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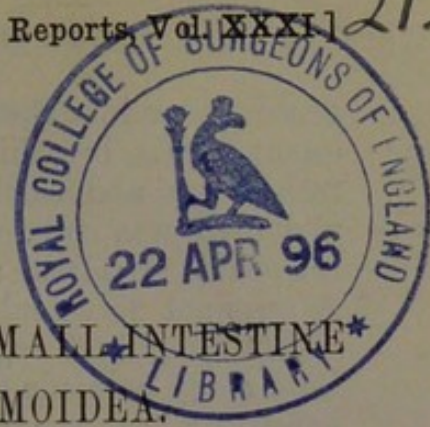
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CASE OF  
STRANGULATION OF A LOOP OF SMALL INTESTINE  
IN THE FOSSA INTERSIGMOIDEA.

BY

W. McADAM ECCLES.

The passage of intestine into the intersigmoid fossa and strangulation by the margins of the opening is a rare occurrence, and the following case is therefore worthy of record.

A man aged 53 was admitted into the West London Hospital under my care on August 18, 1895, suffering from well-marked symptoms of intestinal obstruction. He gave the following history of his illness:—For many years he had suffered from double inguinal hernia, for which he had worn a truss, and the instrument at most times answered its purpose satisfactorily. Both herniæ were easily reducible. On August 14, four days before admission, whilst he was coughing, the left rupture came down, and he found he was unable to reduce it. He says it felt very hard and was very tender and painful. Soon after its protrusion he began to vomit, and nothing passed per anum; the pain also increased in severity at the seat of the hernia, and spread to the abdomen.

He was soon after taken to the Cottage Hospital near where he lived, and admitted. He was seen by the surgeon with very little delay, and after some considerable difficulty the hernia was reduced by taxis.

The vomiting and the pain, however, still persisted, and his bowels were only slightly opened by an enema, neither fæces nor flatus passing naturally.

The pain did not subside, and the vomiting, which at first only came on after attempts to take food, occurred much more frequently.

All the symptoms continued up to the time of his admission into the West London Hospital.

He then exhibited the following symptoms:—His face wore an anxious expression, and was also in other ways typical of

acute abdominal disturbance. The pulse was small and frequent. His breathing was markedly thoracic. The tongue rather dry and thickly furred. Temperature 98.2° F. The abdomen was full, being evenly distended, and everywhere resistant. No local swelling or induration could be made out. A resonant note could be elicited over the whole surface.

Both inguinal regions were empty, no thickening of any kind could be made out, but on invaginating the scrotum both external rings were found to be much enlarged, and the inguinal canals could be easily entered and were discovered to be empty. There was no swelling in either femoral region. The patient vomited after admission, and the ejected matters had a distinctly fæculent odour. The urine was normal.

Seeing that there were evident symptoms of intestinal obstruction, and that nothing could be palpated in the hernial regions, I decided to explore the abdominal cavity by a median laparotomy, rather expecting to find the results of a reduction *en masse*.

After the patient had been placed under the influence of ether, an incision in the middle line was made of some four inches in length below the umbilicus. The abdominal wall was fairly well nourished and rather hyper-vascular. On opening the peritoneal cavity, blood-stained odourless fluid escaped. The left iliac fossa was explored. The left internal abdominal ring was not occupied by any protrusion and admitted the finger.

Lying, however, rather higher up in the fossa, and at the posterior part of the abdomen, was a firm resistant mass, into which could be traced small intestine, one part of which was distended and the other collapsed.

It was plain that this constituted the seat of obstruction.

A closer examination revealed a tightly constricting edge, which afterwards proved to be the margin of the aperture of the intersigmoid fossa.

The tight sharp ring was carefully snipped with a pair of scissors, and the gut slowly drawn out of its grasp.

A loop of small intestine was thus liberated, which was intensely congested with a length of about half-an-inch in its middle, black and gangrenous.

The whole loop measured about four inches, and it was brought out of the abdominal wound.

Two pieces of rubber drainage tube of small calibre were passed through the mesentery, close to the intestine, at points which were some three inches beyond the congested part on either side.

The gangrenous piece of bowel, with the œdematous portion, was entirely excised, together with a V-shaped piece of mesentery. The contents of the upper dilated portion of small intestine were allowed to freely escape through the open end, and when fairly empty the rubber tube was drawn tight and secured at both places.

The extremities of the healthy bowel were now united by Maunsell's method.

The loop being washed and returned, the peritoneal cavity was sponged out and the abdominal wound closed.

The patient stood the operation, which lasted fifty minutes, very fairly well, and rallied afterwards.

The vomiting and pain, however, recurred some six hours after the patient returned to the ward, and he died of exhaustion about twelve hours later.

