NEW METHODS FOR THE PERFORMANCE OF HERNIOTOMY FOR INGUINAL AND FEMORAL HERNIÆ.

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SINCE the advent of the antiseptic era in surgery the subject of the radical cure of abdominal herniæ, but more especially of the inguinal and femoral varieties, has proved one of great interest, and has taxed the ingenuity of surgeons generally. Although many different procedures have been introduced, few have stood the trying test of time, for while none have proved absolutely perfect many have fallen far short of the hopes which were entertained of them by their promoters, and others have been found to possess serious imperfections. In introducing still another mode of procedure I feel I ought to offer some sort of an apology, but the operations which I am about to describe have fulfilled my expectations so well that I thought they would prove of interest to this Section of the Royal Academy of Medicine.

The aims of herniotomy, whether it be performed for inguinal or femoral rupture, are in the main two—1. To dissect out the sac, its contents of course having been reduced, and occlude it at its neck—*i.e.*, where it becomes continuous with the peritoneum of the abdominal parietes. The occluded neck is then allowed either to drop back towards the abdominal cavity or is fixed to the abdominal parietes by some of the methods in vogue, such as that of Kocher or Macewen. 2. To occlude or narrow

as far as possible the passage by which the hernia left the abdomen.

[At this stage of the communication the anatomy of the inguinal canal was explained by means of a number of lantern slides.]

Stated briefly, the weakness of the abdominal wall in the inguinal region may be attributed—

1. To the presence of the interstitial space occupied by the spermatic cord in the male, the round ligament in the female—the inguinal canal.

2. To the muscular deficiency in this region due to the failure on the part of the internal oblique and transversalis muscles to reach the inner or pubic half of Poupart's ligament. At this level the aponeurosis of the external oblique is merely reinforced behind by the transversalis fascia without the intervention of the other flat muscles.

For some years the operation which I have almost invariably practised in the adult for the radical cure of inguinal hernia is that associated with the name of Bassini, with, perhaps, a few slight modifications. The operation which I am about to describe resembles Bassini's in one respect—viz., in that its object is to bring down the lower borders of the internal oblique and transversalis muscles to Poupart's ligament—but it differs from Bassini's operation in that the external oblique is not divided, and the inguinal passage is exposed and dealt with from behind.

Operation.—Omitting all reference to preparatory treatment and cleansing of the patient's skin, I shall now briefly describe my method of procedure. The patient having been put into the Trendelenburg position, the operator, standing on the side opposite to that upon which the hernia exists, makes a vertical incision about four inches in length over the lower part of the rectus muscle

at the junction of its outer and middle thirds. The sheath of the muscle is divided, and the outer border of the latter is defined and drawn inwards by a broad abdominal retractor. The transversalis fascia is then carefully divided, the deep epigastric vessels being in the meantime protected from injury. The operator now pushes back the parietal peritoneum outside the deep epigastric vessels and directs his fingers towards the internal abdominal ring. This step is greatly facilitated by strongly retracting the outer edge of the abdominal wound. By gentle traction the neck of the sac is drawn up out of the inguinal canal and opened between hæmostatic forceps. Assuming now that the sac is empty the right or left index finger is inserted into its interior and its isolation is effected. This is most readily accomplished by the aid of a sterilised muslin wipe, the laxity of the surrounding tissue enabling one to sponge away the structures constituting the spermatic cord. The sac is drawn out through the abdominal wound, and is removed after a ligature has been applied to its neck, or the sac may be cut away and the peritoneal aperture closed by a continuous suture. The inguinal canal is now identified and readily explored with the finger, being large and patulous in large herniæ of long standing. By means of a curved needle, with a slot at one side leading to the eye, a series of sutures is passed connecting the conjoined tendon and the transversalis muscle above with Poupart's ligament below. As these sutures are being passed the structures of the spermatic cord are displaced outwards. The retraction of the outer margin of the abdominal wound relaxes the conjoined tendon very fully, and facilitates the apposition with Poupart's ligament. The ends of the sutures having been cut short, the operator examines the internal abdominal ring, and if

it appears unduly patulous an extra suture is introduced as before, but preferably at the outer side of the spermatic cord. The retractors are now withdrawn, and the rectus muscle is allowed to resume its natural position, but, in addition, I connect its outer border by means of a few sutures with the deep aspect of the transversalis tendon. The margins of the divided rectus sheath in front are brought into apposition and sutured, and, finally, the skin wound is closed by a continuous subcuticular suture of silkworm gut.

