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PROBATIONARY
SURGICAL ESSAY
ON
INGUINAL AND FEMORAL
HERNIA ;

SUBMITTED,

BY THE AUTHORITY OF THE PRESIDENT AND HIS COUNCIL,
TO THE EXAMINATION OF THE
Royal College of Surgeons of Edinburgh,

WHEN CANDIDATE

FOR ADMISSION INTO THEIR BODY,

IN CONFORMITY TO THEIR REGULATIONS RESPECTING THE
ADMISSION OF ORDINARY FELLOWS.

BY

THOMAS MOLISON, M. D.

SURGEON,

EXTRAORDINARY MEMBER OF THE ROYAL MEDICAL SOCIETY, AND
MEMBER OF THE MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

MARCH 1822.

EDINBURGH:

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1822.

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PROBATIONARY
SURGICAL ESSAY

INGUINAL AND TESTICULAR
HERNIA

BY THE AUTHORITY OF THE HONORABLE SOCIETY OF SURGEONS
IN THE CITY OF LONDON



BY
THOMAS MORTON, M.D.

MARCH 1851

LONDON: PRINTED BY...

1851

TO THE
HON. LORD GILLIES,
THIS ESSAY
IS INSCRIBED,
WITH SENTIMENTS OF THE
HIGHEST RESPECT AND GRATITUDE,
BY THE
AUTHOR.

TO THE
HON. LORD CHILLES

THIS ESSAY

IS INSCRIBED,

WITH SENTIMENTS OF THE

HIGHEST RESPECT AND GRATITUDE,

BY THE

AUTHOR.

F. H. Ramsbotham Esq^r
from his friend
The Author

REMARKS

ON

INGUINAL AND FEMORAL HERNIA.

IT being incumbent on me, as a Candidate for a Fellowship of the Royal College of Surgeons, to deliver a Probationary Dissertation on an anatomical or surgical subject, I have for that purpose selected a disease, which, from its frequent occurrence, as well as the difficulties in treating it, may justly be considered as one of the most interesting.

Under the skin, cellular membrane and fat of the lower part of the abdomen, is situated the Fascia superficialis, spread over the tendinous expansion of the external oblique muscle; superiorly it is not very distinct, but becomes stronger and more compact as it approaches Poupart's ligament, to the outer and under edge of which it is only

Fascia superficialis.

intimately connected *; from whence it proceeds downwards, covering the upper portion of the fascia lata of the thigh. Its fibres do not seem to follow any particular direction, but are much interwoven, except immediately under Poupart's ligament, where they more particularly pass downwards and inwards, following the course of this ligament. The fascia of each side unite on the linea alba, and are intimately connected with the cellular substance of the pubis, and likewise send a portion to invest the cremaster muscle.

Tendinous
aponeurosis
of the exter-
nal oblique
muscle.

The muscular fibres of the external oblique terminate on the abdomen in a broad tendinous aponeurosis, extending downwards and inwards; the upper and inner portions uniting with their fellows on the linea alba: the lower and outer are inserted into the anterior superior spinous process of the ilium, from whence they proceed forwards and inwards to the tuberosity of the os pubis; the inferior edge, between the ilium and tuberosity of the pubis, seems to be reflected on itself, to form the ligament of Poupart. About an inch to the outside of the tuberosity of the pubis, the fibres of the aponeurosis of the external oblique diverge: the under portion going to the tuberosity, to assist in forming the thick inferior grooved pillar of what is called the external abdominal ring: the upper portion, or superior pillar of the ring, is much thinner and weaker; its fibres passing to the symphysis, and into the opposite tuberosity of the os pubis, so as to intersect its fellow. At the insertion of the two pillars into the pubis, many fibres of each approach and intermingle, which narrows the ring inwardly; whereas at the outer angle it is rounded off and strengthened by superficial fibres which arise from Poupart's liga-

* Vide Note A.

ment, proceeding inwards and upwards. These fibres are much scattered, and sometimes scarcely to be seen, but always strongest at the outer angle of the external abdominal ring.

To the lower and inner border of Poupart's ligament, there is connected a falciform process, which commences by a narrow edge about an inch to the outside of the tuberosity of the pubis: it soon becomes broader, extending backwards, and slightly downwards, to be inserted into the crista of the os pubis. This ligament goes by the name of Gimbernat, and occupies a triangular space, having its anterior and superior edge connected with the inferior and inner border of Poupart's ligament; its apex directed towards the tuberosity of the pubis; and its internal border inserted into the crista pubis, or upper ramus of the pubis, with its sharp concave edge directed downwards, outwards and backwards.

