A COMPLICATED CASE OF APPENDICITIS.

By SIR EDMOND S. STEVENSON, M.D., F.R.C.S. EDIN.,
RONDEBOSCH, CAPE COLONY.

Of all the surgical diseases there are few, if any, which present the same constant similarity of symptoms, which result in so many different pathological changes, and lead to such a variety of complications as acute appendicitis. The following is an illustration:

Miss Z., a school teacher, aged 23, had been for several months failing in health, losing flesh, anaemic, suffering from some vague abdominal pains, and from an offensive vaginal discharge. When seen with Dr. Syfret, of Mowbray, her medical attendant, she had been ill for five days, presenting all the classical symptoms of acute appendicitis. The case was urgent, and immediate surgical interference suggested, but as her physician thought that there were signs of improvement, and because she was in a very septic condition and her parents wished for delay we agreed to wait. Two days later, the symptoms getting worse, she was operated upon. Inside the peritoneal cavity coils of small intestines were seen glued together, and on dealing with these a sac was opened containing a good deal of pus, and on a higher level another cavity was entered and more offensive pus let out. As the appendix could not be felt, the caecum firmly anchored down, and the patient's condition septic, nothing further was done; the sacs were cleaned with gauze and drained with split tubes. The immediate results were satisfactory. The drainage tubes were removed on the tenth day, the discharge having stopped. The wound looked very unhealthy.

On the fifteenth day the temperature began to rise and the abdomen to swell, but there were no special pains. This condition lasted a fortnight, and she was then operated on again. The delay in operating was due to the unhealthy condition of the wound, the greater part being covered with grey sloughs. To try to asepticize this was almost an impossibility. The wound was painted with tincture of iodine and covered over with sterilized plaster, and the skin sterilized in the best way possible. The new incision was made outside the former one so as to enable one to work from without inward. The caecum was fixed and adherent to the lateral wall and not covered by peritoneum. Carefully dissecting always inward, a grooved cavity was reached, and in it a faecal concretion the size of a hazel nut found; no appendix could be seen, but low down in the pelvis the end of the appendix was felt adhering to the right tube or to the uterus; I could not tell which, for whilst attempting to solve this question the appendix gave way. From the terminal end to its origin the appendix was pocketed in a mass of adhesions. The appendix was then dissected upward, leaving in some places its peritoneal covering behind. I could not find any trace of its mesenteriole. The pocket was cleaned out and the external wound sewn up without drainage. The appendix was large and ruptured in two places—at its end and a little higher up where the adhesion had taken place and where the concretion had escaped. The wound healed by first intention, but the first wound remained very unhealthy.

A week after this last operation the temperature began to rise and the lower part of the abdomen to swell, and in addition to this there was some indefinite pain in the right renal region. The abdominal cavity was then reopened by an incision through the right rectus extending for 6 in. above the umbilicus. Every inch of the abdominal cavity was explored by touch and by sight whenever possible. Nothing could be found to explain the cause of these symptoms. The liver appeared to be normal; the right renal pouch gave no indication of mischief; bowels and stomach were healthy, and the spleen and pelvic organs were normal. The needle of an aspirator was introduced in three directions: (1) into the liver; (2) between the ninth and tenth ribs posteriorly, aiming at the subphrenic space through the diaphragm; and (3) through the fifth and sixth ribs into the pleura. The two first explorations aspirated pure blood, the last pleuritic fluid. The abdominal wound was sewn up and healed by first intention. The symptoms then became distinctly hectic, with steeple temperature and profuse perspirations. The pulse was rapid and small, and at this time she complained of slight pain and discomfort about the suprahepatic region. A careful examination gave no indication of mischief in the right chest.

Four days later a small abscess appeared at the site of the diaphragmatic puncture. The abscess was opened and a small quantity of pus let out. Two hypodermic injections of antitoxin were given with no obvious result. A much larger abscess formed at the same place as the other; this was opened under cocaine, and a large quantity of dark offensive pus escaped; a small drainage tube was introduced. The first wound still looked very unhealthy. The patient, who was very weak and hectic, was suddenly seized with a violent cough, became breathless, and brought up pus and blood; an injection of morphine relieved somewhat the severity of these symptoms, leaving her exhausted and restless. At that stage some small crepitation and dullness was heard at the right base, and from the nipple upwards drum-like resonance and other signs of pneumothorax. Twenty-four hours after the first attack she

