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THE RADICAL CURE OF FEMORAL HERNIA.

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Professor of Surgery in the New York Polyclinic; Surgeon to the Methodist Episcopal Hospital, and to the Brooklyn Hospital.

A Clinical Lecture delivered at the Methodist Episcopal Hospital, June 5, 1897.

Gentlemen: The patient before us, a female, thirty-five years of age, is the subject of a left-sided femoral hernia. The hernia first made its appearance eight years ago, and developed gradually until it attained its present size. When first discovered it would return upon lying down, and was readily retained by a truss. For the past five years she has neglected to wear a truss; adhesions have formed within the sac, and as a consequence the hernia has become irreducible.

In consequence of this latter circumstance the hernia has become a dangerous feature of the environment, for the reason that constant risks of strangulation confront her. This has been explained to her, and she has consented to confront the comparatively slight dangers of an operation for radical cure.

The protrusion presents itself as an ovoid swelling, about the size of a hen's egg, located at the inner side of the large vessels which pass over the brim of the pelvis to the thigh. It is semi-elastic, almost fluctuating to the feel, and dull on percussion. The fact that it is irreducible is at once manifest when an attempt is made to return its contents to the abdominal cavity. A slight impulse is present when the patient coughs.

These facts in the history are sufficient to establish a diagnosis of hernia, in the vast majority of cases. The fact that it is a femoral rather than an inguinal hernia is established by the position of the protrusion in its relations to the line of Poupart's ligament. The fact of its occurrence in the female is likewise suggestive of the variety of hernia at hand, for the reason that this variety occurs with far greater frequency in the female than in the male. Its anatomical relations to Poupart's ligament may be established by drawing a line from the anterior superior spinous

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process of the ilium to the spine of the pubes. The first-named is determined without difficulty, but the pubic spine is not always so easily located. If you will remember that the latter is placed upon the same level as the greater trochanters, you will be able to locate it without difficulty. A tape passed around the body so as to lie upon both trochanters, will cross the pelvis at the level of the pubic spine. With the exception of scrotal hernias in males, any hernia the bulk of which lies below a line drawn from the anterior superior spinous process of the ilium to the pubic spine is femoral in its origin.

The attacks of cramping, colicky pains are worthy of notice. These come on suddenly and are relieved by lying down. This is suggestive of the occasional occurrence of what is known as a "partial enterocele," or Richter's hernia, sometimes, although improperly, designated a Littre's hernia. Richter's hernia is the imprisonment of a portion of the convex surface of the intestine in the hernial orifice. The portion thus engaged is situated directly opposite the mesenteric attachment. On the other hand the hernia which Littre described consists in the passage of a Meckel's diverticulum into the hernial sac. When a Richter's hernia occurs, either the hernial orifice is too small to permit of the passage of a complete loop of intestine, or the mesentery is too short to permit the latter to reach and enter the sac. Partial enterocele occurs with far greater frequency in femoral hernia, and it is this circumstance which suggests the latter explanation. The attacks of abdominal pain to which this patient has been subject are probably due to the occasional occurrence of a partial enterocele.

As the hernia presents itself to us at the present time it is probably a pure epiplocele; that is to say, it contains only omentum, which finds its way into a small hernial opening more readily than intestine. When both intestine and omentum are present in the sac the hernia is known as an entero-epiplocele.

Heretofore the treatment of femoral hernia by means of an operation designed to effect a radical cure has not been so successful as in the case of inguinal hernia. The more frequent occurrence of the latter has directed attention particularly to its needs, and has led to the development of several operative procedures, each one of which has met with a fair success in accomplishing the result arrived at.

In the case before us we will apply one of the most recently devised, and probably the most effective, operations for the radical

cure of femoral hernia. The method is known as that of Fabricius, and its technic includes the following stages:

1. The incision is planned so as to expose the insertion of that portion of the aponeurosis of the external oblique known as Poupart's ligament at the spine of the pubes, and the line where that structure blends with the fascial structures of the thigh, as well as the sheath of the vessels at the crural opening.