Gimbernat's ligament.

It is of consequence to know the particular situation of the inferior border of the internal oblique, which lies posterior to the tendon of the external. Its inferior fibres arise from the outer part of Poupart's ligament, to the level of the internal abdominal ring, from whence they proceed inwards and slightly downwards, terminating in a tendinous expansion, to be inserted into the pubis. At the external edge of the rectus muscle, this aponeurosis divides into two layers: the anterior, which is strongest, unites firmly with the aponeurosis of the external oblique, and passes anterior to the rectus; the posterior unites with the aponeurosis of the transverse, and passes behind;—the junction of these tendons forming what is called the Linea semilunaris.

Internal oblique muscle.

From the inferior border of the internal oblique, a few muscular fibres are detached, called the Cremaster, which descends anteriorly to the spermatic vessels within the ingui-

Cremaster muscle.

nal canal, and covers them as they proceed to the testicle * ; but these vessels in some particular instances have been found to pass between the fibres of the lower edge of the oblique, when they get embraced by the cremaster †. I have seen the cremaster rise from Poupart's ligament quite unconnected with the muscular fibres of the internal oblique.

Transverse
muscle.

Directly behind the internal oblique lies the Transverse, the inferior fibres of which likewise arise from the outer portion of Poupart's ligament, but do not descend so far, and pass horizontally inwards, over the upper opening of the inguinal canal, to be inserted by its aponeurosis into the upper part of the os pubis, behind the upper pillar of the external ring, and into the linea alba, along with the posterior aponeurosis of the internal oblique. Frequently the transverse at its lower edge is so intimately connected with the internal oblique, that it is altogether impossible to separate them, which has led some to believe that this muscle, in particular instances, may give origin, in common with the latter, to the formation of the cremaster.

Fascia
transversa-
lis.

Immediately behind the transverse muscle, and as high up as the inferior border of the diaphragm, may be observed the scattered fibres of the commencement of the Fascia transversalis ‡, which form a pretty strong membrane at the lower part of the abdomen, where it is inserted into Poupart's ligament. Downwards and inwards it is of the greatest strength, and unites with the external edge of the tendon of the rectus muscle of the abdomen, where it sends an insertion into Gimbernat's ligament, which, in

* Vide Note B.

† CLOQUET, *Recherches Anatomiques sur les Hernies de l'Abdomen*, p. 37.

‡ CLOQUET, p. 25.

most subjects, is formed of two distinct layers, easily separable superiorly, but very intimately connected inferiorly, where they are inserted into the crista pubis*. At the internal abdominal ring, the fibres of the fascia transversalis separate for the passage of the spermatic vessels, which it “surrounds with a cellular sheath, easily separated from the neighbouring parts, and which accompanies the cord to the superior part of the testicle, where it disappears on the exterior cellular substance of the tunica vaginalis.” “In the inguinal canal, this membranous sheath is covered by (the inferior fibres of the internal oblique, which descend before it, forming) the cremaster. In the greater number of cases, these parts can be easily enough separated. Sometimes, however, the sheath of the cord adheres so intimately to the cremaster, and to the cellular substance surrounding the ring, that it becomes impossible to disunite them †.” We must not confound this membranous sheath with the loose cellular substance within, which unites together the spermatic vessels, and which arises from the outer surface of the peritoneum; for, on making an opening into the sheath, we can force in air, by means of a tube, and so distend it, as may convince ourselves that these parts are distinct, although slightly connected with the spermatic cord throughout its course ‡.

The internal abdominal ring, through which the cord passes, is situated a little to the outside of the middle of Poupart's ligament, going downwards, forwards and inwards to the pubis, in a kind of groove between the tendon of the external oblique and the fascia transversalis. In following this course, it first passes under the inferior edge of the transverse muscle, next the internal oblique, and,

Course of the Spermatic cord.

* CLOQUET, p. 60.

† Ibid.

‡ Ibid. p. 26.

after having descended about an inch and a half in this oblique direction, gets exterior to the tendon, forming the external abdominal ring.

Fascia lata.

