Thesis.

On.

Femoral Hernia.

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Femoral hernia is a protrusion of the viscera into the sheath of the femoral vessels.
As the relations of the parts implicated are important, a brief anatomical sketch of them may be given before commencing its description.

The first structure which calls for notice, is

- Pouparts Ligament

which in connection with the femoral hernia is named the femoral or crural arch.
It is a fibrous band formed by the union of the tendon of the external oblique muscle, and other aponeurotic structures, extending from the spine of the ilium, to the spine of the pubes and part of the pectineal ridge.

It is of considerable breadth and curves downward, the fascia lata is connected to its curved border, which accounts for the relaxation of it, and the aponeurosis of the external oblique undergoes, when the lower limb is bent. The small triangular portion attached to the pectineal line, is known as Gimbernat's ligament, its outer edge is concave, and sharp. It forms part of the inner boundary of the aperture,
through which this hernia descends, it is about an inch in length, and less than half an inch in breadth, being generally a little broader in women than in men, its strength varies in different bodies, and with its breadth the size of the opening, which receives the hernia will likewise vary.

2. The Superficial Fascia of the Groin.
It is continuous in every direction with the general subcutaneous tissue, and is separated more or less distinctly, into two layers, by the superficial vessels and nerves; the external layer is composed of loose texture, mixed with a variable quantity of fat and is adherent to the skin; the internal is membranous, devoid of fat, and adheres intimately to Poupart's ligament, by an intermingling of aponeurotic fibres, arranged horizontally below the ligament. the deeper layer is also closely connected to the edge of the saphenous opening, over which it is spread, receiving in this situation the name of "Pubic Fascia," from being perforated by the different vessels of some lymphatic glands lying over it.
The superficial arteries of this region are the superficial epigastric, which ascends over the middle of Poupart's ligament; the external pudic branches, two or three in number, passing obliquely upwards from the ischial opening, towards the pubis; and the superficial circumflex iliac, which pierces the iliac portion of the fascia lata, and is distributed to the integuments about the crest of the ilium.

The great saphena vein ascends along the thigh, and terminates in the femoral vein, about an inch or an inch and a half below Poupart's ligament; it is lodged in the superficial fascia, and perforates that part of the deeper layer which constitutes the subcutaneous fascia.

The Fascia Lata is situated beneath the superficial fascia, it envelopes the muscles of the thigh, and is divided superiorly into an iliac and a pubic portion. The iliac portion after emerging from beneath the inferior pectineus, forms a narrower band, which becomes gradually wider.
as it passes over the femoral vessels, forming what has been called the "fallopian tubes"; and in descending, its edge becomes crescentic, winds under the Saphena vein, and becomes continuous with the pubic portion. The latter ascending over the gracilis, adductor longus, and Pectineus, is attached inferorly to the iliopectineal line, and, passing laterally behind the sheath of the femoral vessels, to the border of the psoas muscle, divides into two layers, one of which adheres in front to the tendon of the psoas and iliacus muscles, whilst the other passes posteriorly, and becomes blended with the capsule of the hip joint. The fallopian process, and the crescentic portion on edge of the iliac part of the fascia lata, adhere closely to the anterior wall of the sheath of the femoral vessels, whilst the pubic portion in passing behind the vessels, has its fibers closely connected with those of the posterior wall of the sheath. The Saphenous Opening is that oval space—well defined at its superior, iliac, and inferior borders.
by the falciiform process, and crescentic edge of
the iliac portion of the fascia lata, but left
perfectly by the pubic portion — which is
covered by the cubiiform fascia, and
transmits the saphena vein, and the
lymphatics of the thigh and groin, to the
femoral sheath —

The femoral sheath

is a funnel shaped prolongation of the
internal abdominal aponeurosis, which
inverts the femoral vessels in their transit
between the abdomen and thigh.
Its anterior wall is formed by a pro-
longation of the fascia transversalis,
whilst its posterior is from the fascia iliaca.
At its upper part the sheath is broad,
but, as it descends, it becomes more closely
applied to the femoral vein and artery.
Assuming its funnel shape, it is at the upper
and inner part of this funnel, that the
absorbed vessels enter the sheath, giving
it the cubiiform appearance, this part
of the sheath is also much looser in texture,
than the portion, investing the artery and vein,
which is firm and unyielding.
The femoral sheath, as it descends beneath the crural arches, gradually becomes more and more attenuated, and is lost in the general filamentous envelope of the femoral vessels, a little below the entrance of the saphena vein. The upper and anterior part of the sheath adheres firmly to hypogastric ligament by an intermixture of aponerotic fibres. A similar union exists between the sheath and the saphena vein, and the plantar process, and limated edge of the fascia lata anteriorly, and its pubic portion posteriorly. The sheath is divided internally into compartments by septa; the spaces are three in number, the iliac compartment is occupied by the femoral artery, the middle by the femoral vein, and the pubic by lymphatic vessels, a gland, and more or less fat. It is into the last mentioned space that a femoral hernia descends.