2. The sac of the hernia is exposed and cleared to its neck.

3. The sac is opened and emptied, after which it is ligated at its neck, and the latter, in suitable cases, inverted toward the abdominal cavity.

4. The edge of the aponeurosis of the external oblique is forced backward to the level of the upper margin of the horizontal ramus of the pubes, and there sutured to the periosteum and the origin of the pectineus muscle. By this means the space between the bone and the downward projection of the aponeurosis, in which space a femoral hernia forms before making its appearance externally, is obliterated.

The patient is placed in the Trendelenburg position, the intestines thus being caused to gravitate to the upper portion of the abdominal cavity, where they are out of harm's way during the steps of the manipulation subsequent to opening the sac. The incision commences at the spine of the pubic bone, and is carried parallel with Poupart's ligament for a distance of from four and a half to five inches, or sufficiently far to reach a point well to the outer side of the femoral vessels. (Fig. 1.) The skin, fat, and superficial fascia are divided, the superficial epigastric vein, as it passes in a vertical direction, being sometimes sufficiently large to come into sight before division, in which case it is divided between two ligatures.

The hernial sac, in some instances, projects directly beneath the lesser falciform process, in which case it comes into view with its coverings at this stage of the operation. In other cases, however, it lies beneath the superficial layer of the deep fascia of the thigh, or the fascia lata, as it is called, because of its broad ramifications. Under these circumstances it will be found to be covered by the cribriform fascia, which must also be incised.

The sac being exposed and isolated well down to its neck, it is opened and its contents reduced. (Fig. 2.) In the case before us the sac is found to contain a portion of omentum which has become adherent, and some fluid. The presence of the latter explains the sense of fluctuation imparted when the protrusion was palpated.

The distal portion of the omentum is free within the sac, and acts as a ball valve, thus preventing the fluid which has been secreted by the sac from being forced into the peritoneal cavity when pres-