Posterior to the fascia superficialis femoris, lies the Fascia lata, which covers the anterior part of the thigh and great bloodvessels, and ascends, to be inserted into the under edge of the whole of Poupart's ligament, and into the pubis. Between these two insertions, this fascia forms a duplicature immediately under the termination of the saphena vein, which includes the superior portion of the femoral vessels. The anterior part of the fascia lata, which lies anterior to these vessels, and of course to the duplicature which passes behind them, forms the crescentic arch, on the inside of the femoral vein*. The superior fibres of the arch pass upwards and inwards, to be inserted into the inner and deep-seated border of Poupart's ligament †. The duplicature commences inferiorly with a rounded apex, and proceeding upwards on the pectineus, unites with the fascia iliaca; internally it goes to be inserted into the pubis; externally it passes posterior to the femoral vessels, but anterior to the crural nerve, and joins the anterior portion of the fascia lata which forms the crescentic arch ‡. The femoral vessels within the fold of the fascia just now described, are surrounded by a sheath of tendinous or dense cellular substance, derived from the fascia iliaca and lata, by which they are intimately connected to the neighbouring parts.

Fascia iliaca.

From the tendon of the psoas parvus, and from the anterior surface of the iliac and psoas magnus muscles, arises

* Sometimes the crescentic arch is directly anterior to the femoral vein, or even external to it.

† Vide Note C.

‡ Vide Note D.

the fascia iliaca. Internally it passes over the brim of the pelvis, and descending within this cavity, gives a general covering to the parts. Externally it is inserted into the inner crista of the ilium, between the iliac and transverse muscles, as likewise into the external half of Poupert's ligament; or, as sometimes happens, can be traced reflected on the anterior part of the abdomen, behind the fascia transversalis. Immediately on the external side of the iliac artery, the connection of the fascia iliaca with Poupert's ligament ceases, by a concave edge directed inwards; and between this and Gimbernats's ligament it lies behind the femoral vessels, and passing downwards, unites with the duplicature of the fascia lata covering the pectineus muscle.

The duplicature of the fascia lata, through which the femoral vessels pass, has been called the Crural Canal; but there exists a small space between the sheath of the femoral vein and Gimbernats's ligament, where, on looking down within the abdomen, may be frequently observed a slight depression. It is here where femoral hernia occurs, passing downwards and forwards. In the natural state, this passage is filled up by cellular substance, lymphatics, and one or more glands of the lower series or chain. The superior opening of this canal is frequently covered by a pretty dense fibrous membrane, arising from the neighbouring parts*. The fascia iliaca passes down to join the duplicature of the fascia lata, which forms the posterior and inner parietes of the canal: the anterior and inner is covered by the fascia superficialis; and the anterior and outer by the fascia lata, and dense cellular substance forming the sheath of the femoral vein.

Crural canal.

* CLOQUET.

Epigastric
artery.

The iliac artery passing under Poupart's ligament, sends off externally the circumflex, and internally the epigastric, which latter mounts upwards and inwards to the rectus muscle, behind the spermatic cord, two or three lines to the inside of the upper abdominal ring, and about an inch to the outside of the opening in the tendon of the external oblique. I have always found this artery anterior to the fascia transversalis, yet it has been more frequently observed by CLOQUET to pass upwards between the fascia transversalis and peritoneum, and in some instances to pass through this fascia at different heights, from distance to distance, in such a manner as to be alternately anterior and posterior. Having crossed behind the spermatic cord, the epigastric artery generally sends off a pretty large branch inwards, which ramifies on Gimbernat's ligament, and the neighbouring parts.

Obturator
artery.

The Obturator Artery commonly arises from the hypogastric, but very frequently from the epigastric, by a short common trunk, when it usually passes downwards on the outside of the upper opening of the crural canal, in its course to the thyroid foramen; but sometimes this common trunk extends a few lines inwards and upwards, and then very frequently the obturator goes down to the inside of the crural opening.

Having described the structure of the parts more immediately concerned in hernia, it only remains for me to speak of the modes by which the gut, in those species called Inguinal and Femoral, may be the best relieved when strangulated. To effect this, the surgeon is frequently obliged to have recourse to the knife; and *where* he ought to divide the parts which cause the strangulation, becomes of much

consequence, as most fatal effects have followed from the division of bloodvessels*.

