the false femoral process of the
fascia lata, is also pushed upwards and outwards, 
bearing converted into a well formed, tendonous arch, 
which along with the pubic portion of the fascia 
lata, includes the greater part of the neck of 
the sac.

In passing from the cavity of the abdomen, the 
pudendal. Theirs just assume a vertical course, 
but as the lower end of the caval canal, they 
pass through the saphenous opening and ascend 
upwards in the thigh and over Poupart's liga-
ment. The reason for this upward course is sup-
posed to be owing to the intimate connection 
xisting between the deep layer of the superficial 
fascia and the lower margin of the saphenous 
opening.

The coverings of this hernia from within outwards 
are: 1. The sac derived from the external fossa of 
the rectus abdominis. 2. Figutine bivalve. 3. A covering from 
the femoral sheath. Unless the protrusion 
breaks through it. 4. Cutaneous fascia. 5. Superficial 
fascia and integument.

Diagnosis. When inguinal hernia descends to the 
vastus and when femoral hernia extends some 
distance in the groin, no error in diagnosis is 
likely, since between the two. But to distinguish
a femoral hernia of moderate size, from a bubo. 

Secondly it is a more difficult matter; however Poupart's ligament may in general be traced above the neck of the tumour. 

Pseudo Abscess, although dilating on coughing and disappearing on the patient assuming the horizontal posture, may be distinguished by its being seated in general more externally than a hernia, it also possesses more or less fluctuation, and is attended with symptoms of spinal disease. 

Part of the femoral vein, likewise receives an impulse on coughing and diminishes when the patient is seated in the horizontal posture, but on pressure being made below Poupart's ligament it quickly reappears, which is evident could not happen in the case of a hernia. 

Bibs and other tumours of the groin are distinguished by their general characters and history and by their being in general unattended by any abdominal disorder. So much attention cannot be paid to the precise situation which the neck of a femoral hernia occupies. It is under Poupart's ligament, between the bifurcation of the co-ridge on the one hand and the point where the femoral artery may be felt pulsating on the other.
The patient is to be placed upon his back, with the shoulders and head elevated. It is better to maintain the pressure gently for a considerable time, than to act with much haste and employ a greater degree of force in a shorter period. The thigh is to be supported upon the abdomen, and inclined forwards, with a view to relax the femoral arch; if it should be necessary the tumour is to be withdrawn from over the arch and the pressure on it directed backwards into the thigh. The replacement of the hernia being found through the mediums of the tarsi and its auxiliaries impracticable, an operation is to be undertaken with the view of dividing some part of the cranial canal, thereby widening the space through which the protruded parts may be reduced to the abdomen. Before going further let us enquire into the practicability and safety of making incisions into the cranial canal, at different parts of its circumference. As the hernia lies upon the spine, the posterior part of the canal may be excluded from consideration, as also the outer side on account of the position of the femoral arch, and the outer part of the anterior boundary on account of the presence of the epigastric artery.
in that direction. The only part of the cranial ring free of danger from an incision, in nearly all cases, are the inner boundary and the contiguous part of the anterior one. The occasional sources of danger are the risk of winding the urinary bladder when largely distended and the obturator artery, which, when taking its abnormal origin from the deep epigastric, in its course to the pelvis runs along the bursa and sometimes thorough more nearly along the inner margin of the cranial ring. In cutting into the pelvic part of the cranial we again run the risk of wounding the ischiatic cord.

The best of structure will almost invariably be found at the cranial ring.

Operation. Various incisions have been proposed for the relief of strangulated femoral hernia; the form of the incision however is of little importance provided that they are made in such a manner as to disperse freely the neck of the sac at its upper and internal part.

A simple vertical incision made be made along the inner border of the tumour, extending over the femoral arch, and if necessary a second one may be carried outwards over the tumour and
No. 39. Linton Meilin. The form of basin often suitable for Mrs. Meilin's mode of operating.
parallel with the femoral arch. If it be a large hernia the incisions need not extend over the whole tumour. After division of the subcutaneous fat, which will vary in depth in different individuals, we come down upon the fascia propria of the hernia, which may be distinguished by its membranous appearance, and the absence of any adipose tissue. As in the case of inguinal hernia the coverings are to be carefully divided upon the point of the forceps; being great caution in the opening of the sac, to avoid all risk of wounding its contents.

The after-treatment of the patient is to be conducted upon the principles as those already explained, with regard to inguinal hernia.

Umbilical Hernia.

The protruded intestine in this case pushes either through, or by the side of the umbilicus, the canal being straight through the abdominal wall. We find it most commonly in infants, and in women who have borne many children. The coverings are the skin, superficial fascia, a thin prolongation from the lumbar muscles of the abdominal opening, together with the fascia transversalis, subcutaneous fat and
Peritonitis. If the hemia is suddenly produced, the coverings will only consist of the integument and sac, the other structures being ruptured through.

Treatment. In children, the treatment consists in reducing the parts as soon as possible, so that during the natural development of the parts, the opening may become obliterated, and thus a radical cure effected.

After reduction, the tendency to protrusion is to be disposed, by placing a concave shaped coniuret over the aperture, and keeping this in position by means of strips of adhesive plaster. All exciting causes are to be avoided as much as possible, such as crying, etc.

In the case of adult, such simple means are not sufficient, the tumour is larger and less compressible. Compression is to be effected by means of a pad placed over the umbilicus, a similar one may also be placed upon the back directly opposite the fault. These are then to be kept together and in situ by means of a spring for securing the requisite degree of force.

When strangulated, the seat of structure will
be found at the margin of the tendinous opening in the abdominal wall. It will be
noticed by making a cruciate incision through the integument, and then cutting through it
wards or on any side. In reduction, compression is to be made directly backwards.

Ventral Hernia.

Herniations of this description are not uncommon. They may take place through almost any
part of the abdominal fasciae, principally through those openings through which arteries
and nerves pass. When it occurs low down, care must be taken, when operating for relief
when strangulated, of the epigastric artery. Radical cure will be found in this case
impracticable, therefore a strong compression will appear to be worn constantly over the head
of protrusion.

Perineal Hernia.

In this case, the intestine descends between the bladder and rectum of the male and
between the vagina and rectum in the female, causing a bulging in the perineum.
When this hernia in the female does not reach the perineum, but bulges into the vagina,
They have been espoused by operated on.
it is called vaginal. In the female it sometimes forms the cause of tedious labour.

**Phrenic or Diaphragmatic Hernia.**

In this instance we have the intestine taking place through the diaphragm. It may pass between the aorta and aorta, at other times between the aorta and vena cava. These cannot be relieved by any surgical treatment, and may not be known to have existed until they are discovered after death.

Obstinate or Hernia passing through the promontory, and Ischiatic through the ischiatic notch, are extremely rare. They do not admit of any accurate diagnosis, unless they are amenable to surgical treatment when strangulated.

Alexander Gallie