had another but milder one. She was then without delay put under anaesthesia, laid on her left side, and the abscess opened along the drainage tube. During the operation respiration was very bad; the face and hands almost black, and mucus and pus escaped through the mouth. Part of the ninth rib was resected, the bone was denuded of periosteum. The diaphragm could be seen pushing the pleura upwards. A sinus forceps was pushed through the muscle and some pus escaped; a pair of dressing forceps was then introduced and opened, giving vent to a large quantity of dark-coloured, offensive pus. Two large rubber drainage tubes were introduced into a cavity measuring about 3 in. in depth and kept in position, one by a catgut, the other by a silkworm, stitch. From that time all bad symptoms rapidly abated and disappeared; the cough ceased, and all pulmonary trouble left her. The catgut drain was removed after four days, the silkworm at the end of ten days. It is now six months since the last operation was performed, and she is in perfect health.

This case illustrates well my point that whilst ordinarily it is easy enough to diagnose inflammation of the appendix, it is impossible to foretell what you are going to find and what complications will have to be met.

The case has many points of special interest. The adhesions of the appendix to the tube, the disappearance of the offensive vaginal discharge after the operation, together with abdominal pains and failing health, point to the probability of chronic appendicitis leading to adhesion of the appendix to the right Fallopian tube, and subsequent rupture and discharge into it. Mr. Bland-Sutton lately described this condition well in the *BRITISH MEDICAL JOURNAL*.

The second point of interest is the double rupture. It is clear that the one at the apex of the appendix occurred first, and that the second, which brought on the acute attack, was caused by the pressure of the large faecal concretion, leading to gangrene of that part and rupture. Judging from the pathological conditions found at the first operation—the adherent and uncovered caecum—the tendency of the septic tract would have been to infect the right renal pouch, as indeed was suspected at first. The infection in this case must have been conveyed by means of lymphatics.

It was very fortunate for all that pus found its way through the aperture made by the aspirating needle, which made the last operation so much easier and shorter. But above all is the wonderful power of recuperation of the patient, considering that she had been ill for a long period previously, and had to undergo four very severe operations whilst in a toxic condition, and taking further into consideration the last phase of the disease, the rupture into the lung of an abscess which contained matter most likely extremely septic, causing severe shock, pneumothorax, and pulmonary infection.

THE IMPORTANCE OF THE COLON,

AS SHOWN BY A CASE OF ULCERATIVE COLITIS TREATED
BY OPERATION.

By M. S. MONIER-WILLIAMS, M.A. OXON.,
M.R.C.S., L.R.C.P.

In an address entitled *Clinical Remarks Round About Constipation*, delivered by Dr. J. F. Goodhart on October 15th, 1902, and subsequently published by him, the following words occur: "I would not mind arguing the point with any one that the colon is the most important organ in the body." On the other hand, Metchnikoff in *The Nature of Man*, quoted by Sir James Barr in the *BRITISH MEDICAL JOURNAL* of January 20th, 1906, says: "Some very large parts of our alimentary canal must be regarded as useless inheritances, bequeathed to us by our animal ancestors. It is no longer rash to say that not only the rudimentary appendage and the caecum, but the whole of the large intestine, are superfluous, and that their removal would be attended with happy results." I think it will be admitted that the history of the case now related goes to show that, of these two entirely contradictory opinions, that of the English physician is the most worthy of acceptance.

The patient will probably be remembered by those members of the Medical Society of London who were present at a clinical evening on November 11th, 1901, as he very kindly showed himself on that occasion. He was 52 years of age when he first came under my care in 1897,

suffering from abdominal pain and diarrhoea, with haemorrhage. The motions, from five to fifteen in number in twenty-four hours, were excessively offensive, semi-fluid in character, and occasionally contained, besides blood and mucus, a little pus. Examination of the abdomen and rectum revealed nothing abnormal. A course of mercury and potassium iodide had no effect. Rectal irrigations of the colon with a solution of silver nitrate (10 gr. to the pint) and of a saturated solution of boracic acid held the complaint in check for a time, and a course of sulphur waters at Llandrindod Wells and also at Harrogate benefited the patient for a little; but on the whole he got steadily worse, until December, 1900, when he was exceedingly ill. He had from 10 to 20 haemorrhagic stools daily, was very emaciated, and had lost control of the sphincter ani. Dr. Hale White, whose knowledge and experience of these cases are well known to be exceptional, considered the case to be the worst he had ever seen, and agreed that right-sided colotomy offered the best chance of saving the patient's life. Mr. G. R. Turner opened the large intestine close to the caecum, and purposely avoided making a spur, as it was hoped to close the opening at a subsequent date.