In Inguinal Hernia, two directions have been particularly recommended, viz. directly upwards, or outwards and upwards. We cannot cut upwards and inwards, as the epigastric is always situated near to the inside of the neck of the hernial sac, except in those cases of internal inguinal hernia, which pass directly through the parietes of the abdomen †, behind the external abdominal ring, and where the artery is invariably on the outside of the sac: if we should confound this species with the hernia which follows the course of the cord, the effects might be fatal in operating upwards and outwards; and we may the more readily commit this mistake, as external inguinal hernia, when it has existed for some time, brings down the internal abdominal ring behind the external, so as in a manner to lose its most distinguishing character; and is it not very probable, that in some cases of the internal species, the hernia may force its way immediately to the inside of the epigastric artery, and, when following the course of the cord, represent nearly the usual appearance of the external species? Dreading a case of this kind, I should prefer the incision directly upwards, unless in particular instances, in which the strangulation is found to exist very high up.

Stricture, how divided in Inguinal Hernia.

The parts to be avoided in operating for femoral hernia are the epigastric artery and the spermatic cord, as also the obturator, when it arises from the epigastric, and passes down to the inside of the hernia. I have seen many instances where the obturator passed down behind GIMBER-

Parts to be avoided.

* ARNAUD divided the spermatic artery, and the patient died an hour after. Mem. de Chir. t. ii. p. 756.

† Vide Note E.

NAT's ligament, with an intervening space filled up with fat and cellular substance, sufficiently capable of admitting the blunt point of a bistoury, and where the ligament might have been safely divided; but if the instrument had been introduced further than the eighth of an inch, the artery must have been cut. No more ought to be cut in any direction than merely what is absolutely necessary for the safe reduction of the parts.

The epigastric artery passes up about half an inch distant from the outside of the upper opening of the crural canal; the spermatic cord lies at nearly the same distance, but superior, and to the inside. From repeated dissections of the parts*, and from the invariable success of M. DUPUYTREN of the Hôtel-Dieu of Paris, I am inclined to suspect that the dangers of this operation have been exaggerated. DUPUYTREN has operated on several hundred cases of the different species of hernia, without ever once having the least trouble from hemorrhage †. He uses a convex cutting bistoury with a blunt point, which he introduces on the fore-finger ‡, and cuts only on withdrawing the instrument; and is persuaded that in this way the arteries glide before the knife, which divides merely the more tense parts, unless when the knife is brought directly across the vessel.

Sometimes in Femoral Hernia, it is sufficient for the reduction of the parts, to divide a few of the fibres of the fascia lata ||, forming the upper part of the crescentic

Femoral
Hernia,
how re-
lieved.

* In the healthy state. † Clinical Lectures, Hôtel-Dieu, 1819.

‡ RICHTER, trad. de Rougement, p. 21. We ought to prefer in all cases the finger to the director.

M. ARNAUD says, that he has often seen the intestine pierced through with the point of the director. *Traité des Hernies*, t. ii. p. 16.

|| Vide Note F.

arch, which go to be inserted into Gimbernat's ligament. The division inwards has been minutely described by GIMBERNAT, who, after the external incisions, introduces on the internal side of the intestine, between it and the hernial sac, a deep grooved director, having a blunt point, which is directed from without inwards through the crural ring, until its point rests upon the ramus of the pubis; and holding this with the left hand, if he operates on the right side, and if on the left, with the right, and keeping it firmly upon the ramus of the pubis, with its back turned to the intestine, and the groove towards the symphysis of the pubis, he introduces very gently with the other hand, on the groove of the director, a narrow bistoury with a blunt point; and having reached the extremity of the groove of the director, he makes both hands act in concert, so that the two instruments shall move together on the ramus of the pubis towards its body, when he withdraws them at the same time*.

Scarpa is so much alarmed at the idea of hemorrhage, that he cautions us against making the incision in the male any where more than two lines †. The hernial sac being laid open, and a small portion of gut protruded, he advises a director to be introduced into the abdomen between the gut and neck of the sac, to shew the direction by which the viscera may be the more easily returned. He then endeavours to elevate Poupart's ligament with Arnaud's hook, and if this is not sufficient for the reduction, he makes four or five scratches with the knife on its inferior border; and where it is impossible, from adhesions, to employ dilatation, he recommends the division of the posterior

* Nuevo Método de operar en la Hernia crural. Madrid, 1793, p. 37.

† Vide Note G.

and inner border of Poupart's ligament, cutting obliquely downwards, and inwards, for two or three lines*.

