ferior half and external pillar. A horsehair drain is left in the canal, which must not be so tightly closed as to prevent free movement of the cord lying in it. The superjacent tissues are then united by horsehair sutures, and the whole dressed aseptically.

Fig. 3.

It will be seen that (1) it is impossible for the pad to lie anywhere but immediately over the internal surface of the internal ring; (2) that the surface presented to the peritoneal investment of the intestines is also peritoneal, that each fold presents a peritoneal, and therefore quickly adhesive, surface to its fellow; (3) that the whole pad forms, as it were, a bridge—a Roman arch—over the weak space in the abdominal wall, of which bridge the fundus forms the key-stone; thus the pad becomes progressively thicker and more resistant as the space covered is weakest. Resting, as it does, like an arch on the tendinous walls of the internal ring, it is, when consolidated, practically incapable of dislodgment, so that the chances of return at this point are absolutely *nil*. The protection against return does not therefore depend upon the sutures which bring the canal and rings into a closed condition after the first forty-eight hours, for which time we may safely trust either gut or silk.

In this way the advantages to be gained by the adoption of Macewen's principle are all obtained without the disadvantages which his method appears in practice to entail.

A SUCCESSFUL CASE OF LAPAROTOMY FOR RELIEF OF INTESTINAL OBSTRUCTION.¹

By RICHARD LYDDON, M.R.C.S.Eng.

THE patient was a healthy lad of 15, and a coachbuilder's apprentice by trade. I first saw him on August 26th. He complained of anorexia, sickness, and pain in the abdomen. The pain was not constant, but of a griping, paroxysmal character, and referred chiefly to the right side. There was little or no tenderness on pressure, no distension of the abdomen, and no tumour to be felt either in the abdomen or over the usual seats of hernia. The temperature and pulse were normal.

I learnt that on the morning of August 23rd he lifted some iron bars on to a truck at the railway station. The bars weighed about a hundredweight; he lifted one end while a porter lifted the other. He thought at the time the weight was rather too much for him, but felt no ill effects, and continued his work during the

day. Next morning he complained of pain in the abdomen, but went to work as usual till dinner-time, when he gave up. He was sick during that afternoon, and at night his mother gave him two pills, but thought they were vomited; at any rate, the bowels did not act. I learnt also that the boy had eaten some green apples a day or two previously; and this, together with the fact that he referred his pain chiefly to the right iliac region, and that a slight fulness could be detected there, led me to think his trouble might be due to some undigested food in the neighbourhood of the cæcum. Accordingly I ordered him a dose of castor oil. The oil operated, but not freely.

On August 23th, two days after my first visit, his symptoms remained the same; he complained of stomach-ache, and walked into the room with his hand over the abdomen and body bent. I ordered him to be kept in bed and to have a simple enema. After the enema the bowels acted, but not freely; and, as only a small quantity of water was injected, we probably only succeeded in clearing out the rectum.

From this date the symptoms increased. Pain, which had only been present at intervals, became constant, with paroxysmal exacerbations, as though the intestines were trying by their peristaltic action to overcome some obstacle. The boy had an anxious expression, and cried out or moaned every now and again as the paroxysms returned. He lay chiefly on his side with the knees drawn up. He was ordered a grain of opium every four or six hours, and my efforts were in future directed to obtaining an action of the bowels by injections. This treatment was continued during the next few days. Opium considerably relieved the pain; in fact, the patient was kept comparatively quiet by it; but there was no relief from the bowels in spite of large enemata.

It soon became evident we had to deal with a condition of affairs of a more serious nature than an impaction of feces or of undigested food. The bowels had not acted for a week. There was anorexia, and sometimes sickness, and colicky pains in the abdomen. There was no previous history of intestinal trouble, either of diarrhoea or constipation; no previous peritonitis. There were no symptoms peculiar to intussusception, no tumour to be felt either in the abdomen or rectum, no tenesmus or passage of bloody mucus. The symptoms were more or less acute, and pointed either to an internal hernia, a volvulus, or a strangulation beneath an adherent diverticulum or band.