For many weeks after the operation his condition was one of great suffering. From the artificial anus flowed a greenish-coloured, highly acid, and offensive liquid faecal discharge, which excoriated the skin for some distance round the opening. Ordinary colotomy plugs were quite useless to control the discharge, and it was necessary to invent a contrivance which would conduct the whole of the faeces out of the artificial anus without allowing leakage on to the skin. After much experimentation with Mr. Montague, the instrument maker, the plug now illustrated was devised.

It is made of rubber, and the bulb A is easily crumpled up round the central glass tube B for insertion into the intestine. When in position the bulb and rubber neck C are inflated with air through the tap D by means of a little brass syringe, and the plug is thus retained in its place until the air is let out by turning the tap; W is a section through the abdominal wall. Through the curved glass tube the faeces pass into a celluloid receptacle (not illustrated) modelled to the side of the body and kept in position by a belt. A differently-shaped receptacle can be used at night-time. The apparatus is, on the whole, quite successful, and generally prevents soiling of the skin or clothing. As soon as this plug was fitted the patient rapidly improved; he recovered control over the sphincter ani, and was soon able to follow his ordinary life with but little inconvenience.

His condition about a year subsequent to the operation, that is, in November, 1901, when shown before the Medical Society, was that his general health was quite good, but the colitis was not quite well, as occasionally a little blood and mucus was passed both by the caecal anus and by the rectum. Very little faecal matter passed the plug and so along the large intestine, as much perhaps in a week as would make one small motion.

About six months later, although there was no change in the local condition, he began to lose health. He became emaciated again without any apparent cause, and commenced to go downhill rapidly, so that in September, 1902, he was exceedingly weak and ill, and I was very

anxious about him. It occurred to me that although two years previously his life had been saved by an operation which had secured such a measure of rest for his colon that the serious haemorrhage from which he had suffered was practically cured, he was now in danger of losing his life from want of use of his colon, our interference having deprived him for a prolonged period of time of the functions of that organ. Now the most obvious, and therefore probably the most important, function of the colon is the absorption of water. We know that little, if any, water is absorbed in the stomach, and, looking at the very fluid nature of the contents of the caecum, that the small intestine is probably equally inactive in this direction. The normal evacuation from the rectum is, however, solid, so that a great absorption of liquid must take place in the large intestine. It therefore seemed reasonable to suppose that my patient was suffering from want of absorption of water, and that in this way his nutrition had been gravely disturbed.

To supply the necessary liquid I commenced at the end of September, 1902, to make daily injections into the large intestine of 2 pints of distilled water containing 2 teaspoonfuls of sodium chloride. The injection was made with a funnel, and a soft oesophageal tube, the latter being passed through the caecal opening to about as far as the centre of the transverse colon. The liquid was allowed to flow in very gently indeed, the funnel being kept very low, and twenty minutes at least being occupied in the process. With all this precaution, $\frac{1}{2}$ pint only, on an average, was retained, the remaining $1\frac{1}{2}$ pints being returned through the opening. In this way, daily, for three and a half months, the patient had his colon fed with $\frac{1}{2}$ pint of normal saline solution. I soon had the satisfaction of noticing a great improvement in his health. His strength began to return, and each week he put on a few ounces of weight.

At the end of this period—that is, in the middle of January, 1903—when I was no longer anxious about him, he suddenly developed purpura haemorrhagica. He commenced to bleed from every mucous membrane, except that of the bladder, and there were small haemorrhages into his skin all over his body. Blood poured from his colotomy wound, he vomited and coughed blood, and his gums and nose oozed continuously; $6\frac{1}{2}$ pints of blood were collected in thirty-six hours. The injections were discontinued for a week, at the end of which time, the bleeding having ceased, they were resumed and continued for another two and a half months to the end of March, with occasional intermissions of a day or two about once a fortnight, owing to the recurrence of haemorrhages, chiefly from the gums and nose and into the skin. The blood was examined on two occasions by Dr. Eastes, and found to be quite normal. Notwithstanding the haemorrhages, the patient improved steadily in health and continued weekly to increase in weight.

From April 1st ordinary distilled water, without the addition of salt, was injected daily for three weeks, when a severe attack of purpura haemorrhagica supervened, and the treatment had to be stopped.