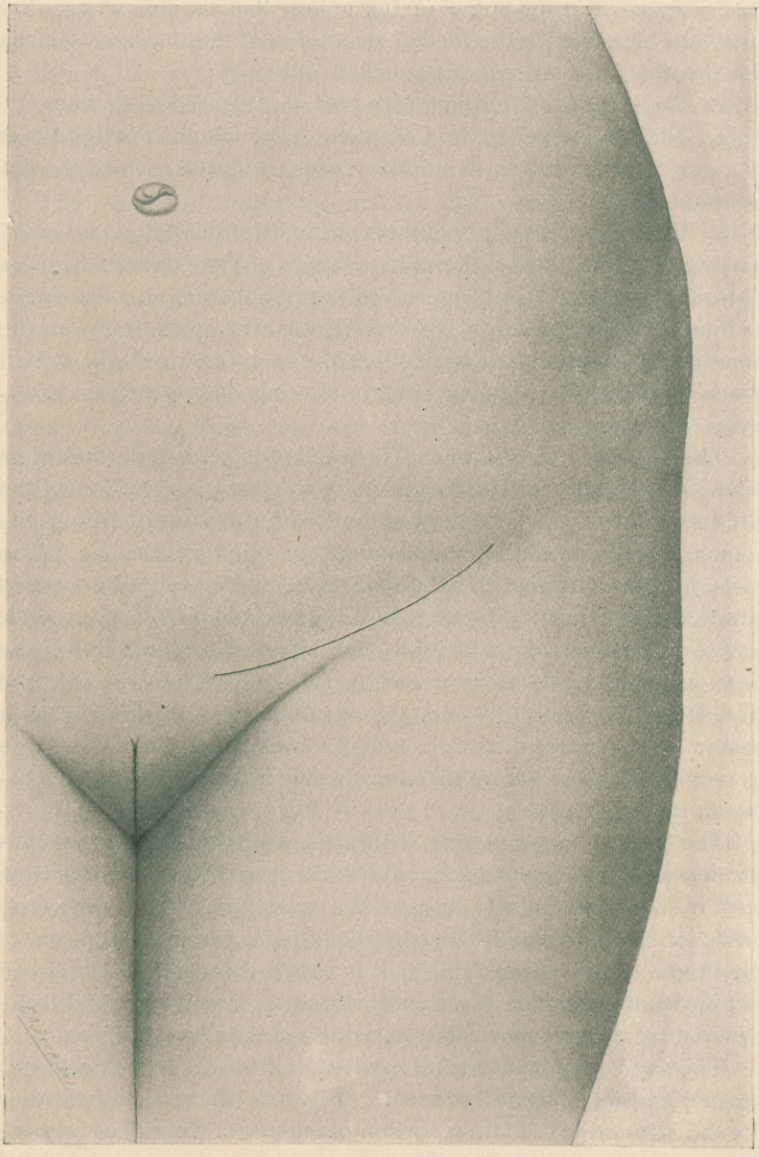

FIG. 1 Line of Incision.

sure was made upon the protrusion. This condition constitutes what is known as a "hydrocele of the sac." Lifting up this ball-valve arrangement of the omentum the orifice of the hernial sac is readily disclosed.

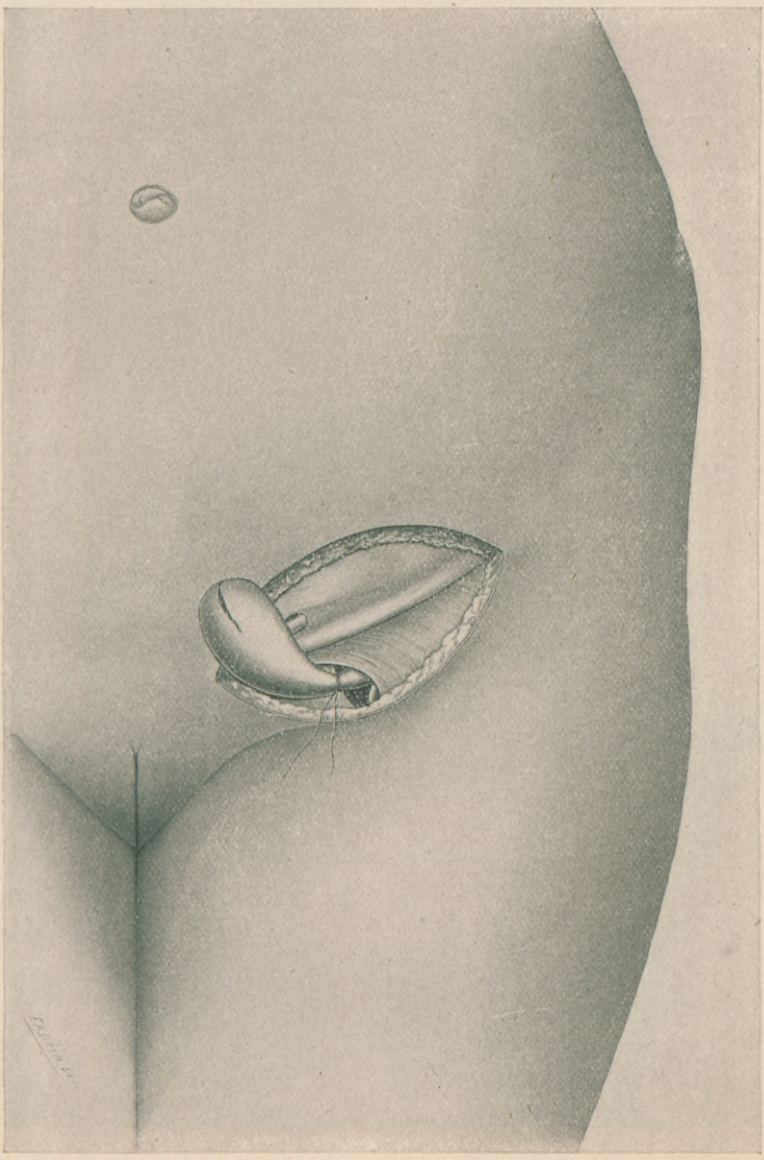

FIG 2. **Isolation of and ligation of neck of sac.**

The adherent omentum is now freed and the sac emptied. The latter is drawn forward, its neck ligated with catgut, and the ligated portion of the sac cut away. (Fig. 3.) In order to more