The Crural Septum—

The subserous tissue in the neighbourhood of the femoral sheath, is loose and abundant, often loaded with fat, and sometimes condensed at the ring, forming a slight barrier so named.
The Deep Femoral Arch,
consists of a bundle of fibers whichspring
from the under surface of sartorius ligament,
outside the femoral vessels, and extend across
the fore part of the femoral sheath.

The Femoral Ring,
is a narrow opening, usually of sufficient
size to admit the end of the forefinger; it
is larger in women than in men, on these
sides the ring is bounded by very unyielding
structures. In front are the femoral arches;
behind is the hip bone covered by the Det.
muscle, and the pubic layer of the
fascia lata; on the outer side lies the ex-
ternal iliac vein, but covered with its
sheath, and on the inner side are Gen-
lemen's ligament, the deep femoral arch,
the fascia transversalis, and the conjoined
tendon of the internal oblique and transversalis;
these structures last mentioned presenting
a sharp margin towards the opening at
the inner side.

The Femoral Canal
extends from the femoral ring to the Sa-
phenous opening; it is rather less than
half an inch in length, its direction is vertical. Its superior aperture being directed upwards, and backwards towards the abdomen, its inferior aperture forwards and a little downwards. Its anterior wall is short, being formed by four parts: ligament, and the falciform edge of the fascia lata, the posterior wall is formed by the deep portion of the same aponeurosis, as it passes behind the sheath of the femoral vessels upwards towards the iliopectineal line.

The epigastric artery is closely connected with the femoral ring, lying above its outer side, varieties in its origin occur, and when it arises lower than usual it approaches nearer to the ring.

The Obturator Artery—when it follows its usual course it is remote from the locality of femoral hernia, but it not unfrequently happens that it descends into the pelvis at the outer side of the same opening, or immediately behind it, and in some rare cases the vessel turns over the ring to its inner side, an obturator venus may also have the same course.
In 500 dissections made by M. Cloquet... the obturator arterio... arise from the internal iliac... and from the epigastric or the femoral in 15%. The position of this vessel is most important... in operating for strangulated femoral hernia... as will be afterwards noticed.

I shall now proceed to describe femoral hernia... and first treat of its Development and Anatomical Characters. In this hernia the descent takes place through the crural aperture, on the inside of the femoral vessels, and through the sphenous opening of the fascia lata, as the hernial protrusion occupies the pubic compartment of the femoral sheath. It is separated from the femoral vein, by the septum between the middle and pubic spaces. It is also separated from the pudendal ligament by the anterior wall of the compartment, from the pubic portion of the fascia lata, where it passes up over the rectus muscle to be attached to the iliopsoas line, by its posterior wall... and from the crescentic edge of the iliopsoas ligament by the pubic wall...
When a femoral hernia is being formed, the protruded part is at first vertical in its course causing no visible tumefaction, being concealed by the inguinal ligament, and the false form process of the fascia lata, as it descends along the pubic commissure of the sheath it gradually loses its hemispherical form and becomes more cylindrical, until it approaches the semilunar edge of the fascia lata, when a slight fulness of the sheath becomes perceptible, more obvious when the patient coughs or otherwise exerts the abdominal muscles, as the protrusion increases, its further descent in the course of the vessels is prevented by the resistance offered by the semilunar edge of the fascia lata, which adheres firmly to the sheath of the vessels: it now bends forwards at the saphenous opening, experiencing this resistance there, passes through that aperture it pushes before it the sheath of the vessels and the subcutaneous fascia; within the canal the hernia is very small, being, constructed by the underlining structures which form that canal, but when it has passed beyond the saphenous opening, it assumes a globular
form, and enlarges in the loose fatty layers of the groin assuming a magnitude of one, two, or three inches in diameter. The neck remains of nearly its original size, and at this time, is narrow and directed downwards, as the tumour increases it expands pretty uniformly in all directions, except in some instances, where the bending of the thigh upon the abdomen favours its growth in a transverse direction, or where gravitation operating upon a large hernia, causes it slightly to descend upon the thigh.