Mr LAWRENCE divides the thin posterior border of the crural arch, in the part recommended by Gimbernat, as nearly as possible to its insertion into the pubis†. Mr HEY remarks, that the finger or director should not be introduced very near the great vessels, but on that side of the intestine or omentum which is nearest to the symphysis of the ossa pubis. The incision may then be made directly upwards‡. RICHTER|| and SABATIER§, direct the incision towards the umbilicus. RICHERAND¶ says, "that, as the crural vessels and epigastric artery are almost always on the outside of the tumor, we ought to cut on the internal pillar** of the inguinal ring, which in this part forms the crural arch, but in making this incision we must avoid wounding the spermatic vessels. We cut the arch outwardly, if contrary to the usual situation, the crural vessels are placed on the internal side of the tumor." RICHTER††, ARNAUD‡‡, CHOPART, DESAULT|||, ROUX §§, CLOQUET¶¶, &c., likewise think, that crural hernia is sometimes situated to the

* Scarpa, p. 44.

† On Ruptures, p. 379.

‡ Practical Observations, 2d edit., p. 154.

|| Trad. de Rougemont, p. 121. On doit diriger l'incision vers l'ombilic.

§ Medicine operat. 2d edit., p. 410.

¶ Nosographie Chirug. t. iii. 2d edit. p. 401.

** Or inferior.

†† Traité des Hernies. Vide Note H.

‡‡ Memoires, p. 767.

||| Traité des Maladies, Chirug. t. ii. p. 195.

§§ Mélanges de Chirug., p. 46.—1809.

¶¶ Recherches Anatomiques, p. 85. Vide Note I.

outside of the crural vessels; but the greater number of most accurate observers*, who have written lately on this subject, give it as their decided opinion, that the neck of the femoral hernia is situated always to the inside of the crural vessels.

Mr A. COOPER, in the female subject, recommends the bistoury to be inserted “into the middle and anterior part of the mouth of the hernial sac, and to cut the structure upwards, and with a slight obliquity inwards.” In the male subject, if the hernia is large, to prevent the spermatic cord from being injured, he makes a transverse incision one-fourth of an inch above Poupart’s ligament, in the tendon of the external oblique over the mouth of the hernial sac, which will expose the spermatic cord, and, being drawn up by the finger or probe, may be removed from the direction of the incision †.

SHARP recommended the stricture to be cut upwards and outwards ‡, which is the direction followed by M. DUPUYTREN, who has operated on upwards of sixty males affected with femoral hernia §. We may have a pretty correct idea of the direction he gives his knife, by taking the centre of a line drawn between the umbilicus and the anterior superior spinous process of the ilium. Mr A. COOPER, and particularly M. DUPUYTREN insist, that the division of Gimbernat’s ligament does not give sufficient space for the safe

* GIMBERNAT, *Nuevo Metodo de operar en la Hernia crural*, p. 31.—HEY’s *Practical Obs. in Surgery*, p. 148.—COOPER on *Crural Hernia*. It cannot be divided directly outwards, for there the crural vein must necessarily be injured, p. 17.—LAWRENCE, p. 347.—SCARPA, *Mem. terza*, p. 38.

† COOPER on *Crural Hernia*, p. 17.

‡ *Critical Inquiry*, p. 46. 1750.

§ *Clinical Lectures, Hôtel-Dieu*, 1820.

reduction of the gut : the former adds, that, from its depth, it is very difficult to divide without injuring the intestine.

Some time ago I dissected a male who had two small herniæ in each groin, having between them the epigastric and obliterated umbilical arteries *, forming the external and internal species of inguinal hernia, which latter Mr A. COOPER calls Ventro-inguinal. The peritoneum covering the internal herniæ was very much thickened, but that of the external was quite natural. Dissecting from within outwards, I removed the peritoneum from the lower and anterior part of the abdomen; and that portion which formed the sac of the internal hernia felt and cut as a thin layer of cartilage: the obliterated umbilical artery and peritoneum were very intimately connected. The fascia transversalis, being now exposed and removed, was much thicker than usual, where it formed a covering to the internal hernial sac †. The epigastric artery was situated one-eighth of an inch to the inside of the upper opening of the external hernia, and lay immediately behind the transversalis muscle: it gave off the obturator two lines from its origin, which, in its course to the pelvis, went inwardly behind Poupart's ligament, two lines above its inferior border, and descending, followed the edge of the falciform process of Gimbernat's ligament, but a line posterior to this process, which space was filled up by cellular substance. On the opposite side the parts were exactly the same. The internal oblique in this case descended no farther than an inch on the outside of Poupart's ligament, and passed almost horizontally inwards.