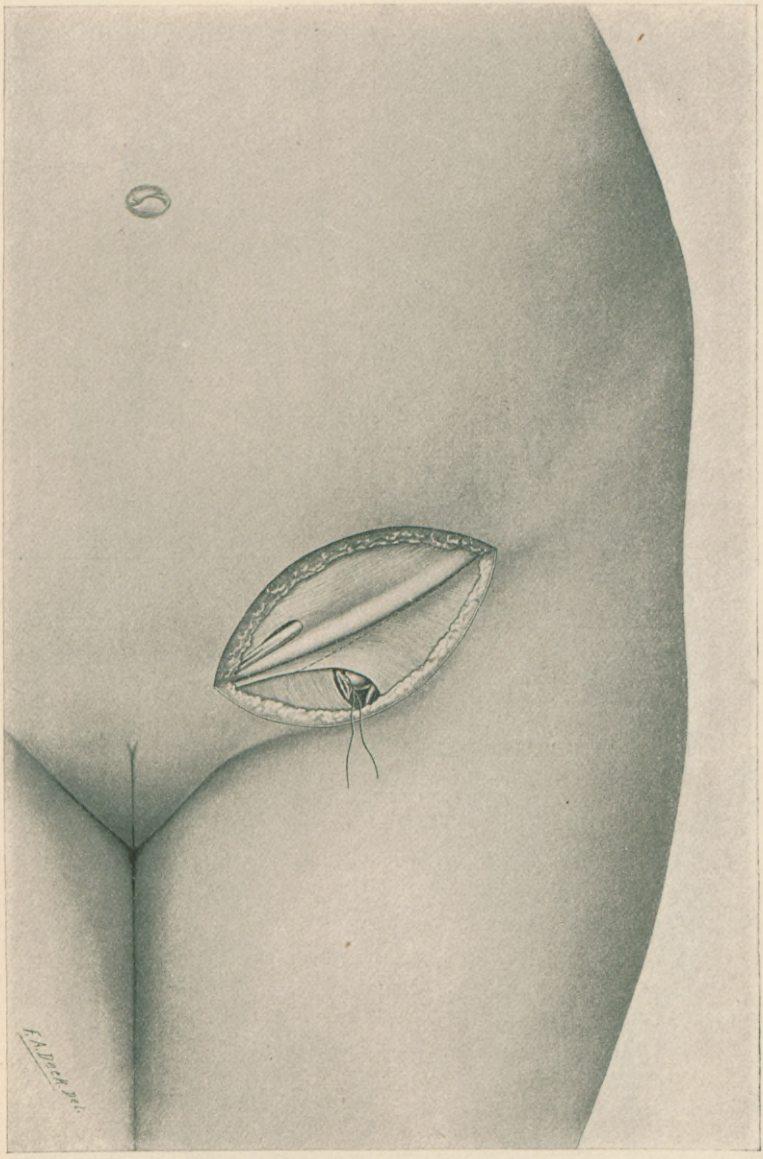

FIG. 3. Neck of sac. Sac cut away. Dotted line shows line of separation of Poupart's ligament and fascia lata.

fully expose the crural canal preparatory to its obliteration, the attachment of Poupart's ligament at the spine of the pubes is first detached, and the separation carried on in an outward direction

FIG. 4. Fascia lata turned back exposing crural sheath, and origin of Pectineus muscle.