On September 6th the vomiting was decidedly fecal, suspicious both in colour and smell, and evidently consisting of more than the contents of the stomach. I now gave up all hope of relieving the boy by any means other than laparotomy. To this the parents would not at first consent; but eventually, and after considerable delay, they gave their permission, and the patient was removed to the dispensary. On the morning of September 10th the operation was undertaken. My note for that morning states that the boy was getting very thin. His abdomen was distended, and large coils of intestine were visible through the abdominal walls across the epigastric and umbilical regions. There was no great tenderness, but pressure seemed to produce pain of a griping character. He had been in pain all night, and had had fecal vomiting. The tongue was moist, temperature normal, and pulse 112. His pulse during the last few days had become weaker and quicker. His temperature had not risen more than one or two degrees throughout the illness. The secretion of urine did not appear to be diminished. Very little nourishment had been given by the mouth—a small quantity of milk, and pieces of ice to suck—but nutrient enemata of peptonised milk or beef tea had been administered at regular intervals. He had passed neither feces nor flatus for fourteen days.

At 10.30 the operation was commenced, Mr. Lovell giving chloroform, and Mr. F. Hulke assisting me. Strict antiseptic precautions were taken. I made an incision in the middle line, about four inches long, between the umbilicus and the pubes, introduced my hand into the abdomen towards the cæcum, and swept it round in the direction of the colon, but could feel nothing abnormal. Our next step was to examine the bowels, and search among them for the obstruction. A distended coil of small intestine presented in the wound. This I drew out inch by inch for some considerable distance, returning it as I proceeded, until I came to a twist situated in the lower part of the right lumbar region. Beyond this the intestine was collapsed and empty. On examining the seat of obstruction with the finger, I found I could follow the distended bowel into what appeared to be a ring formed of twisted intestine and mesentery. I could pass my finger through this ring. It was soft to the touch, and fixed at the mesenteric attachment of the

¹ Read before a meeting of the East Kent District of the South-Eastern Branch of the British Medical Association held at Dover.

intestine, so that I was unable to draw it into the abdominal opening. I examined the condition more carefully by drawing aside the bowels while Mr. Hulke retracted the abdominal wall. I then caught sight of a knuckle of intestine on the opposite side of the ring or twist to that on which the coil I had been following ended. On pulling it, I found this to be continuous with a large distended loop, which passed under a part of the twisted bowel, and it occurred to me that, by drawing it out, I might relieve the twist. I did so, Mr. Hulke pushing the loop through on the one side, while I pulled it on the other. By this means we drew out a distended coil of small intestine, 18 inches or 2 feet in length, claret coloured with congestion, and heavy with its fluid contents; and the bowel at this point now seemed continuous without further kink. The collapsed portion was observed to be filling. I had not an opportunity of again examining the seat of obstruction, as the pulse was failing, and I was warned by the administrator of chloroform to finish the operation as soon as possible.

The distended intestines were returned into the abdomen, the wound closed, and the boy put back to bed. During the operation faecal vomiting occurred twice, once soon after the commencement, before the peritoneal cavity was opened, and once towards the end. He recovered from the chloroform without further sickness, but in the evening still complained of griping pain. Temperature 100.2°, pulse 112.

On September 11th he still complained of pain in the abdomen. In the morning the temperature was 100.6° and the pulse 128. In the evening the temperature was 99° and the pulse 120.

On September 12th an enema of warm water washed out some faecal matter. The temperature was 99°, pulse 104.

On September 15th the temperature was subnormal, the pulse 72. The wound was dressed for first time; it had healed by first intention. The superficial stitches were removed. The deep stitches were removed on September 17th.

The boy made a good recovery, and returned to his home a fortnight after the operation.

I am induced to record this case, first, on account of the unusual nature of the obstruction; and, secondly, because successful cases of laparotomy are the exception rather than the rule. Had the operation been unsuccessful I might have given a more decided account of the anatomical condition from *post-mortem* inspection; as it is, I can only describe what was revealed at the time of operation. We could see no band under which a portion of intestine might have slipped, no diverticulum by which it might have been snared. The bowel was engaged in what at first seemed a hopeless tangle, and was eventually relieved by passing one coil of intestine beneath another. I am inclined to think we had to deal with a volvulus of the lower part of the ileum, where one coil had become twisted around another. There may have existed an aperture in the mesentery, through which the loop had passed; if so, we failed to notice it on drawing out the loop, and to my mind this would not explain the peculiar twisted condition present. A further point of interest is the length of time the obstruction had lasted, and the small amount of mischief it had produced in the bowel. The intestine was not strangulated so as to cut off its blood supply; its calibre was totally obstructed, and its blood vessels greatly congested, but there was no gangrene in spite of the length of time the obstruction had existed.

CASE OF STRANGULATED RIGHT OBTURATOR HERNIA.¹

By CHARLES FIRTH, M.D.LOND., F.R.C.S.ENG.

Surgeon to Gravesend Hospital.