So far I have alluded only to the inguinal variety of hernia, but a similar form of procedure may be carried out for the radical cure of femoral hernia. Through the same form of abdominal incision the upper or abdominal aspect of the femoral canal is exposed. By gentle traction the hernial sac, emptied of its contents, is drawn up somewhat, opened, and separated from its surroundings. It is then closed at its neck, and the fundus removed as before. Two or three sutures of silk are now passed by means of a special needle which I have devised for this purpose, through Poupart's ligament in front and Cooper's ligament behind, and the femoral ring is closed. In some of my cases, for greater security, I have passed these sutures through holes drilled in the pubic bone. An ordinary bone awl answers well for this purpose. I am aware that a method for dealing with femoral hernia somewhat similar to the above has been described by Mr. Mayo Robson ("Year-book of Treatment, 1904"), but it differs from mine in certain important respects, into which I need not now enter.

In conclusion, I have only to indicate the points in favour of the operations which I have just described.

1. In approaching the inguinal or femoral hernial aperture on its abdominal aspect the method of procedure

just described does not entail any division of muscle, nor the sacrifice of any nerve or blood vessel of importance.

2. It affords good access to the inguinal and femoral rings. These can be closed as I have described in a very secure manner, and, in the case of an inguinal hernia, the abdominal wall is effectively strengthened at a place where it is naturally weak and yielding.

3. This method of dealing with inguinal herniæ appears to me particularly well adapted to those which are of long standing—viz., those in which the inguinal rings are dilated and have closely approximated to each other. At first my idea was to employ this operation only for such cases, but, with increasing experience, I am inclined to give it a wider application.

4. It is singularly well adapted to femoral herniæ. Indeed the method of closing the femoral ring which I have described is, in my opinion, as near the ideal as possible.

Against these methods of performing herniotomy, but more especially in connection with inguinal hernia, the objection may be raised that they are somewhat difficult. Whatever difficulty there is is met with in passing the sutures through the conjoined tendon and Poupart's ligament, but this may be largely minimised by seizing the latter with a vulsellum forceps and making slight upward traction as the suture needle is passed beneath it. Much of the ease with which the operation may be performed depends upon thorough relaxation of the abdominal muscles under the anæsthetic. It is easier also in a spare patient than in one whose abdominal wall is very thick and loaded with fat.

MR. JAMESON JOHNSTON expressed himself in favour of Bassini's operation, as he considered it the simplest, most scientific, and

the easiest. He regarded the objection to dividing the aponeurosis of the external oblique in this operation as more or less theoretical. Mr. Taylor's operation would probably be a good one in old herniæ, in which the internal abdominal ring approached the middle line.

MR. T. E. GORDON considered there was no one method of operation for hernia. Mr. Taylor's method was not suitable in the case of a congenital hernia in a young child. He believed that many of the operations practised were hopeful as regarded ultimate success. The essential thing in these operations was asepsis.

SIR THOMAS MYLES referred to the valve-like nature of the inguinal canal. So long as its anterior and posterior walls remained in contact and the muscles are sufficiently tense a hernia was unable to push these walls apart. He thought there was a hereditary predisposition to hernia. The valve-like closure of the canal, due to muscular action, was essential, and that being so, no amount of suturing of the conjoined tendon to Poupart's ligament would provide an obstacle to recurrence, because sufficient space had to be left to permit the cord to pass.

MR. BLAYNEY was of opinion that the weakness of the abdominal wall in the inguinal region was for a special purpose—viz., to allow the thin fascia transversalis to be pushed against the external oblique when the intra-abdominal pressure was increased.

MR. TAYLOR, in reply, stated that he believed his method of operation was best suited for large, well-developed inguinal herniæ, in which the inguinal canal had undergone marked changes in size and direction. As bearing upon the success of the procedure he thought it of importance to mention that the sutures in the conjoined tendon should not be tied too tightly, and that the parts should be kept at rest for a sufficient time afterwards to permit of healing taking place. Patients were frequently allowed to get about too soon after herniotomy; absolute rest for at least a fortnight was desirable. As to the mode of development of an inguinal hernia, he thought it probable that there was in many instances a degree of congenital weakness at the internal abdominal ring, in consequence of which the latter went on increasing in size. There was such a thing as a hernial type of abdomen, and it was in such cases that

weakness or dilatation at the internal abdominal ring was most likely to be found. Upon the hernia commencing to develop, the conjoined tendon and the fascia transversalis yielded more and more, and the inguinal passage became progressively larger and less oblique in its direction.