It thus usually projects over the semilunar edge of the fascia below, and over parts ligament above, encroaching in the latter direction, upon the site of inguinal hernia. The size of femoral hernia is usually small compared with that of inguinal, but it may in some instances attain considerable size. The relations of the vessels to the sac may now be observed. The neck of the hernial sac is separated from the femoral vein, by the subserous tissue of the sac, and by the membranous partition which separates the public space
of the femoral sheath from the compartment containing the femoral vein, the epigastric artery, usually arises from the external iliac, about half an inch from the mouth of the sac, and at the distance of three or four lines above it; the portion of the sac, which lying under the pubis ligament, may be called its neck is generally about half an inch in length, its dimensions correspond to those of the cranial canal. The obturator artery from its irregularities bears important relations to femoral hernia. In all those instances in which this vessel is derived from the epigastric, the femoral, or the external iliac, it descends to the obturator opening in close proximity to the hernia, and either pursues its course along the iliac side of the mouth of the sac, free from all risk in being wounded in the operation for strangulated femoral hernia, or it winds over the mouth of the sac, and descends along the pubis side, exposed to great peril from the knife. The epigastric and obturator arteries have also frequently anomalous branches, traversing the site of femoral hernia.
which may be a source of danger in the operation.

The importance of irregularities in the origin and course of the obturator artery has led to observations being made by many eminent surgeons. From the united observations from inspection of Sir Astley Cooper, Dr. August and Mr. Guerin, it appears that the obturator artery was more or less directly derived from the external iliac artery in one fourth of their cases, and that it had normal origin from the internal iliac in the remaining three fourths. It is probable that this is a more frequent irregularity than exists in a small cases of femoral hernia; whereas the situation of the artery may probably have some tendency to prevent a protrusion from the resistance offered by its passing over the femoral aperture. The result of Sir Astley Cooper's investigation tends to confirm this opinion, for in 21 cases of femoral hernia which he dissected he found the obturator to have its origin from the external, or rather from the common trunk of these arteries as it arises from the external iliac—six times, being in the proportion of one to three and a half.
in a number of such irregularities, the artery even descends on the iliac side of the sac, and so is out of the reach of danger from the knife, this was actually its course in each of the six cases of Sir A. Cooke, above alluded to. Cases are recorded however where the vessels had a different, and more dangerous course. Dr. Barclay gives a case in which the trunk common to the epigastric and obturator passed over the mouth of the sac, and the latter vessel descended on its public side. An instance of the obturator running on the public side of the mouth of the sac, is also given by the late Mr. Dutton. The relative frequency in which the obturator takes its dangerous course is not precisely ascertained, but the possible occurrence of such cases must impress the mind of the Surgeon, with the importance of limiting his incision of the structure in femoral hernia, to the smallest extent consistent with the liberation of the protruded parts, and should the obturator be unavoidably divided, he must be prepared to act in this emergency with great calmness and promptitude.
A few instances have been recorded in which the hernia has descended in front of the femoral artery and vein, or to their iliac side, posterior to them. Mr. Clough has observed an instance of the hernia descending in front of these vessels, and the epigastric artery, ascending along the pubic border of the neck of the sac.

Hesselbach has seen the hernia in front of the vesel, as also an instance where the protrusion occurred on the iliac side of the vessels.

The coverings of the hernia are from within outwards: 1. The sac which is pushed before the protruded viscera, it is usually derived from the pouch of preperitoneum on the pubic side of the ligament.- 2. remnant of the umbilical artery. 3. after the sac the hernia passes before it the septum conusale. 4. next an elongation from the sheath of the femoral vessels, the two last mentioned structures constitute a single very thin covering known as the "fascia profunda" of the hernia (Cooper's fascia) glossy superficial covering superficial fascia and integuments. Considerable variety is observed in the condition of these covering
the hernia may be protruded through an opening in the sheath, which therefore in that event does not contribute to form the fascia propria. When the tumour is recent and small these coverings present but little deviation from their natural structure; but in large herniae the "fascia propria" may be closely adherent to the structures external to it, and so divided in conjunction with them at the time of operation, the subserous tique is often thicker than the sac in small hernia, in large recent herniae it is thinner, in old herniae it may be divisible into several layers, from interstitial deposits, and meshes of fat. The usual contents of femoral hernia are, intestine, most frequently the ileum often accompanied with omentum.

The cause of femoral hernia may be considered as predisposing and exciting: the former have been referred to a naturally greater size of the openings at which they protrude, to a weakness and relaxation of the margins of these apertures; and to a preternatural laxity of the peritoneum, as this hernia is more common in females.
the predisposing causes at work there are found to be, the greater breadth of the pelvis in them, its being traversed by smaller muscles, the consequent increase in the width of the female apertures, and probably also to the general relaxation of the abdominal walls after pregnancy - In the male in advanced age the shrinking of the psoas and iliacus muscles, by leaving the femoral arch less occupied, as well as the general relaxation of the tissues at that period may favour the production of the disease.

