REMOVAL BY OPERATION
OF A
GANGRENOUS APPENDIX VERMIFORMIS
CONTAINING A FÆCAL CONCRETION.

SECONDARY LAPAROTOMY THROUGH THE LINEA ALBA FOR
SUPPURATIVE PERITONITIS. RECOVERY.

BY
SIR DYCE DUCKWORTH, M.D.,
AND
JOHN LANGTON, F.R.C.S.

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ARTHUR S—, æt. 16, was admitted into St. Bartholomew's Hospital on November 8th, 1888, under the care of Sir Dyce Duckworth, suffering from pain in the abdomen. His past history was good, as was also his family history.

His present illness dates from November 3rd, when he had a large breakfast of sausages and minced meat. Not long after he was seized with pain in the abdomen, followed by vomiting and diarrhœa. He took some castor-oil on the morning of the 5th, after which his bowels were opened, but have not been since. He vomited again on November 6th and 8th. He has lost his appetite and sleep.

The patient is fairly well-nourished, lies quietly in bed,
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curled up on his right side, with his knees drawn up. He is drowsy and answers questions slowly but accurately. Complains of pain in the lower part of the abdomen. Pulse 100°, temp. 99·6°.

The abdomen is slightly distended, and tympanitic on percussion. On palpation nothing can be felt, but there is some tenderness in the lower part of the abdomen, perhaps more marked on the right than on the left side. The rectum is empty, but on the right side of the pelvic cavity and above it can be felt a somewhat resistant mass, which is tender to the touch. He was given small doses of opium.

At midnight he had some spasmodic attacks of pain in the lower abdominal region, which lasted some minutes. His aspect is sunken, indicative of abdominal trouble. Pupils small, but equal. Lips dry, covered with brown sordes. Tongue dry and brown, except at the tip and edges, where it is red.

The lungs and heart-sounds are fairly normal.

Abdomen : The girth at the umbilicus is twenty-five and a quarter inches; more tumid than in the afternoon. Dilated veins, especially distinct over the right iliac fossa, are seen on the surface running vertically upwards along the side of the abdomen to the thoracic veins. Tympanitic note all over the abdomen, except for two inches above the pubes. There is a slight projection of the abdominal walls just internal to the right anterior superior iliac spine, which is tympanitic. The abdomen is tender generally, but most so in the neighbourhood of the swelling. He has passed about five ounces of urine, but with pain and difficulty. Urine 1·025, acid, slightly turbid, and contains a faint trace of albumen. No vomiting since admission.

November 9th.—Vomited twice early this morning. Has had several sharp attacks of pain in the abdomen, more on the right than on the left side. Passed flatus, but no motion. Abdomen still distended, but the superficial veins are not so marked. Mr. Langton was asked

to see the case in consultation with Sir Dyce Duckworth, and after the bladder had been emptied the patient was carefully examined, when they came to the opinion that the symptoms pointed to trouble in the neighbourhood of the cæcum, probably in the appendix vermiformis, and that operation was called for.

The patient was removed to the operating theatre, and placed under an anæsthetic. An incision was made in the right linea semilunaris over the iliac fossa. The peritoneal cavity was opened by an incision three inches in length, when some flaky lymph was exposed. On examining the cæcum about an ounce of very fetid pus welled up, and after it was all evacuated it appeared that the appendix vermiformis was gangrenous to the extent of two thirds of its length. In the tube at the junction of the gangrenous and healthy portions was felt a solid body, which proved to be a fæcal concretion. The healthy appendix was very lightly ligatured, so as to obstruct its lumen, but not sufficient to strangulate its blood-vessels. The gangrenous appendix with its contained concretion was removed, the mucous membrane, and subsequently the serous surfaces, were separately sutured. The portion of the abdominal cavity around the cæcum and its neighbourhood was freely washed out by several quarts of hot Sanitas water at a temperature of 100° F., the coils of the agglutinated intestine being gently separated, so as to allow the enclosed pus to escape whilst the abdomen was being washed out. A drainage-tube was inserted into the peritoneal cavity, and the edges of the wound were brought together by carbolised sutures. The wound was dressed with iodoform gauze.

The concretion, which was the size of a cherry-stone, consisted of inspissated fæces.

The patient was given one grain of Ext. Opii every four hours until 5 a.m. He slept from 11 to 5, and was fed by nutritive enemata every six hours.

11th.—Wound was dressed twice to-day, and some pus came away. Bowels opened at 5 p.m.

The patient progressed well up to November 17th, the temperature up to this time being subnormal. On this date the patient complained of pain in the region of the wound. Half a grain of the extract of opium was administered, but the pain increased. On removing the dressings the house surgeon found a large blood-clot distending the wound. The clot was removed, and as the source of the hæmorrhage could not be discovered, the tube was replaced by a plug of iodoform lint, and the wound tightly bandaged. In the afternoon the wound was dressed, and a quantity of dark clot and grumous blood was removed, but there was no further hæmorrhage.

22nd.—The patient's temperature rose early in the morning, and on dressing the wound more pus than usual escaped, but otherwise the wound looked well.

