director, which is then withdrawn along with the guiding tube, and a safety pin passed through the holes in the outer end of the tube as a guard. After the pus has ceased to flow, or does so but slowly, a dressing is applied. At each dressing the director probe can be passed into the abscess to ascertain the degree of contraction, and used as a guide for slipping in a fresh tube, which will thus enter the cavity each time with ease and certainty, and without pain, a consideration which will be valued by those who have had frequently to pass large rubber tubes through intercostal spaces. I have tried both glass and rubber tubes, but prefer those of metal. Dry antiseptic dressings have been used with all these cases.

With regard to *early* incision. I have had no unsuccessful result that I could attribute to this cause, while I have had to regret opening these abscesses too late. Moreover, I believe that every single hepatic abscess, provided the general condition of the patient is fair, ought to recover if opened early, drained thoroughly, and kept aseptic.

For assistance in operating in all these cases I have to thank Dr. Henderson, of Shanghai; also Dr. Miles, of Shanghai, in Cases I and VII; Dr. Little, of Shanghai, and Dr. Howard Taylor, of the China Inland Mission, in Case VII.

REMARKS ON FIBROUS STRICTURE OF THE COLON. WITH A HISTORY OF TWO CASES DIAGNOSED BY LAPAROTOMY AND TREATED BY COLOTOMY.

By HARRISON CRIPPS, F.R.C.S.,

Assistant Surgeon St. Bartholomew's Hospital, London.

STRICTURE may affect any portion of the colon; but I find after considerable research, both in published cases and museum specimens, that in at least three-fourths of the cases the obstruction is situated in the sigmoid flexure. The cause of the stricture is either malignant or fibrous: the former results from adenoid cancer, which forms a ring-like growth surrounding the bowel. Fibrous stricture appears to be the result of chronic inflammatory mischief, originating either in the coats of the bowel or in the fibrous tissue in its neighbourhood. Thus, ulcerations of the mucous membrane or the formation of abscess, either in the walls of the bowel or the pelvic fascia over which it runs, may be the starting point of the disease.

The diagnosis of a stricture in the large intestine at an early stage must necessarily be difficult; and, even as the disorder advances and the symptoms become more marked, it is not always easily made. Vague colicky pains with a tendency to constipation may be at first present. As the contraction increases the symptoms become more decided. A rumbling of the intestines with recurring attacks of pain is observed, while there is often a frequent desire to go to the closet. Small diarrhoeic motions may be passed, or only a little discharge and wind comes away. The irritability of the bowel, so far as I have observed, seems to be greatest on first getting up in the morning. Sometimes at intervals a well-formed solid motion may be passed. This does not negative the fact that a stricture exists, for I have known fair motions passed where a subsequent *post-mortem* has disclosed a stricture which would not admit the little finger. Such motions must, of course, be formed by accumulation below the narrow part.

At the later stages of stricture vomiting occurs, but vomit of a fecal nature seems rarely to be present till the obstruction is complete. It occasionally happens that obvious symptoms of intestinal obstruction, accompanied by fecal vomiting, spontaneously give way with a free discharge of feces by the rectum. But the frequent occurrence of violent fecal vomiting extending over a long period without fatal result, as in the first case recorded, must be very uncommon. Such attacks seem probably due to the upper opening into

the stricture becoming temporarily blocked by a scybalous mass, which subsequently gives way to the churning action of the bowel.

The diagnosis between malignant and fibrous stricture of the colon must always be a matter of difficulty. Occasionally, however, an inflammatory origin is suggested by the manner in which the symptoms commence. This was especially so in Case I. Here the sudden onset of the pain, relieved after a few days by an attack of diarrhoea, and a copious purulent discharge, left little doubt that an abscess had formed and burst, for the patient had previously been in good health and dated all her subsequent troubles from this time. If a fibrous stricture results from the healing of an ulceration, the differential diagnosis is surrounded with difficulty, for the symptoms of an ulcerated colon closely resemble those of malignant disease. Without attempting to go into the detail of the differential diagnosis between simple and malignant strictures I may mention in passing that I have found the following points of advantage:

The duration of the symptoms may throw light on the case. Although malignant disease in its earlier stages progresses slowly it must be remembered that when it has advanced sufficiently to produce well-marked stricture, its subsequent course is comparatively rapid, and a fatal termination not far off. Indeed, it will be rarely found that a patient with cancer lives a couple of years after the symptoms of stricture become marked.