until this structure is separated from the superficial layer of the fascia lata up to the crural sheath. At the latter point, although

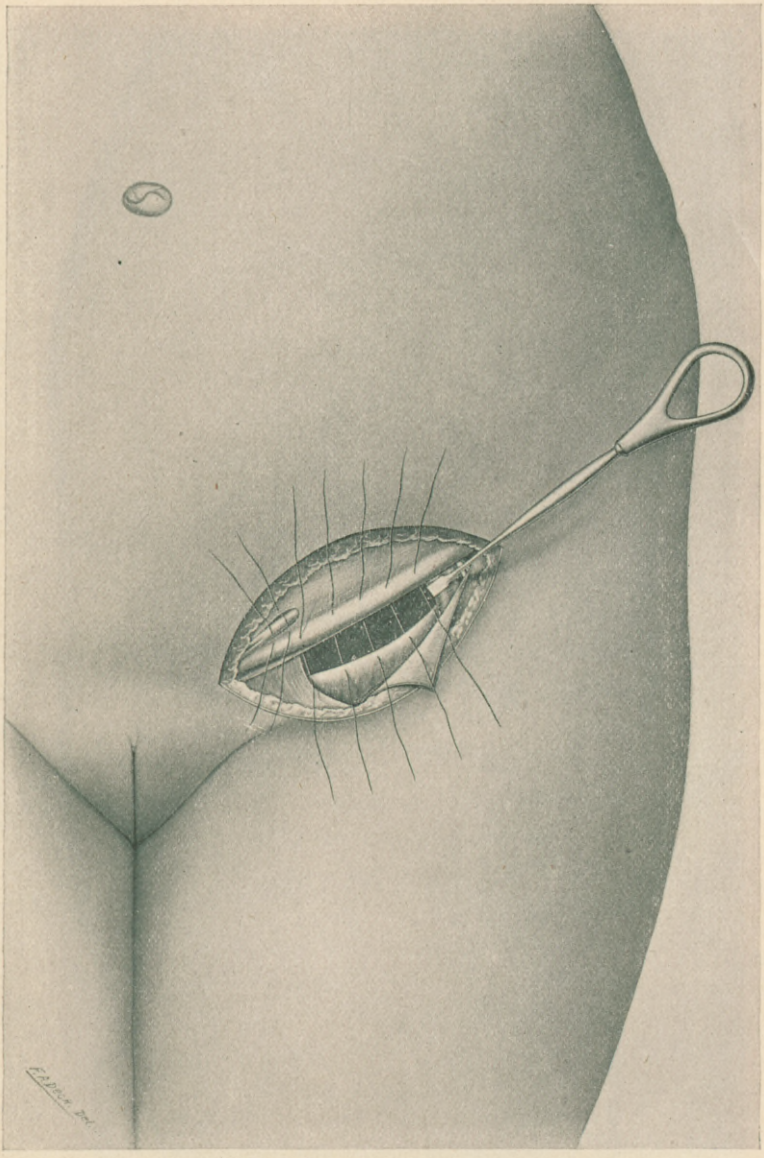

FIG. 5. Crural sheath and vessels retracted and kangaroo-tendon sutures applied to Poupart's ligament and origin of Pectineus ready for tying. Two sutures are placed in position to approximate the pillars of the external ring.

this layer of the deep fascia of the thigh is somewhat tense, yet it does not lie directly upon the vessels. With the index-finger introduced to guard the vessels the separation of the fascia lata from Poupart's ligament is completed with the scissors and the former