I was called, at 10.30 A.M. on Friday, to see Mrs. H., by Dr. G., who gave the following account of his patient: Mrs. H., a spare and feeble old woman, has had a swelling at upper and inner part of right thigh for several years, which has occasionally given her pain, but generally by pressing on the tumour herself it has gone back with a sudden gurgle, and the pain has been relieved. She has always worn an inguinal truss, though there is now no perceptible hernia there, but only some weakness of the abdominal wall. The bowels had been well open on Tuesday (three days previously) and again on Wednesday morning; then came pain in

the groin and tumour extending to thigh, knee, and leg, and urgent vomiting, frequent and feeble pulse, and great *malaise*. On examination no swelling could be found in the usual sites of herniae, but at the extreme inner side of the thigh and close to the pelvis was a soft doughy swelling, not painful on pressure. Ordered opium every four hours. Next day (Thursday) she was in same state. The sickness, constipation, and pain continued, she kept nothing down, and looked pinched and ill; had a foul tongue. The swelling was now much larger, firmer, and semi-fluctuating, and pressure on it gave much pain.

Next morning (Friday) I first saw her with Dr. G. She was then very ill, with an anxious expression, feeble and rapid pulse, subnormal temperature, and dry and brown tongue. At upper and inner part of thigh, and extending forward towards Scarpa's triangle, was a large tense fluctuating swelling (larger than the fist), painful on deep pressure, but with no impulse on coughing. The femoral vessels could be plainly felt to its outer side, seeming to be pushed aside by the tumour. Poupart's ligament could be clearly made out, and no hernia could be felt in either the femoral or inguinal ring. The sickness had stopped, but the pain and constipation continued.

Having agreed that it was probably an obturator hernia, and as the symptoms of strangulation continued, it was decided to take her into the Gravesend Hospital for operation. This was performed under the "mixture" at 6.30 p.m.

A vertical incision, 4 inches long, was made over the tumour, midway between the line of the femoral artery and the spine of the pubes, and carried through skin, fat and fascia till the adductor longus was reached; the upper edge of this was pulled downwards and inwards, and by using the handle of scalpel the fibres of the pectineus muscle were separated without being cut, when the sac came into view. This was thick and tough, and on opening it a very large quantity (more than a pint) of bloodstained fluid, with a urinous and offensive odour, was let out. Then the bowel could be felt deep down in the upper and outer part of the wound. The thyroid membrane was then nicked in a downward and inward direction, after which, with a little manipulation, the bowel was returned into the abdomen; the sac was then dissected out, ligatured in two pieces and cut off; a counter opening was made towards the inner and back part of the thigh for drainage, and the wound brought together. There was no hæmorrhage. The patient recovered from the anæsthetic, but died rather suddenly in the night, of collapse.

At the *post-mortem* examination there was a little lymph about the coils of intestine that had been strangulated, but they were of a good colour and had not lost their polish. As much as 8 or 10 inches of the gut showed signs of having been strangulated; the part was the lower portion of the ileum next to the ileo-cæcal valve; the large bowel was quite empty and very small. The other organs of the body were fairly healthy. I may mention that (as the specimen on the table shows) the position of the obturator vessels and nerve was to the outer and upper side of the neck of the sac between it and the bone.

REMARKS.—In glancing through what records I could obtain of this form of hernia, I find that the majority of the cases were in old people and women; and that in a very large proportion the exact state of things was only discovered after death. And it is this difficulty of diagnosis which is the chief peculiarity, as it forms the chief interest, of the disease; for the only points to guide us are, (1) the presence of more or less fulness at the upper and inner part of the thigh; (2) the characteristic pain in the thigh, knee, leg, and even foot, sometimes accompanied by numbness; and (3) the absence of irreducible swellings in the usual sites of hernia, with the continued symptoms of acute intestinal obstruction. In my case, owing to the size of the tumour, the diagnosis was comparatively easy; and there was a peculiarity not usually observed in these cases—namely, that the tumour was very noticeable when looked at from behind, the patient standing up, as I was informed by her daughter. She was also frequently in the habit of reducing it herself by pressure on the inner part of the thigh.

With regard to the operation itself, there is little to be said. In my case it presented no difficulties, and was accompanied by no hæmorrhage. The variable position of the obturator vessels and nerve renders it impossible to lay down rules for their avoidance in dividing the stricture [for in six recorded cases the vessels were on the inner side, in six on the outer, in three behind the sac]; but we may bear in mind that the upper and outer portions of the ring are bone, so that it is only on the inner and lower sides that we

¹ Read before the West Kent District of the South-Eastern Branch of the British Medical Association.