AN OPERATION FOR THE RADICAL CURE OF UMBILICAL HERNIA.¹

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The results of operations for the radical cure of umbilical herniae in adults have not been encouraging. These patients are usually obese, with attenuated abdominal muscles, and the thin, rigid character of the ring does not offer mechanical conditions advantageous to lasting union.

The principles of closure have been the same as after an ordinary abdominal section, the object being to split the fascia at the ring margins laterally, until the recti muscles are reached, and then by a series of buried sutures to reconstruct the abdominal wall in layers. The defect in this method is the natural separation of the recti muscles at the level of the umbilicus. Below this point the muscular structures are practically in contact, but above there is from one-fourth to three-fourths of an inch separation. To bring the recti together in this locality amounts to a muscle transplantation. In a small hernia this muscular approximation is not difficult, but in the larger openings, an inch or more in diameter, it is impracticable; and so far as I have been able to judge, the attenuated muscles, when secured, are not of great value as retentive agents in this variety of hernia. In very corpulent subjects the muscular separation is greater. If such a patient, lying on the back, be directed to rise, bringing into play the recti muscles, the lateral deviation at the level of the umbilicus is easily shown, and in the majority of cases demonstrates the impossibility of bringing them firmly into median apposition.

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Fig. 1.—Showing exposure of hernia and lateral incisions.
Fig. 2.—Peritoneum sutured.
Louis Championnière, after making a plea for operation in the acquired umbilical hernia of adults, well says that, although the operation frequently fails, the relapse is less uncomfortable to the patient, and has less danger of strangulation than the original hernia. This is especially true of relapses after division of the umbilical ring; the return partakes more of the nature of a ventral hernia; the internal opening being nearly, if not quite, the diameter of the protrusion. The late Grieg Smith (Annals of Surgery, 1895) directed that the incision should be made over the thinnest part of the umbilical sac, and this advice seems to have been generally adopted.

Ransohoff, in a practical paper (Medical Record, 1897), calls attention to the loss of time in dissecting down through one of these protrusions filled with adherent viscera, in danger constantly of wounding important structures, and lays down the principle that the incision should always be made into the free abdominal cavity at the neck of the hernia. This at once allows an inspection of its contents and return of intestinal coils, if present. The adherent omentum can be ligated at the internal opening, saving both time and trouble. In strangulated conditions, as pointed out by Barton, the knuckle of pinched intestine is usually in the centre of the adherent omentum, and with this form of incision the operator is in no danger of injuring the bowel. Ransohoff used silver wire in his reported cases as permanent sutures, and we have followed the same plan. Silver wire buried in bone and aponeurosis seldom gives trouble, because it lies in fixed tissues; although in movable structures, like muscle, atrophy necrosis may occur and necessitate its removal. Wheaton (St. Paul Medical Journal, December, 1900) advocates operation in the larger varieties of umbilical hernia on account of the extreme disability which it causes, and in this class of cases brings up the question as to the return of the contents of large hernias, especially when they have been irreducible for more than two years. In this time, he says, "The extruded viscera has lost the right of habitation," and recommends that before operation the patient
be kept in bed for several weeks, and means taken to reduce the body weight. We have followed this method, and after removal of sufficient omentum have seldom had trouble in returning the hernial contents.

In a paper read before the Academy of Railway Surgeons, October 4, 1898, and published in the Annals of Surgery for January, 1899, I called attention to the impracticability of covering in the defect, left by excision of the larger umbilical hernia, with muscle, and advocated the overlapping of the aponeurotic structures which were already at hand, securing a wide area of adhesions in place of edge to edge union. This method we had then employed in five cases; in three the overlapping was from side to side, and in two from above downward. Extensive lateral incisions to find sufficient muscle to make the routine operation described by surgical writers compelled us, as a matter of necessity, to overlap from above downward, and, to our satisfaction, we found the parts came together with less tension than when drawn laterally, and time proved that the strength of union was as lasting.

The first of these overlapping operations was done in 1895. We have now made this operation nineteen times, ten times overlapping from side to side and nine times from above downward. The larger openings have usually been more easily closed by the latter method. The principle employed is not unlike the Championnière operation for the radical cure of inguinal hernia. In Championnière's method the external oblique is overlapped in a similar manner to the operation described, and Championnière's results in 800 cases have not been excelled.

The method of radial cure of inguinal hernia suggested by E. W. Andrews also depends upon the overlapping of the fascia of the external oblique for its success.

The umbilical operation is performed as follows:

1. Transverse elliptical incisions are made surrounding the umbilicus and hernia; this is deepened to the base of the hernial protrusion.

2. The surfaces of the aponeurotic structures are care-
Fig. 3—Aponeurosis sutured.
Pic 4—Aponeurosis sutured second time with Gut sutures.
fully cleared an inch and a half in all directions from the neck of the sac.

(3) The fibrous and peritoneal coverings of the hernia are divided in a circular manner at the neck, exposing its contents. If intestinal viscera are present, the adhesions are separated and restitution made. The contained omentum is ligated and removed with the entire sac of the hernia.

(4) With forceps the margins of the ring are grasped and approximated; whichever way the overlapping is more easy of accomplishment, suggests the direction of closure. The figures show the overlapping as done from above downward.

(5) For this approximation an incision is made through the aponeurotic and peritoneal structures of the ring extending one inch or more transversely to each side, and the peritoneum is separated from the under surface of the upper of the two flaps thus formed.

(6) Beginning from one to one and one-half inches above the margin of the upper flap, three to four silver-wire mattress sutures are introduced, the loop firmly grasping the upper margin of the lower flap; sufficient traction is made on these sutures to enable peritoneal approximation with running suture of catgut. The mattress sutures are then drawn into position, sliding the entire lower flap into the pocket previously formed between the aponeurosis and the peritoneum above.

(7) The free margin of the upper flap is fixed by catgut sutures to the surface of the aponeurosis below, and the superficial incision closed in the usual manner. The lateral approximation is carried out by sliding one side under the other in the same manner. In the larger herniae the incision through the fibrous coverings of the sac may be made somewhat above the base, thereby increasing the amount of tissue to be used in the overlapping process. In only one case were we unable to satisfactorily close the opening as described, on account of the large size of the umbilical ring. In this case less than one-half an inch of overlapping was secured, and that under great tension; the result was a boat-shaped stretching of the united parts, but the symptomatic cure was excellent. The results
in the other cases, so far as known, have been good, although many of them are too recent to be called cured, and possibly relapses will occur.

Piccoli (Centralblatt für klinische Chirurgie, January 13, 1900) reports a case successfully operated upon in August, 1899, after a similar plan, and refers to a case reported by Bonomo, operated upon December 9, 1899, with a favorable result. J. A. Blake (Medical Association of Greater New York, January 14, 1901) reports several cases operated upon by the same method during the year 1900, and refers to an article by Sapiejko (Rev. de Chir., 1900, No. 2, p. 240) in which an identical operation is described. It is evident that a number of operators have independently worked out the idea, all reporting favorable results.