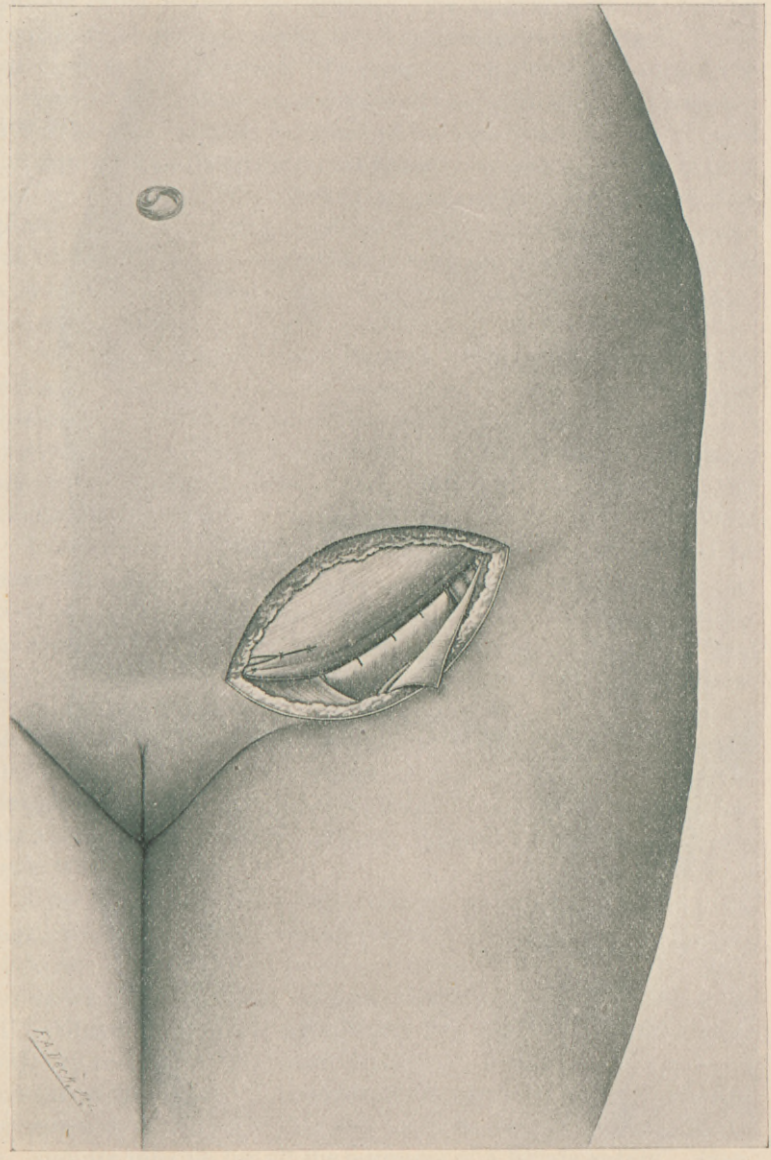

FIG. 6. Appearance of the parts after tying the sutures.

structure reflected in a downward direction. (Fig. 4.) In a strangulated case this stage of the operation should precede the one last described, for the reason that relief of the constriction follows at once when Poupart's ligament and the remainder of