The latter class or exciting causes of femoral or other abdominal herniae, are mainly due to the pressure exerted on the viscera by the action of the respiratory muscles. The diaphragm contracting pushes the contents of the abdomen against the relaxed abdominal muscles, which subsequently contract, and carry the viscera against the relaxed diaphragm. The strength of the walls, and the pressure of the viscera, when the contents are in their natural condition, are so admirably adapted to each other, that, under the ordinary action of the respiratory muscles, and in the natural
condition of the walls, protrusions do not occur. When the walls are naturally weak, the ordinary action of these muscles is sufficient to produce the disease; and even when they possess their natural strength, excessive action of the same muscles is a frequent cause of hernia. The latter is more especially observed in the violent simultaneous action of the Diaphragm and abdominal muscles, which constitutes the act of straining, and is exemplified in those forcible efforts to evacuate the rectum, or bladder which are made by persons affected with stricture, enlarged prostate, stone in the bladder, and constipation; in the exertions attendant upon difficult parturition, playing on wind instruments, and lifting heavy weights; and in the powerful and irregular acts of vomiting, coughing, jumping, running, amongst other exciting causes of hernia, are, external pressure from articles of dress, as stays and belts, and from instruments used in some mechanical employments; internal pressure from deposition of fat, effusion of fluid from tumours, and from distension of the bladder,
Statistical records show a great increase of femoral hernia after the age of twenty in women, this tends to confirm the opinion that the relaxed state of the abdominal walls after repeated pregnancies is a predisposing cause, and the violent expulsive efforts of parturition are exciting causes of very many of the femoral hernias which occur in practice.

Statistics of Femoral Hernia:

a. As to the relative frequency in the sexes. This kind of hernia as has already been stated, is much more frequent in the female than in the male. The following extract from the report of the new London Rupture Society shows this—of 346 femoral hernias, 210 were in females, the remaining 136 being in males.

The observations of M. J. Bloquet likewise confirm this, although they do not show such a preponderance of numbers in the female. In 134 of his cases of femoral hernia, 79 of these were in males, the remaining 55 being in females.

b. The relative frequency of femoral hernia at different ages
Prior to the age of twenty, this hernia is extremely rare, for Astley Cooper had only seen three instances of it, before that period, they occurred respectively at the ages of seven, eleven, and nineteen years. After 20 years until advanced age, femoral hernias appear to originate equally at all periods of life.

**Symptoms and Diagnosis.**

There are three different states in which a femoral hernia may exist, each requiring a separate notice of its diagnostic marks.

Reducible femoral hernia is generally attended with an indolent swelling at the inner part of the bend of the thigh, fixed at its basis, either soft, or more tense and elastic, with no change in the colour of the skin, which is freely movable over it. It often appears suddenly after a violent effort, increasing in consequence of exertion, and diminishing or disappearing on pressure or in the recumbent posture; an impulse being felt when the patient coughs, and the intestinal functions disturbed, our diagnosis is made sure, if we find that
the swelling varies in size, being smaller in the recumbent position, larger in the erect posture, or when the patient holds his breath; if it is large and tense after long standing, much exercise or straining, after a meal, soft and small in the morning before taking a meal, ales if there has been since its appearance colic, constipation or vomiting, and a rumbling sensation in the tumour on its return.

As the space through which the hernia descends is very small, and does not admit of much enlargement in any direction, the swelling is generally small, and sometimes so remarkably so, as to be very readily overlooked.

Mr. Malgaigne directed attention to the mode of detecting femoral hernia in its earliest stage - when it is merely a small hemispherical protuberance in the pubic compartment of the femoral sheath without external tumour - the method of procedure is after the following way: whilst the pulp of the forefinger is firmly applied immediately below popliteal ligament on the pubic side of the femoral artery, the patient must be directed to cough, when if hernia exists, the finger will be
repelled by a pressure from within, in order to confirm the value of this trait. M. Malgaigne made observations on the living body in persons of both sexes and all ages, to ascertain if the viscera did not in their natural position during the act of coughing. Communicate an impulse below the femoral arch. In only a very small proportion of these cases was he able to recognize the impulse, and in these instances, he inferred that it was not a natural condition since it existed on one side and not on the other. His experiments on the dead body also confirm this, and he observes that as long as the peritoneum does not project behind the femoral ring no impulse is perceptible externally below the femoral arch.