It is well known that the neck of the sac is sometimes the cause of strangulation. Whilst attending the Hôtel-

* Vide Note K.

† Vide Note L.

Dieu at Paris, I saw a most interesting case of this kind in PAUL MICHEL, aged fifty, of a spare habit of body, who had been subject to hernia for the last twenty-eight years, but which had given him very little trouble, as he had always been able to reduce it himself. Four or five days, however, before he entered the hospital, it came down, and required more force than usual to reduce it, and the symptoms of strangulation remaining, he was induced to seek assistance at the Hospital. From the description of the tumor, M. DUPUYTREN was convinced that it had been femoral hernia, and, from the symptoms, was satisfied that strangulation still existed, caused by the neck of the sac. The patient had passed little or nothing by the bowels since the reduction; had much stercoral vomiting, with pain all over the abdomen; pulse frequent, small and hard. M. DUPUYTREN was anxious for an immediate operation, but the patient would not submit,—so the usual remedies, as bleeding, the bath, &c. were employed until the fourteenth day of the strangulation. Being then much fatigued by the violence of the symptoms, and having lost all hopes of getting well without an operation, he was then most desirous to have it performed.

Whilst in bed, the skin was pinched up transversely into a fold immediately over the femoral canal, and cut perpendicularly to the extent of two inches and a half. The cellular substance, with the different fasciæ, were next raised and cut, when a gland came into view, which was separated from its connections by the scissars. The cellular substance behind this gland was pulled a little by the forceps, and the patient made to cough several times. By this means an oval body, of the size of a large nut, made its appearance, and, by dividing a little of the cellular substance with which it was covered, it was recognised to be the her-

nial sac. This was scratched by the knife, and pricked at its lower part, upon which issued a stream of serum. The sac was now slit up a little and pulled down, and separated as much as possible from its connections, to facilitate its descent, when a turn of the gut was seen. The incision of the sac was prolonged upwards and outwards, by means of a convex cutting bistoury introduced on the point of the finger, when another turn of the gut made its appearance. On cutting up the sac still a little farther in the same direction, the intestine got completely relieved: it was slightly darkened in its colour, and, by gentle pressure, went up easily into the abdomen, from whence there immediately issued a quantity of serum. The wound was dressed with charpie. The operation had not been finished ten minutes when the patient passed much flatus by the anus. The morning after, no cholic, little vomiting, slept well, and had passed two large fluid evacuations. Fourth day, situation very favourable, but complained of pain at the wound, and, on inspection, a small abscess was evident, which was opened. Sixteen days after operation dismissed cured.

A few months after the cure of the above case, a young man came into the Hospital, with symptoms of strangulated hernia. He had likewise been occasionally subject to inguinal hernia for years, which had come down some days before his entry, and which he himself had reduced, but violent symptoms soon followed, viz. pain and tension all over the abdomen, with much vomiting of bilious matter. DUPUYTREN advised an operation, as he conceived it a case of internal strangulation, not to be relieved by any other means, and this was performed soon after his admission, but no strangulation was found; the following morning the symptoms were still more violent, and the second night he died. The dissection shewed most evidently the cause of

death to have been nothing more than intense inflammation, which DUPUYTREN most candidly acknowledged must have been increased by the operation, if not, the actual cause of death; and added, that nothing should induce him to operate in a similar case, unless there existed unequivocal signs of stercoral vomiting, which he considers as quite pathognomonic of strangulation of the gut*. Some years ago, a man came into the Hôtel-Dieu, with symptoms of strangulated gut, after the reduction of an inguinal hernia in each groin. DUPUYTREN operated on one side, but could discover no strangulation; then on the other, where it was found. The patient speedily recovered.

Cases seemingly the most favourable will sometimes prove the most fatal; no violence used in the employment of the taxis, and the operation performed within eight or twelve hours after the strangulation has occurred. In other instances, the most unfavourable will sometimes terminate happily. A case of this latter kind which I witnessed, I shall shortly relate.

A young man æt. twenty-one, affected with strangulated inguinal hernia for three days. The taxis had been repeatedly and powerfully employed, had much vomiting, obstinate costiveness, swelling, tension, and violent pain of abdomen. After the omentum was reduced, for no gut was found, a large quantity of sanies-looking fluid, with pus and portions of coagulated lymph, issued from the abdomen. The patient was much relieved by the operation, and next day there only remained some slight vomiting with hiccup, and in a short time got quite well. M. DUPUYTREN considers, that out of *twenty* cases of strangu-

* Clinical Lectures.

lated hernia left to themselves, *one* may recover, through the medium of an artificial anus.