23rd.—There is a slight fulness with tenderness in the left iliac region. Temperature normal. Pulse 72.

25th.—Slept well. The swelling in the left iliac fossa is less marked and not so tender; otherwise well.

26th.—Patient slept fairly well, but has complained of pain in the left side of the abdomen. On examination the swelling in the left iliac and hypogastric regions was found to have increased and to be more tender. The average temperature for the last two days has been considerably higher, and his general condition is not so favorable. A rectal examination did not reveal anything.

On these general grounds Mr. Langton believed that there was some localised suppurative peritonitis on the left side, probably due to an extension of the original peritonitis, and therefore advised a laparotomy in the median line. This was done by making an incision through the linea alba for about two inches, midway between the umbilicus and the pubes. The peritoneal cavity was carefully opened so as to avoid injuring any part of the intestines which might be adherent to the abdominal wall. Immediately on the division of the peritoneum a large quantity of extremely fetid pus was evacuated. The encysted pus was contained in a cavity

which extended to a considerable depth towards the left iliac fossa and down into the pelvis, but not in the direction of the right iliac fossa. The pus was apparently shut off from the general peritoneal cavity by adherent intestine, which localised the suppuration.

The cavity was freely washed out with warm water. A Keith's drainage-tube was inserted into the abscess cavity, and Keith's dressing was also used.

27th.—A large quantity of sero-pus escaped. The bowels have acted once this morning. The cavity was irrigated with Sanitas water.

December 3rd.—An india-rubber tube was substituted for the glass tube.

6th.—There is some induration in the left iliac fossa just above Poupart's ligament. With this exception he is doing well.

February 6th.—The indication mentioned in the last note subsided in the course of a few days, and the patient is doing well in every way. Since December 12th the patient has gained 12 lbs., weighing now 5 st. 3 lbs. The first incision has completely healed for some time, the second one has a sinus extending down for three inches. He is allowed to get up.

23rd.—The sinus has lessened to about an inch in depth. The patient is now quite convalescent.

Remarks by SIR DYCE DUCKWORTH.

The history, physical signs, and general condition of the patient appeared to indicate very plainly that he was suffering from typhlitis, and there was every reason to fear that a general and fatal spreading peritonitis would soon supervene.

The case appeared to me a suitable one for abdominal section, and exploration of the parts about the caput cæcum coli, with the prospect of finding disease of the vermiform appendix. Mr. Langton agreed to this opinion, and urged

the operation. I entertain no doubt that if surgical interference had been delayed for twenty-four hours a fatal issue would have ensued, and no measures other than those taken could, as the operation disclosed, have proved of any avail.

The result was eminently satisfactory and encouraging. In by far the majority of cases of this kind the appendix is found to be the focus of the mischief, and if by chance one attack is permitted to subside, it is almost certain that recurrent inflammation will be set up subsequently, and no recovery be ultimately secured. Under such circumstances it is plainly the duty of the physician to hand over the case to the surgeon to be dealt without further medical treatment or delay.

Remarks by Mr. LANGTON.

Mr. Treves has estimated that in 70 per cent. of cases of Typhlitis the trouble lies in the appendix vermiformis, and Dr. Fenwick's tables further show that out of 129 cases in which examination had been made, concretions, hardened fæces, and foreign bodies accounted for forty-seven cases. As this was the first attack the lad had suffered from, and as there was no evidence of any tubercular disease elsewhere, we had a good inference for thinking that some concretion was the exciting cause.

I selected the right linea semilunaris as the best site for the incision, as it would enable me to open the peritoneal cavity without being too near the appendix, where adhesions were not unlikely to exist. This is, I believe, a better place for the incision than one through the linea alba, so strongly advocated by Dr. Gaston in the 'Journal of the American Medical Association,' vol. ii, 1887. It is more advantageously situated for a complete examination of the appendix and its surroundings, and affords a better basis for manipulation. It is not, however, so convenient for washing out the peritoneal cavity, should the suppurative peritonitis be diffused.

The appendix is liable to large variations as to length and position, as to freedom and attachments, but its normal direction is upwards and inwards behind the cæcum, and is consequently more accessible by an inguinal than a median incision.

Most surgeons are agreed that it is preferable to defer surgical interference until the acute symptoms have subsided, but in this instance we had no option, for the patient was already beginning to show signs of perforation.

Viewing the unfavorable statistics of this lesion of the appendix and the nearly certain outlook of recurrence, we think that operative interference should be undertaken more promptly as affording the patient the best chance of recovery. Early operations would moreover find the parts much less firmly matted together and render the operation less formidable than when undertaken after several attacks. Should pus be found around the appendix or among the coils of the matted intestines, drainage would, we think, afford greater security, but, if otherwise, the abdominal wound should be sutured and closed.

The second attack of suppurative peritonitis was due, probably, to an extension from the original seat of the lesion of some confined pus which had not been released from between the intestinal coils at the first operation.

This patient did not exhibit a symptom which has been occasionally observed and which is stated to indicate perforation, viz. marked pain in the genital organs, cases of which have been recorded by Dr. Tiffany and Dr. Gaston.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. i, p. 142.)