The symptoms of the case may sometimes inform us whether the contained parts are intestine, that is "enterocele", or omentum, "epiplocele". If the surface of the tumour be uniform; if it be elastic to the touch; if it become tense and enlarged when the patient is troubled with wind; holds his breath, or coughs; if, in the latter case, the tumour feel as if it were inflated; if the first return with a
peculiar noise, and pass through the opening at once, the swelling is an Enterocele.
If on the other hand, the tumour be compressible, if it feel flabby, and uneven in the surface; if it return without any noise, and pass up very gradually, the case may be considered an Epipliocele.
If a portion of the contents slip up quickly, and with noise, leaving behind something which is left easily reduced, the case is probably an Entero-Epipliocele.
Irreducible femoral hernia.
The diagnosis of this is more obscure, than that of the reducible, on account of the absence of one of the most characteristic symptoms of the latter, namely, the disappearance of the tumour under moderate pressure, or during recumbency, and its reappearance in the erect posture, and under muscular efforts. Although the tumour formed by an irreducible hernia, may not entirely disappear under pressure or during recumbency, yet in many instances, it undergoes obvious variations of size, from change of position or compression.
and, if the early history of the case be investigated, it will frequently be ascertained that the tumour originally exceeded during recumbency, or could be returned into the abdomen by moderate pressure; attention to this with the other characteristics already given of hernial tumour will generally suffice to distinguish it: when this form of hernia becomes inflamed there is considerable difficulty in distinguishing it from strangulation. The chief points of difference are, that in inflamed hernia, the pain in the first instance is referred to the body of the tumour, while in strangulation, when the hernia is large, the site of structure is more particularly the seat of pain. Again in inflamed hernia, the ring is generally free from tension, whilst the swelling itself is tense. When the urinary bladder, the cecum, and neighboring part of the colon, and the sigmoid flexure of the colon are protruded through the abdominal rings, retaining their pattern and lateral connections, they are incapable of reduction. The reduction of hernia in other cases is rendered impracticable, by increased volume of the hernial contents, as in
thickening and enlargement of the mesentery and omentum, postnatal and connections of the parts to each other, to the hernial sac, and membranous bands of adhesion crossing the cavity of the latter. These adhesions generally occur in old hernias, and for the most part probably proceed from the occasional irritation which may be derived from pressure of the ring.

Strangulated hernia.

A hernia is said to be strangulated when the fecal flow is arrested in the tumour, or the circulation in the bloodvessels of the protruded part materially impeded by constriction of its neck. The ordinary symptoms of a femoral hernial tumour have been already noticed, when strangulation takes place its symptoms are, a feeling of tightness, as if from a cord drawn across the upper part of the belly; the tumour which was before indolent becoming painful; the pain most acute at its strangled portion, and extending from that situation over the rest of the swelling and abdomen; these parts becoming at the same time tense and swollen. The pain which at first is not constant becomes afterwards fixed, and is
increased by external pressure, coughing, and sneezing. The evacuations are entirely suppressed, nausea and vomiting ensue, the contents of the stomach, and those of the intestines down to the structure being rejected. These symptoms which often last for a considerable time, are accompanied by more or less derangement of the whole system. There is great anxiety and restlessness, a small, quick and hard pulse, with a disposition to cold sweats, and a cold state of the extremities. The occurrence of 

The distinction of strangulation from affectious which may resemble it is very important. The intestine included in a large reducible hernia may be expelled with colic, and thus give rise to constipation and vomiting, or such an attack may render a reducible hernia incapable of being replaced; particularly if the bowels are much inflated.
the real nature of these cases becomes apparent by colic, and oily purgatives producing stools again the first appearance of a hernia may be seen through vomiting and pain, and the same symptoms may be exhibited in an old case, after the patient has taken much exercise, in consequence of the irritation excited by the protruded visceræ in the contents of the abdomen, in this case also stools may be easily produced by purgatives. The most important complication of all is, when a patient with a hernia suffers from nephritis, when an operation performed on the supposition that the symptoms arose from strangulation of the hernia would be very injurious. When called to a patient labouring under the symptoms of nephritis, a rigid examination of the site of hernia should be instituted, and more particularly in the female, who is more liable to femoral hernia, and may be led to concealment by false delicacy; a very small portion of intestine not forming any external tumour, may by its incarceration cause the symptoms. If these latter have appeared suddenly and
under circumstances which might have caused a hernia, if the pain has been first felt about the ring or crural arch, and if pressure in these situations increase it; and lastly, if the patient shortly before, had been in perfect health, there is strong reason to suspect the presence of a hernia. On the other hand, we may feel pretty sure that the symptoms are not produced by strangulated hernia, and that the pain results from an intestinal cause; when the pain is felt in the abdomen and not in the swelling, which continues soft, while the belly is inflated, tense, and hard. The attack is also sudden and not preceded by any of the occasional causes, which could effect the hernia, and the ring is free. The affection laterally extends to the swelling which becomes painful and tense, but it appears later here than in the belly, and does not proceed to so great a degree.

I shall now speak of femoral hernia more particularly in regard to its diagnosis from other diseases.

Boas Abscess.

Reducible femoral hernia may be
confounded with those abscess pointing under the suprapubic ligament, the following marks may distinguish them. The contents of the abscess are fluid; hence fluctuation may generally be perceived, and the swelling does not retire as a hernia does in the recumbent posture, the premonitory symptoms of abscess there, as pain in the loin, swelling, and the absence of intestinal affections, as well as the frequent evidence of spinal disease, which has led to the abscess being formed, serve to distinguish the two complaints.