The character of the discharge helps towards diagnosis. In malignant disease it is generally considerable, while, if not at first, it soon becomes dark and blood-stained. In fibrous stricture, on the other hand, the discharge may be comparatively slight, consisting of simple mucus or muco-pus. It is true that in advanced cases where there is much secondary ulceration, the discharge may be of a coffee-ground colour as in cancer. When the stricture is due to cancer an observant nurse or patient may notice little flesh-like fragments in the discharge, an examination of which under the microscope will at once demonstrate the presence of adenoid cancer. The general condition of the patient, as shown by weakness, cachexia, and loss of weight, must be taken into consideration, for these symptoms, though not always absent in simple stricture, form a marked feature in malignant disease.

CASE I.—A lady, about 70 years of age, under the care of Dr. Pearson, to whom I am indebted for the following history: The patient was apparently in good health till 1883. In the spring of that year, whilst walking up a hill, she was suddenly seized with a severe pain in the left flank. The pain continued during the next few weeks, and was followed by some nausea and a sharp attack of diarrhoea and discharge. With rest and simple treatment she was convalescent at the end of a month. In October, 1883, the pain in the left flank and the nausea having recurred, accompanied by some tenderness and distension of the abdomen, she was seen by a surgeon who detected a lump low down, deeply seated in the left side. The diagnosis made at the time was that there was probably some malignant growth involving the lower part of the colon. During 1884 and 1885 she was troubled occasionally with constipation, followed by some diarrhoea.

In January, 1886, she first had what was described as a bilious attack, and since these attacks increased in frequency, and became the most prominent symptom in the case, it may be well to describe them in some detail. The patient, who had been previously feeling fairly well with a good appetite, would suffer from constipation for some days. She would then have an uncomfortable feeling of abdominal distension, accompanied by loud borborygmi. The discomfort would gradually pass into severe abdominal pain. All appetite would be lost, and she would have an intense feeling of nausea, and this would be followed in a short time by severe vomiting, lasting on and off for twenty-four hours. The vomited matter would consist almost entirely of fluid fecal material. Generally at this time she would have two or three copious diarrhoeic stools, the matter passed by the rectum being similar to that passed by the mouth. The attack would then pass off, the appetite return, and she would remain in fairly good health until another occurred. At first there was an interval of two or three months between these attacks, but their frequency gradually increased, so that, latterly the intervals were not more than a fortnight or three weeks. The spasmodic pains also became more intense, and the patient's general condition was very grave.

On being asked to see the patient by Dr. Pearson in July, 1888, I found her in a very feeble state after one of these attacks. She was naturally a stout woman, and though she had become much thinner, there was so much fat in the abdominal walls as to make an examination of the abdomen difficult, but, on deep firm pressure, there appeared to be some indistinct fullness in the left groin. An examination by the rectum and vagina gave a negative result. The general symptoms and character of the vomiting suggested so strongly a stricture of the large intestine that an exploratory operation was advised and consented to.

On July 19th, distension of the abdomen having again recurred, and seeing that she was evidently on the brink of another attack, assisted by Mr. Bowlby, I opened the abdomen on the left side by an incision 3 inches long, midway between the umbilicus and anterior superior spine. An enormously distended coil of the sigmoid flexure immediately presented itself. Upon tracing this downwards towards the brim of the pelvis, it