It was, in fact, impossible to resume colonic injections, and I determined to try daily hypodermic injections into the axilla. Half a pint of sterile salt solution was injected into the right axilla, followed the succeeding day by a similar quantity into the left, and so on alternately for three weeks, when there was another slight attack of haemorrhage from the gums. The patient so much disliked these hypodermic injections, which caused not a little pain, that he now refused to continue any longer with the treatment. Weight had continued to be added during the time hypodermic injections were used, and in fact he was now exceedingly well.

He had now submitted to eight months of treatment, and during that time had increased nearly a stone in weight, so that he was now, in fact, heavier than ever before in his life, and whereas before the commencement of the treatment of feeding his colon with fluid he was almost moribund, he was now strong, and enjoying as good health as he had ever before known. But the problem was what to do next, as it was clearly impossible to resume either colonic or hypodermic injections. The solution of the difficulty was in the end quite simple and effectual. I instructed the patient to completely block the caecal anus at night-time, by the insertion of a solid glass rod through the centre of his rubber plug, in place of the glass

tube. During the day-time the tube and celluloid receptacle were retained. In this way the contents of the small intestine flowed normally into the large intestine during the night-time, but passed through the artificial anus into the bottle during the day-time. The colon had twelve hours of absorption, and twelve hours of rest, its working hours being of sufficient duration to keep the patient in good general health, and its resting hours sufficient to keep in check the colitis, which, though still not absolutely well, caused no inconvenience. This plan of blocking the plug during the night-time was adopted in May, 1903, and as the patient is still, nearly three years later, in perfect health, I think there is no doubt as to its success.

Three points of great interest arise in connexion with this case:

1. The haemorrhages seemed to be undoubtedly dependent upon the saline and even the plain water injections, but how? No pathologist has yet been able to help me with an answer. The process, whatever it may be, must surely be very complex, looking at the fact that it took three and a half months of injections to produce the effect in the first place.

2. Are we not justified in fearing that the scant respect now shown to the colon by some surgeons may possibly be followed by disaster? What fate may perhaps befall those whose large intestines have been short-circuited, or even boldly removed *in toto*, according to the latest fashion, for chronic constipation, or, one may hope, for greater evils? With regard to entero-anastomosis perhaps sufficient absorption may take place from the sigmoid and rectum to maintain nutrition, but with regard to complete removal of the colon there seems to be no saving clause. As far as my patient, at any rate, is concerned, I am persuaded that, should he cease to block his caecal anus in the way described for a sufficient number of hours in the twenty-four, and so exclude his colon from its duty of absorption, his progress downhill to ultimate death would be sure, if slow. Fortunately in his case he can regulate matters for himself.

3. Do not those people, and there are many of them (chiefly women), who every night take an aperient pill of such a character as to produce on the following day a liquid evacuation, interfere seriously with their own nutrition; and should they not be persuaded to withhold the dose, at any rate, every other night, and so give their large intestines a chance of useful absorption? Certainly these people get very thin. The caecal cesspool is perhaps more worthy of praise than abuse, and at any rate should not be emptied too frequently.

REMARKS ON

A CASE OF LARGE OVARIAN CYSTOMA, WITH TWISTED PEDICLE, COMPLICATED BY SUPPURATIVE APPENDICITIS.

By JOHN T. HEWETSON, M.D., M.Ch., F.R.C.S.,
ASSISTANT OBSTETRIC OFFICER, GENERAL HOSPITAL, BIRMINGHAM.

THE following case, apart from its extreme rarity, illustrates points of such great interest in the production of appendicitis, the effective drainage of localized peritoneal suppuration, as well as other clinical features connected with the diagnosis of the case, that one is certainly warranted in placing the facts before the profession.

E. T., aged 22, has been married twelve months, without family.

Family History.

Father, mother, five sisters, and four brothers are all well and strong.

Past History.

Catamenia commenced at the age of 11, and has been quite regular up to date of her admission to hospital; type twenty-eight days, duration five days. Since her marriage the menstrual periods have been a trifle more profuse. Patient has never suffered from illness or injury prior to her marriage.

Present Illness.