A bulging base of the femoral vein projecting through the saphenous opening, may be mistaken for femoral hernia. They may be distinguished thus, reduce the swelling by pressure in the recumbent posture, and then press firmly on the abdominal outlet, if the case be one of hernia there is no reproduction of tumour, if it be war the swelling quickly reappears.

Enlarged lymphatic glands situated over or within the femoral sheath sometimes closely simulate an irreducible or strangulated femoral hernia, and
require a very careful diagnosis. They may generally be distinguished by the greater mobility of the swollen glands when situated external to the sheath, and by their often admitting of being grasped by the fingers, and elevated from the part beneath, when they are within the sheath their distinction is more difficult, but may be assisted by the absence of intestinal affections; the glands however may become suddenly large and painful, in consequence of the strain from a violent effort, in which case, sickness, vomiting and constipation, are not infrequently induced by the irritation hence follows a valuable rule, that, in all cases of doubt, when no other means afford relief, it is the bounden duty of the Surgeon to cut down upon the swelling and ascertain its nature.

A femoral hernia may be confounded with the inguinal form. It is only when distinguishing between a Bulbocele and a femoral hernia if moderate size that a difficulty may occur. The position of the femoral hernia in most cases is characteristic.
The tumour is upon the thigh, and a narrowed part, or neck, may be felt sinking into the thigh near its middle. Besides the femoral arch is usually to be traced above this hernia, while that band is lower than the mass of a tumour lodged in the inguinal canal. At the same time the inguinal tumour covers the femoral arch, and cannot be withdrawn from it like a femoral hernia, when it has turned over that cord. Some assistance will be gained in a doubtful case from the greater facility with which the tumour emerging at the saphenous opening admits of being circumscribed, in comparison with the bulimations, which is bound down by a more resistant structure—the aponeurosis of the external oblique muscle.

The treatment of femoral hernia.

From this head we must speak of that adapted when the hernia is reducible, irreducible, and strangulated.

Reducible femoral hernia.

The treatment here is for the most part of a palliative nature; tensions rarely, if ever, produce a radical cure of the disease. The sides of the aperture appear from their
structure, to be less capable of contraction, and they are certainly less susceptible of approximation from external pressure. The truss should be carefully worn, as, by its judicious application, we can greatly mitigate the distressing symptoms of an unsupported hernia, as well as diminish the risks of strangulation.

The truss should not have a large pad, but, by the action of the pectineus muscle on one side, and the psoas and iliacus on the other, it is apt to be elevated and allow the hernia to escape; it is important also that the pad should not advance so far as to press on the pubes, as by that a great portion of its force would be removed from the part, where it ought to be more especially concentrated. The cushion of the truss should be more convex than that for inguinal hernia, and an additional strap round the thigh may be useful in preventing its displacement.

The irreducible form is not so frequently met with in this form of hernia. When the hernia is interstitial the ordinary femoral trusses may be employed, but with a spring of moderate power, and...
a pad of slight convexity. The support from such a truss is often productive of great relief, and by its continued use, the hernia will sometimes gradually recede into the abdomen, either from elongation of the adhesions, or inversion of the sac. If the hernia protrude externally, its future increase may be prevented in some measure, by the compression of a suspensory bag; a hernia in this condition is very liable to become strangulated, when it will require the treatment, to be given under the next head.

The strangulated form.

From the smallness of the opening through which the hernia descends, and of the tumour itself, a femoral hernia very easily becomes strangulated, and the closeness of the tissue diminishes the chance of reduction by any means but the operation, and the great pressure which the parts experience, renders delay very dangerous; therefore a hernia in this state, demands, the utmost skill and promptitude on the part of the Surgeon. It is the employment of the "Saxis" 2 in the operation for the removal of the constriction when the truss is unwieldy.
There are two great classes of strangulated hernias. Those which are preceded by inflammatory action in the hernia — 2 those in which this action follows on the constriction otherwise produced; the latter are by far the majority.

In the treatment of the former, the cause of the constriction, if possible, must in the first instance be removed, by leeches, applied to the immediate vicinity of the tumour, and other antiphlogistic enemas; when by such means the bulk of the tumour has diminished, and the parts have also acquired a better tolerance of manipulation, then the reductive process is to be applied, without risk of doing harm, and with a good prospect of proving successful.

In the second class of cases, the state of matters is reversed. The constriction has caused the inflammatory action, and, only after removal of the former, can we expect to treat successfully the latter. — The Sachs.