was felt to end abruptly in a firm hard pipe-like piece of bowel about as thick as the thumb; this was tightly bound down to the brim of the pelvis by dense fibrous tissue. It was at once obvious, on this examination, that, owing to the dense fibrous tissue into which the coats of the bowel had been converted, any operation on the strictured part itself was impracticable. The distended coil above the stricture was therefore drawn out as far as possible, and an inguinal colotomy performed after the manner I have already described in previous papers. The piece of gut was so distended that it would not have been safe to leave it unopened, for any vomiting would almost certainly have caused its rupture. It was, therefore, after having been very accurately stitched to the parietal peritoneum and skin, opened. Several pints of pea-soup-like faeces flowed out. A stream of water was kept pouring over the wound until the bowel had completely relieved itself; the dressings were then applied. The wound healed without any trouble. In a few months the artificial anus thus formed worked with fair regularity. The patient's general health rapidly improved, and since the day of the operation she has never had the slightest return of fecal vomiting, nor any of her old symptoms. Occasionally, when there is diarrhoea, the artificial opening gives some trouble, at other times it can be kept clean.

The patient has become very stout, and there is some tendency for the bowel to prolapse, but it can be replaced without difficulty, and kept in position with a pad. The patient is now (more than three years after the operation) able to drive and walk out daily.

CASE II.—Mrs. G., aged 53, brought to me by Dr. Goodchild, had enjoyed fair health till May, 1888. At that time she often used to notice that she would be suddenly seized with violent pain in the abdomen. She would want to pass a motion, but only a little wind would come away. As the summer advanced the bowels became very irregular, sometimes being constipated, at others relaxed. There was a frequent desire to relieve them, but generally only a little mucus would pass. During the autumn and winter she gradually became worse. At times the pain would increase, and she would pass a considerable amount of mucus. This was occasionally mixed with a small quantity of blood. At this time she had a relief from the bowel every day, or every other day.

On March 5th, 1889, I saw the patient for the first time, and made the following note of her condition: On first getting up in the morning she has desire to go to the closet, and passes a teaspoonful or two of discharge. This sometimes occurs at other times of the day, but not often. She cannot pass wind without fear of the discharge coming away. The motion is generally relaxed, but sometimes well formed. Often she has intense colicky pains in the bowels, in the intervals being free from pain. Upon examination the abdomen was very large, flat, and flabby, and nothing abnormal could be felt. An examination by the rectum disclosed nothing but some large loose folds of mucous membrane. I advised injections and a strict diet. The patient felt a little better at first from the treatment, and was able to come downstairs, but was often driven up again with the pain. In the morning she could not stand up without mucus passing involuntarily away, so that she had to dress sitting. The pain would come on every two days. One day she would be quite free, and the next in great pain. Occasionally, for a week or two, she would feel much better; her appetite was very bad, and she was getting markedly thinner. The motions were small, and passed in little pieces.

On August 25th, 1889, she took a dose of castor oil. This brought on violent pain and vomiting, and the abdomen became so tender that the weight of the clothes could scarcely be borne. Owing to this pain she readily consented to an exploratory operation, with a view to colotomy if obstruction was found. On September 1st, in the presence of Dr. Goodchild, and with the assistance of Mr. Bagnall, I opened the abdomen in a manner similar to the last case. On passing my finger into the abdominal cavity some hard, scybalous masses could be at once felt in the sigmoid flexure. The bowel could be traced down to the pelvic brim. Here, and for a distance of two inches above it, it was tightly strictured, feeling like a hard cord bound down to the fascia behind. The bowel immediately above the stricture was dilated. This was traced upwards till a healthy portion could be found, which was drawn out and sutured to the peritoneum and skin, and opened the following day. The patient convalesced without trouble.

At the present time, two years after the colotomy, she states that since the operation all symptoms have been completely relieved, and she now considers herself in excellent health, and is very satisfied with her condition. The new anus, as a rule, acts but once a day. She has no difficulty in keeping herself clean, and is able to take walking exercise without discomfort or inconvenience.