The following case is, I believe, unique; and I relate it more with the view of illustrating the Protean form, which this disease sometimes assumes, than with the idea that it will contribute much to our knowledge on this most important subject. It was communicated to me by a friend, whose accuracy of observation is only surpassed by his unquenchable thirst for information.

A man of rather spare habit, aged about thirty-five years, who had been occasionally subject to a descent, through the inguinal canal, of a small portion of gut (though easily reducible) for some years, was in the London Hospital in the summer 1818, under treatment for an old ulcer of the leg, during which time the small hernia again made its appearance on the right side, with severe symptoms indicating strangulation. Some ineffectual attempts at reduction were made, though violence was carefully abstained from; it being a conviction in the mind of the surgeon, Mr HEADINGTON, under whose care the poor man was, that if the operation be performed early, the danger arising from it is comparatively little, when opposed to the permitting of the intestine to remain in its constricted state, and the injurious effects of which greatly augmented by the force employed in the taxis. He was bled, whilst in a bath, *ad deliquium*, from which, however, he soon recovered: no impression was made on the hernia, nor were his symptoms more than very temporarily alleviated. The tobacco-glyster was then about to be had recourse to; but whilst preparing, my friend, the narrator of this to me, was called by the patient, who told him he had returned the gut, and "now there would not be occasion for any operation" On examining the part, it was found that the

hernia had certainly disappeared, leaving merely a slight puffiness of the teguments. The symptoms of strangulation, however, were not removed, although the man exerted himself to conceal the state he was in, and convince his attendants that he should soon recover. It may be observed, that from the first he evinced the greatest possible dread of the knife, and mentioned more than once his inability and determination not to suffer an operation. In a very short time after the disappearance of the tumor, the pain ceased, when he was satisfied that his recovery was complete; but this delusion was too manifest to the professional bystanders; the faltering pulse, the shrunk countenance, and other fatal precursors, left no hope of his life: it was prolonged but for an hour or two.

The body was opened fifteen hours after death. On making a triangular flap of the abdominal parietes, by an incision from the umbilicus to the anterior superior spinous process of the ilium, and another down to the symphysis pubis, and reflecting it from within outwards, a portion of the *intestinum ileum* was traced passing out of the upper ring. The parietes of the abdomen were again returned to their natural position; when, commencing externally, each layer was successively and carefully dissected off, where the hernia had presented itself, till the inguinal canal and upper ring were seen. At this spot, a small portion of very dark coloured intestine, much compressed, was detected passing down within the pelvis, as low as the side of the bladder. From the appearances, it was evident, that the man had made violent endeavours himself to reduce the hernia (which was afterwards confirmed by the patients lying in the neighbouring beds): at the same time the stricture at the upper ring was too great to permit the return of the protruded gut; so that by actual force it was pushed into the situa-

tion described, which necessarily must have greatly aggravated the evil, in so far as it excited the circulation in the small part of the gut, and more quickly exhausted it of its vitality; for I conclude it could not have been totally deprived of its circulation, or nervous power, from the commencement, else the pain and other symptoms would not have been so violent.

NOTES.

NOTE A.

“ A careful dissection of these parts, however, shews us, that the superficial fascia is really as loosely connected to the lower border of the obliquus externus, as to any of the other subjacent parts, and that when exposed, we can move it with our fingers on the parts over which it is expanded, with equal ease every where, except at the hollow of the thigh, where the cutaneous vessels and nerves, the lymphatics and their glands, are entangled with its laminæ.”—**TODD**, *Dublin Hospital Reports*, vol. I. p. 245.

Speaking of this fascia, **CLOQUET** says, “ En bas elle passe au-devant de l'arcade crurale à la partie externe de laquelle elle adhère assez fortement, au moyen de fibres qui se détachent de sa face postérieure.”—**P. 10.**

NOTE B.