Its employment having been decided on, the surgeon, if possible, takes his place on the right side of the patient, who, should be placed near the edge of the bed, with the shoulders elevated, the thigh bent nearly to a right
angle with the trunk, the precautions of
turning the limb inward, and carrying
the knee over the opposite thigh, are partic-
ularly necessary in order to relax these parts.
In our attempts to reduce the hernia by means
of the hand, the pressure must be accommodated
to the peculiar course in which the parts descend.
The whole of the tumour is to be grasped by
the thumb, and fingers of the right hand,
and by gentle, steady, and prolonged comp-
ression, the distended veins of the protruded
omentum are emptied of their blood, and the
intestines of their contents; the pressure
must first be directed downwards and
backwards, so as to push the swellings
off the surface of the peritoneal ligament, and
if the parts recede under the application of
the force in this direction, it should be
continued upwards in order to make them
pass upwards under the crural arch into
the abdomen, avoiding all violence.
During the employment of the tare it must
be remembered, that, the Smallnes of the
mouth of the Sac, and the consequent tightness
of the structure, diminish the chance of
effecting a replacement, and consequently much time should not be wasted in attempt of this description. When the abdomen is tense and swollen, and there is tenderness of it, and of the tumour under pressure, the task should not be persevered in, but immediate recourse had to the operation with the knife, which proceeding the history of surgery amply proves to be followed by success, in least proportion to the gentleness and short duration of the efforts previously employed, in the attempt to reduce the strangulated intestine by the task.

In the event of the task failing it is obviously proper to use means which may affect it, these are "Vesication." The warm bath, "Antimony," "Opium," Enemata; Cold applied externally, the use of the Rectum tube, lastly "Chloroform" which is very often a most useful agent.

The choice of these means for promoting reduction must be determined by the circumstances of the case. The most available and most generally used are - blood letting, local in all the inflammatory cases, and general in the few cases which admit of it; the warm bath, "Opium," Simple enemata, in large quantity;
perhaps the long titles, in the chronic and
uninflamed cases always the application of cold.

The Operation
The tasis and its auxiliaries having been fairly
tried, and the herna still remaining unreduced,
it is of the utmost importance that the operation
for the removal of the structure, upon the strang-
ulated bowel, should be delayed no longer,
for it is very generally admitted, that a fatal
amount of injury is much earlier inflicted
upon the tunics of the intestine, by the structure,
in cases of femoral herna, than in any other
kind of rupture.

In performing the operation, instead of a simple
incision, one in the figure of the letter I, is preferable.
The transverse part of it should be as high as
the neck of the swelling, that is, close to posterior
ligament, and is easily effected by pinching up
a fold of the skin, and dividing it by transfixing
the back of the knife being turned towards the
Sæc, the next end may be safely made from the
centre of this incision downwards to the same
depth, &c.; having laid aside the flaps, the
investments, which the Sæc receives from the
superficial fascia, and the "fasca profunda" are
in the next place to be divided, either with
the hand unsupported, as is recommended by
Scarpa and Lister, or upon the director which
is to be introduced, under them, after pinching
up a small fold with the forceps, and making
a slight horizontal cut with the scalpel.

The next step in the operation is the division
of the subcutaneous tissue next the sac, which it
must be remembered may consist of several
layers, the greatest care should be taken in
dividing this, so as to avoid wounding the
Sac, and its contents.

The Sac having been carefully exposed, in many
cases it is necessary to open it, which may
be accomplished by holding up a small
piece of it between the fingers, or the blades
of the forceps, taking very great care to exclude
any portion of its contents, and an opening
cautiously made with the scalpel held ho-
izontally. The director, or the probe pointed
distingly, is then to be introduced into the
opening, between the inner surface of the sac
and intestine, and the former laid freely open,
more especially in a direction upwards,
towards its neck; in opening the sac.
the operator should be particularly careful, to elevate the layer he wishes to divide, at the fundus or most projecting part of the bag, as there is here most fluid between it and the enclosed intestine.

The next step is the division of the structure which has been very much discussed - the direction of the cut now generally chosen by surgeons is obliquely upwards and inwards. The seat of stricture may be superficial or deep - the former formed by the crescentic portion of the bursal arch at its inner and anterior part, felt tight, on the inside of the tumour neck, while the fingers point is yet at some distance from the actual rim of the pelvis. This resistance is divided in the first instance by a probe pointed bistoury, slid lightly along the finger, and afterwards having its points edge directed upwards and inwards. Dilatation is next made with the finger and, on withdrawing it, reduction may be effected readily. If not the finger is re-introduced, and pushing it upwards, Simons' bennet's ligament is felt tight and resisting on a higher level than the former set.
of construction, it is divided in a similar way, merely making a notch in the edge of the ligament, and dilating with the finger. The structure having been divided obliquely downwards and forwards, the contents of the sac must now undergo a strict examination to determine whether they may or may not be reduced.