The patient states that her abdomen began to slowly increase in size during the first three months of 1905. One evening in March she was suddenly seized with severe pain in the left side of the abdomen which lasted forty-eight hours. The abdomen during this time appeared to become very much larger. She consulted a medical man in London, who informed

her that she was about four months pregnant. Having migrated from London to Birmingham, she consulted Dr. Faussett on April 6th, with a view to engaging him for her confinement. She told him that she had been getting larger, had felt quickening a week ago, that she had been examined in London and had been told that she was pregnant, in spite of the regularity of her menstruation. An abdominal examination was made by Dr. Faussett, who found a rounded tumour, median in position, partly fluid and partly solid in consistency, rising out of the pelvis and reaching as high as a point midway between the symphysis and the umbilicus. No vaginal examination was made. Without questioning the condition further Dr. Faussett assumed that Mrs. T. was pregnant, and booked her for the last week in July.

Nothing was heard of the case until July 4th, when Dr. Faussett was sent for to attend her labour. Abdominal pain had set in, with loss of blood from the vagina; this corresponded with her menstrual period. The abdominal tumour reached nearly to the ensiform cartilage, and was solid in parts. There was no uterine contraction, however, to be felt, and the cervix was quite closed. The condition was regarded as one of spurious labour, and the patient was told to send again when the pains became worse. The abdominal pain rapidly passed off, and she resumed her household duties in a day or two. On August 9th the patient was seized with severe pain in the right lower abdomen, accompanied by vomiting, constipation, and a temperature of 101°. This condition continued for four days, when the vomiting ceased; the bowels were opened by enema and the pain abated. Dr. Faussett now recognized the condition as one of ovarian tumour and not that of pregnancy. My colleague, Dr. Thomas Wilson, was asked to see the patient. He confirmed the diagnosis of ovarian tumour with some complication such as suppuration or twisted pedicle, and sent her in to the General Hospital under my care. On August 16th she was admitted into our special gynaecological ward, and the case presented the following clinical features:

Present Conditions.

The patient was a well-nourished girl, with flushed cheeks slightly cyanosed, but not apparently in respiratory distress. The pulse was 120 per minute, temperature 102.4°, and the tongue was coated with a thick, yellowish fur. She complained of pain in the right side of the abdomen, which was much exaggerated on taking a long breath. The last menstrual period had taken place on August 9th. The abdomen was enormously distended from pubis to ensiform, the circumference at the level of the umbilicus being 38 in. The distension was quite uniform, there being no irregularities visible. The subcutaneous veins were much dilated. On palpation, a large tumour could be made out filling up the whole abdomen. Its shape was roughly ovoid, with the long axis vertical. The right and left halves of the tumour were approximately equal; its greatest vertical measurement was 12 in. and the greatest transverse measurement 9 in. The lower two-thirds of the tumour appeared to be a tense thin-walled unilocular cyst. The upper third was somewhat irregular on palpation and solid in consistency. It was no doubt this solid mass which has led to the case simulating pregnancy. There was very marked tenderness over the right lumbar and right hypochondriac regions, and a coarse friction fremitus could be felt during respiration over these two regions. On percussion, the abdomen was dull everywhere except in the loins. On vaginal examination, the cervix was found low down within 1½ in. of the vulva, looking forward, was firm, closed, and nulliparous. The body of the uterus was retroverted, pushed to the right, and admitted the sound 2½ in. The lower border of a large thin-walled cyst could be felt projecting into the anterior fornix. The breasts were soft, not enlarged, and presented none of the changes characteristic of pregnancy. The cardiac beat was normal in position, and the valvular sounds were healthy. The upper margin of the liver dullness reached as high as the right nipple, the hepatic dullness below merged into the tumour dullness. The left lung was healthy, whereas over the base of the right lung coarse pleural friction could be felt and heard. Vocal fremitus and vocal resonance were, however, practically normal over the friction area. The urine was acid in reaction, gave a faint haze of albumen, and showed a distinct trace of blood, which in all probability was due to the menstrual period, which was just passing off on the patient's admission to hospital. There was no frequency of micturition, and prior to her attack the bowels had been very regular.

Diagnosis.

The size, consistency, and general outline of the tumour, together with the position of the uterus and the rapidity of the enlargement, all pointed to a multilocular tumour growing from the left ovary. The history of the attacks of left-sided pain, latterly associated with right-sided pain, tenderness, friction fremitus, rapid pulse, and fever, suggested previous rotation of the pedicle with recent superadded suppuration and leakage of contents, producing localized peritonitis and pleurisy.

Operation.

Laparotomy was performed by a median incision 8 in. long on August 17th. The tumour presented the usual pearly white glistening appearance of an ovarian cystoma. An exploring