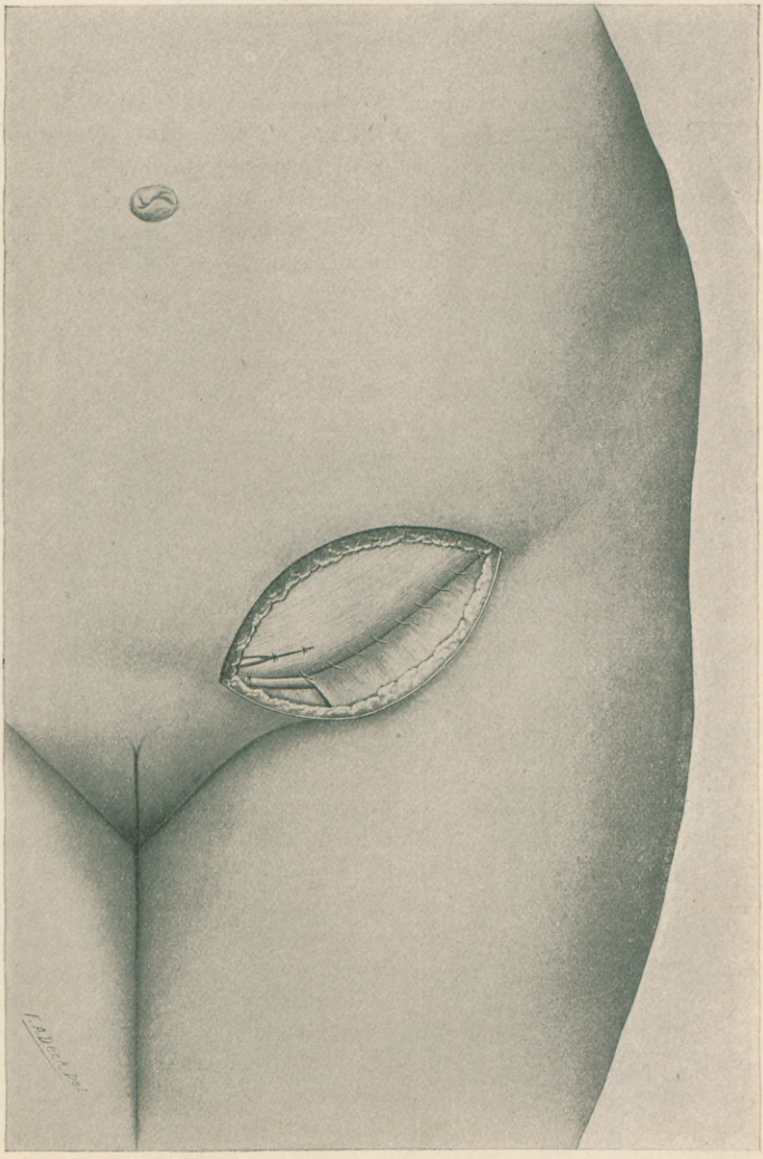

FIG. 7. Appearance of parts after fascia lata is sutured to external oblique.

the aponeurosis of the external oblique has been detached and freed.

A funnel-shaped cavity formed by the recession of the horizontal ramus of the pubic bone is now revealed, constituting the femoral canal. This now contains the ligated neck of the sac, some fatty and areolar tissue, and a lymphatic gland or two. These latter are to be removed. In cases of old unreduced hernia the peritoneum has become stretched, and bulges forward considerably at this point. Grasping the neck of the sac, this is drawn forward and a portion of the superfluous tissues, consisting of peritoneum and subperitoneal fat, removed, a transverse peritoneal section resulting. This is not a part of the original operation of Fabricius, but I have thought it best to add it in cases where it is indicated. Such a condition exists in this case, and we will proceed to execute the maneuver.

The gap thus made is now sutured. The edges are grasped with catch forceps and drawn forward so as to secure broad approximation of the peritoneal surfaces. The method employed by myself in accomplishing this is to hold the surfaces in contact, and sew through and through, and not over and over, as peritoneum is usually sutured.

The essential and important step of the operation is now to be taken. This consists in attaching Poupart's ligament to the point of origin of the pectineus muscle and the periosteum of the horizontal ramus of the pubes. By this maneuver Poupart's ligament is made to describe a backward curve, to follow the recession of the bone at this point, imitating in this respect that portion of this structure which is reflected obliquely outward and backward after its insertion into the spine of the pubes, and known as Gimbernat's ligament. In this manner the femoral canal, or space which lies normally between Poupart's ligament and the bone, is obliterated.

Some substantial suture material must be employed at this stage. While catgut may be used in suturing the peritoneal surfaces, this is far too unstable to serve our present purpose. My own preference is for kangaroo tendon. Kangaroo tendons placed in "U"-shaped glass tubes, with ninety-five per cent. alcohol, hermetically sealed and afterward sterilized by exposure to a temperature of about 300° F., a method devised originally by myself, are now prepared by the Ellwood Lee Company, Conshohocken, Pa., and are reliable for all the purposes of a hernia suture. (See the BROOKLYN MEDICAL JOURNAL, vol. vi, page 164, 1892.) Accord-

ing to Coley of New York, who has had a large experience with this material, it will hold with unimpaired strength for a sufficiently long time for the purposes of hernia operations, disappearing only after a period of months.