If the contents be found merely congested, the hernia is unhesitatingly reduced; if it show signs of plastic cavitation on its surface, it may still be reduced, but of course with a less favourable prognosis; if the contents show different colours, dark purple, greenish, or ash coloured, friable, and evidently passing into gangrene, on no account must it be reduced. The fatal focal septicisation must ensue; if omentum be found dark, red, and emphysematous it too must be left to slough in its outward site, in either case however taking as much care, to free the neck of the tumour, by division of the structure as if the whole were fit for reduction. In the case of gangrenous omentum, we may either cut it away as far as is necessary,
any vesels that require ligature being tied, and return all within the abdomen, or after cutting away the gangrened portion, leave it impacted in the abdonimal outlet, where it may become permanently fixed and prevent further intusuction.

When the intestine is found by its soft consistence and fetid odour to be in a modified state, any attempt at reduction would be highly imprudent. Since the patient's only chance of escape from fatal effusion depends upon lymph being thrown off and around the mouth of the sac.

If the state of the contents in examination warrant the reduction of the hernia, it may be effected in the following way; the position of the lower limb should be flexed upon the trunk, and rotated inward, so as more completely to relax the erural arch; at the same time that great care is taken to handle the intestine, with extreme gentleness, if both bowel and omentum have been protruded, the former should be returned first. Before finishing, the operation, the extremity of the little finger should be introduced.
into the neck of the sac, in order to ascertain with certainty, that the hernia has been fairly reduced into the belly.

In all cases of doubt, as to the viability of the strangulated parts, reduction should be at least delayed.

When the intestine is discovered in a matted state, the only interference must be to lay the gut freely open, or leave it as found, after which a soft poultice may be applied to the part.

After the operation, unless circumstances should require the wound to be kept open, its edges ought to be drawn together by stitches, and have a thick compress of folded lint, supported by a bandage, applied over them.

Treatment after the Operation

In successful cases the patient experiences relief almost immediately after the operation, in a few hours. Oftious evacuations show that the mechanical obstruction is removed, and the functions of the bowel restored.

Should symptoms of inflammation supervene, "rest," recumbency; antiphlogistic regimen; "leeching," camphor and opium, and tonics, etc.
must be related to, in all cases after reduction, either by the tonsil, or division of the structure, pungatires must be withheld, until a considerable time after the operation. Reproduction of the descent should be guarded against by keeping the compress accurately applied, and avoidance of the ordinary exciting causes. If reproduction unfortunately take place again, replacement must be very carefully effected.

After evacuation, a well made truss should be worn, and the precautions observed of having it fitted properly, before the patient leaves the recumbent posture, gets out of bed; indeed, it can hardly ever be dispensed with afterwards, without danger.

In the case of a sloughing hernia, a discharge of the intestinal matters always ensures for a time through the opening thus established in the gut, the cavity of the sac gradually diminishes, its refuse contracts, the intestines surrounding it become calloused, and a preternatural tonus is formed.
I shall now conclude this imperfect sketch of my subject, by merely alluding to the operation suggested by Mr. Gay, which has been reported to have been successfully performed in several instances. Its details, are minutely given in his elaborate work on femoral hernia; it is said to be applicable to all outward forms of strangulated hernia. The principle consists in reaching the seat of structure when external to the sac, by a small incision made through healthy structure, and in such a situation, that the hernial mass shall not be injured or disturbed thereby. The principal objections which have been urged against Mr. Gay's operation, are the dangers which we bring about in returning the contents of the hernial sac without an examination of its contents, as to their actual condition. In defence of his operation Mr. Gay contends that the circumstances attendant upon, and following the act of strangulation, with the previous history of the individual, would assist much in determining whether the sac should be opened, for any purpose, in connection with its contents or not.
Objections to this mode of procedure, as a general rule, have been brought forward, as in the first place, the difficulty or rather impracticality of safely dividing a tight structure, without the assistance obtained, from introducing a finger into the sac, as a guide for the knife. Secondly, the insufficient of presume to reduce the protruded parts, unless the orifice through which they have escaped, be rendered very fine indeed, so long as it operates through the medium of fluid contained in a bag. Thirdly, the fear of returning the sac along with the vesica, in which case, strangulation may still be maintained by its narrow neck: Fourthly, the ground for believing, that, the neck of the sac is in general much concerned in causing the strangulating contractions, so as to require division no less than the fascial structure itself, and lastly as before mentioned, the chance of returning the intestine in a state improper for reduction, or of being foiled in doing so by adhesions, or other marked structural changes, requiring free inspection, and the use of the knife for their removal.
Although no one seems to doubt that there is a marked diminution in the very high mortality resulting from operations for strangulated femoral hernia, as generally performed, when we can avoid opening the sac. Yet the above named objections deserve a weighty consideration, and tend to limit very much the number of cases, in which this plan of operation, namely, without opening the sac, can be followed with safety.

Finis.