In the first of the two cases recorded the symptoms were most pronounced, and seemed to be more consistent with a stricture low down in the large intestine than with any other disorder. The second case was not so clear, though the probability of a stricture was suggested. The gravity of the symptoms in both cases was such as to make it apparent that without relief a fatal termination could not be far off. In these circumstances it appeared that the right thing to do was first to find out what was the matter, and the only way in which this could be done with certainty was to look into the abdomen to see. It was conceivable that if an obstruction were found it might be due to some cause which surgery could remedy; and, if such was not the case, by performing a colotomy above the obstruction death might be averted, and the patient's life made comparatively comfortable. The site selected for exploration in each instance was on the left side, between the umbilicus and the anterior superior spine. In the first case, the hardness that could be felt on deep pressure in this place was taken as an indication of the right spot for the incision. In Case II, where nothing could be felt through the abdominal walls, it was selected from the fact

that when there is nothing to indicate the site of stricture the chances are strongly in favour of its being either in the sigmoid flexure or in the upper part of the rectum. Another advantage of the exploratory incision being in this neighbourhood is that, if the obstruction is found to be irremediable, or an anastomosis impracticable, an inguinal colotomy can be completed without further trouble, as in my two cases.

Had the obstruction not been thus found, I should have enlarged the incision sufficiently to have admitted the hand and explored the rest of the colon. If the stricture had proved to be in the transverse or descending colon the exploratory opening might have been closed, and colotomy performed on the opposite side.

It would be out of place in this paper to dilate on the merits and advantages of inguinal colotomy; but I must state that with an experience of nearly a hundred cases I have not altered my views as to its great superiority over the lumbar method. Moreover, the two cases recorded are additional evidence of its value, for the abdominal incision afforded the means of confirming the diagnosis, and then was used for the completion of the operation.

In conclusion, I would ask physicians whether in these cases they could help us to a more precise diagnosis as to the presence of stricture, as to its nature, and the point where it is likely to be found; so that when an exploratory operation is undertaken, the surgeon may confidently expect to find a condition admitting of relief.

ON THE USE OF CANTHARIDINATE OF POTASH IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

By W. SOLTAU FENWICK, M.D.LOND., M.R.C.P.,

AND

ARTHUR G. WELSFORD, M.B., B.C.CAMB.

Previous Observations: Literature.

IN February, 1891, Professor Liebreich,¹ of Berlin, drew the attention of the medical profession to the effects which cantharidinate of potash might be supposed to exert upon the progress of tuberculous disease. He pointed out that the specific action of the drug consisted in promoting increased exudation of serum from the capillary vessels, and since this exudation had been proved to possess considerable germicidal properties, it was probable that the rapid inundation of the tuberculous material by an antagonistic agent would tend to modify, or at least retard, the specific action of the bacilli. This statement immediately received practical support from Fränkel² and Heymann,³ who, in addition to a verbal report upon 32 cases treated in this manner, demonstrated several in which the morbid phenomena in the larynx had either diminished or entirely cleared up under the influence of the new remedy. A few weeks later Professor Tümas,⁴ of Warsaw, published some observations upon the value of the drug in 6 cases of pulmonary phthisis. He considered that the treatment was decidedly efficacious, as in 2 instances the physical signs of disease had disappeared.

Heryng⁵ has recently investigated the use of the cantharidinate of potash in 20 cases of laryngeal and pulmonary tuberculosis, and believes that he obtained markedly beneficial results in some cases of recent tuberculous laryngitis. Germonig⁶ concludes from his own cases that while the drug produces no appreciable effect on the pulmonary symptoms, its use is sometimes followed by an improvement in the laryngeal. Similar statements have been made by Saalfeld,⁷ Landgraf,⁸ and Lublinski.⁹ On the other hand,

¹ *Berlin. klin. Wochn.*, March 2nd, 1891.

² *Berlin. klin. Wochn.*, March 2nd, 1891.

³ *Loc. cit.*

⁴ *Pratch*, 13, 1891, p. 247.

⁵ *Therapeutische Monatshefte*, November, 1891.

⁶ *Lo Sperimentale*, May 15th, 1891.

⁷ *Berlin. klin. Wochn.*, March 2nd, 1891.

⁸ *Loc. cit.*

⁹ *Loc. cit.*