In applying the suture the crural sheath and its contained vessels should be displaced well to the outer side, and above the iliopectineal eminence, and there held by the operator's disengaged index-finger, or a blunt hook in the hands of an assistant. (Fig. 5.) In this manner an increased area for the attachment of Poupart's ligament to the horizontal ramus of the pubes is made available. The obturator artery and vein may come into view, and care should be taken not to injure these.

A stout and strongly curved needle with a sharp point is armed with a strand of the kangaroo tendon, and passed through the aponeurosis of the external oblique about three-eighths of an inch from its edge, so as to secure a good hold. It is then passed through the periosteum at the point of origin of the pectineus muscle, emerging about one-half an inch from the point of entrance upon the upper magin of the bone.

This suturing is the most important step of the operation, and upon the care with which it is done depends the entire success of the procedure. If the periosteum and bony attachment of the pectineus are caught well up by the needle, a good hold will be secured upon these structures, and firm and solid attachment of Poupart's ligament in its new position effected. All the sutures are first laid, and after cleansing the parts each is separately and securely tied. As we proceed with the sutures toward the median line we must avoid injury to the deep epigastric artery and vein. Five or sixs utures are usually required. (Fig. 6.)

This portion of the technic accomplishes for the femoral canal what suturing of the pillars does for the inguinal canal in the operation for the radical cure of inguinal hernia. To suture the margins of the crural ring to each other, or to Poupart's or Gimbernat's ligament, as in the older operations for the radical cure of femoral hernia, would be analogous to suturing the margins of the external ring in inguinal hernia after ligating the neck of the sac and leaving the latter in the inguinal canal, without attempting to obliterate the canal itself. This, as you can readily see, would be a serious error, and likely to lead to a recurrence.

In order that the closure may be sufficiently solid, it is advisable, although not always necessary, to reattach the superficial

layer of the fascia by means of sutures to the aponeurosis of the external oblique. (Fig. 7.)

The remainder of the wound is now closed. If the superficial fascial structures reflected from the abdominal wall to those of the thigh present themselves with well-marked edges, these may be sutured separately with a continuous catgut suture. Usually, however, these may be disregarded and the skin-wound closed at once. This may be done by any method which the operator may fancy. To employ drainage is an acknowledgment on the part of the operator that the demands of asepsis have not been fulfilled.

In closing the wound I have derived great satisfaction from the use of the subcuticular suture employed after the Franks-Marcy method. This is applied by catching the skin upon its under surface and about three-sixteenths of an inch from the edge, with a curved needle armed either with silk or linen thread. I employ the latter on account of its smooth surface, which facilitates removal. The direction taken by the needle is parallel with, and not at right angles to the skin edge. Care should be exercised not to pass the needle through the entire thickness of the skin, as this would defeat one of the principal objects of this method of applying a suture, namely, the avoidance of the risk of infecting the suture line—an infection likely to follow in cases in which bacteria, impossible of destruction by the ordinary methods of disinfection, exist in the outer layer of the skin.

The stitch is passed back and forth across the gap from one edge of the skin to the other, the loops being drawn taut every two or three turns of the suture, until the wound is closed. Sterile gauze dressings are applied, and the whole secured in position by a spica bandage. In children, in whom restlessness may disturb the dressings, a plaster-of-Paris spica may be applied for additional security.

The patient should be kept in the recumbent position for at least fourteen days, at the end of which time some freedom of movement may be permitted in the upright position. The subcuticular suture is removed at the end of ten days, by simply drawing on one of the free ends. A spica, with an underlying supporting pad of gauze, may be worn for two or three weeks longer. A truss should not be worn.