“ Le bord inférieur du muscle petit oblique, inséré comme je l'ai dit à l'arcade crurale, descend parallèlement à elle, en recouvrant le cordon testiculaire dans le canal inguinal, et s'attache en dedans au pubis. Il ne passe au-dessus du cordon spermatique, qu'au moment où celui-ci franchit l'ouverture inférieure du canal inguinal. Il s'y engage

aussi en changeant de direction et de figure, pour former le muscle crémaster. A cet effet, ses fibres, qui étaient droites et à peu près horizontales deviennent courbes et verticales; elles traversent l'anneau, et descendent au-dessous de lui, en formant successivement en avant du cordon spermatique de grandes anses renversées, à concavité supérieure, et qu'on peut suivre jusqu'au fond du scrotum."—CLOQUET, p. 13.

NOTE C.

“ Le feuillet aponévrotique superficiel croise un peu la direction du profond, il s'enfonce au-dessous de l'arcade crurale, pour s'y fixer en se continuant d'une manière sensible avec le ligament de Gimbernat. C'est même de cet endroit que paraissent provenir le plus grand nombre de ses fibres.”—CLOQUET, p. 65.

NOTE D.

“ L'aponeurose fémorale n'est point divisée à la partie supérieure de la cuisse; mais elle forme une duplication très-remarquable, dont la partie inférieure représente un cul-de-sac, qui n'a d'ouverture que pour l'artère et la veine fémorale; et si l'on examine de près la manière dont se comporte le fascia-lata sur ses vaisseaux, on voit qu'il se réfléchit sur eux, et se perd sur leurs parois, comme nous voyons le feuillet extérieur ou fibreux du péricarde se prolonger et se perdre sur les gros vaisseaux, qui sortent du cœur. Cette duplication du fascia-lata offre deux rebords, l'un interne, l'autre externe, réunis inférieurement, mais offrant en haut deux prolongements: l'interne passe

sous l'arcade crurale, et va joindre l'aponeurose iliaque ; l'externe adhère en dehors, comme nous l'avons dit, à l'arcade crurale, puis glisse sous cette arcade pour aller s'unir à l'aponévrose du muscle lombo-abdominal (transversalis), et former avec elle en arrière et du côté du pubis, le ligament de Gimbernat."—BRESCHET, *Sur la Hernie Femorale*, p. 129.

NOTE E.

“ Les hernies inguinales internes, sont aux hernies inguinales externes, à peu près dans le rapport de 1 à 5.”—CLOQUET, p. 84.

NOTE F.

“ Tout chirurgien doit sçavoir qu'il arrive assez ordinairement que certains paquets de fibres du fascia-lata, sont capable de faire étranglement dans la hernie crurale, et même dans l'inguinale. C'est à M. GARENGEOT à qui nous sommes redevables de cette découverte.”—ARNAUD, *Memoires*, p. 776.

“ Dopo tagliati i tegumenti ed aperto il sacco non di rado basta tagliare, quelle appendici della fascia lata che vi passo sopra, tolta la quale resistenza alcune volte con leggieri pressioni si possono poi rimettere le parti, altrimenti si tagli l'arco.”—BERTRANDI, *Operazioni di Chirurgia*, p. 46.

NOTE G.

“ Nel maschio la quale oltrepassi due linee di profondità qualunque sia la direzione che dare si voglia al taglio espone il malato al pericolo di mortale emorragia.”—SCARPA, *Sull'Ernie*, p. 42.

NOTE H.

“ Quelquefois le gros vaisseaux sont exactement derrière la hernie, quelquefois ils sont à son côté externe, d'autrefois enfin à son côté interne.”—RICHTER, *Trad. de Rougemont*, p. 243.

NOTE I.

“ L'artère épigastrique peut se trouver en-dedans du sac de la hernie crurale ; celle-ci descend alors au-devans des vaisseaux fémoraux. Je ne possède qu'une seule observation de ce cas. Suffit-elle pour proposer de distinguer les hernies crurales, en externes, et en internes, comme on l'a fait pour les hernies inguinales ? Je le pense.”—CLOQUET, p. 86.

NOTE L.

“ Le ligament ombilical se rencontre toujours en dedans de la hernie inguinale externe. Sa position varie dans la hernie inguinale interne ; il se trouve en dehors ou en dedans, ce qui prouve que la hernie inguinale interne peut se faire dans les deux fosses que le péritoine présente vers la région inguinale.”—CLOQUET, p. 85.

NOTE M.

“ Le sac de la hernie inguinale interne pousse devant lui le fascia transversalis, dont il s'enveloppe ; ou bien il passe à travers une ouverture accidentelle de cette aponévrose. Ces deux circonstances ont une grande influence sur le mode de réduction et sur l'étranglement de la hernie inguinale interne.”—CLOQUET, p. 83.