The post-mortem examination showed some general peritonitis, most marked in the region of the sigmoid flexure, which was itself thrown over to the right side of the body. There were no evidences of old peritonitis in the form of adhesions, all the inflammation present being of a recent nature. The sutures used in the anastomosis had held well, and there was but little distension of the gut above the resected portion.

The unsuccessful termination of this case was not unlooked for, the occurrence of gangrene of the bowel being always of the very gravest import. The method used for the intestinal anastomosis is certainly one which is very efficient, and remarkably easy and rapid in its accomplishment. This patient, like so many others, really perished for want of early surgical interference when there were persistent signs of strangulation.

The fossa intersigmoidea is formed in the meso-sigmoid, and has its aperture on the under surface, or, more strictly speaking, on the left side of this portion of the mesentery.

This fossa was distinct in at least half of the subjects examined in the Rooms during the years 1892-94, the exact percentage being 53. This accords almost exactly with the researches of Mr. Treves, who gives 52 per cent. as his results.

In the foetus the fossa is undeveloped. The sigmoid artery passes obliquely down from the inferior mesenteric artery behind the peritoneum, then enters the meso-sigmoid, and there breaks up into several branches. In its course in the mesentery it makes a well-marked fold, which can usually be clearly seen even if no fossa be present. When the fossa is in existence the fold is accentuated.

It seems probable that after birth the length of the omega loop increases, with a corresponding development of the meso-

sigmoid, but not accompanied by a contemporaneous elongation of the sigmoid artery. A slight depression is thus produced by the meso-sigmoid being drawn up, and this may subsequently be developed into a well-formed fossa. As far as I have observed, subjects having a short meso-sigmoid—that is, one less than two inches from the parietes to the bowel—have but poorly marked intersigmoid fossæ, and conversely those with a long mesentery to the flexure have deep fossæ; but further observations on this point would be interesting.

The fossa itself is most commonly placed at the point where the mesentery of the omega loop lies over the division of the left common iliac artery, and therefore just internal to the left psoas magnus muscle.

Frequently, if there be but little extra-peritoneal fat, the left ureter may be seen through the layer of peritoneum forming the floor of the pouch.

The sigmoid artery usually lies above the fossa and to its right; if there be more than one sigmoid artery, as is not infrequently the case, the fossa is shallower than ordinary.

The pouch, which, as it will be easily understood, varies very considerably in depth, being seldom more than one and a half inches long, has its direction downwards and towards the left.

The margins of the orifice are very sharp, and form an oval or round aperture, admitting in the majority of cases the last phalanx of the forefinger. These margins are commonly devoid of any blood-vessels.

In some much rarer instances the fossa is of considerably larger size, and it is probably always so in those cases in which strangulation of the bowel takes place within it.

According to Mr. Treves, the fossa is not infrequently obliterated by adhesions. The but rare occurrence of a prolapse of bowel into, and strangulation by the edges of the opening of the fossa, is, as has been pointed out by Waldyer,<sup>1</sup> due to several reasons.

Firstly, in the normal position of the sigmoid the mouth of the fossa is placed out of the way of the coils of small intestine, and it is only when the loop happens to be thrown over to the right that its opening tempts prolapse into it. Secondly, the fossa itself is only occasionally large enough to contain a knuckle of intestine. Thirdly, the margin of the aperture has a tendency to act as a valve, so closing the entrance.

Strangulation in the fossa duodeno-jejunalis appears to be rather more frequent than in the intersigmoid fossa.

<sup>1</sup> Virchow's Archiv, Band lx. S. 66.

The following points are of interest in connection with the case under consideration: there was no undue lengthening of the meso-sigmoid, a condition which, as has been stated above, seems to tend to make the fossa deeper. There were no adhesions produced by old peritonitis which might have led to the formation of a spurious fossa; in fact, the absence of adhesion even about the left internal ring is somewhat remarkable, seeing the patient was the subject of a left scrotal hernia of some standing.

The tightness of the strangulation was extreme, showing that once a loop of bowel has become imprisoned it will be very seriously affected in a comparatively short while; hence the necessity for an early exploration in cases where the diagnosis of internal strangulation is obscure.

The ease with which Maunsell's method of resection and anastomosis can be effected, especially when the proximal portion is dilated, is an important factor in the choice of a method for dealing with such cases; and it is obviously suitable for instances where a junction of two divided ends of intestine has to be made in the absence of any special mechanical apparatus.

The fatal result in this case was in no way, in my opinion, due to the method employed, but rather to the late period at which the operation had necessarily to be undertaken.

I have to thank my late House-Surgeon, Mr. R. Shepard, for the notes of the case, which he so ably took.

