typical of many she has had, and was ultimately relieved, as many of its forerunners had been, by hot douches of boracic solution, and a mixture, frequently repeated, of urotropine, henbane, and valerian. In this patient's case the tenderness of the urethra is such a marked feature that in her present attack the local application of a strong solution of cocaine was required for her relief.

ENTEROSPASM AND COLIC FROM THE SURGICAL POINT OF VIEW.

BY

JAMES SWAIN, M.S., M.D.LOND., F.R.C.S.ENG.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BRISTOL; SURGEON
TO THE BRISTOL ROYAL INFIRMARY.

PAIN, vomiting, and collapse constitute the cardinal symptoms of most acute abdominal crises, and we have to rely upon other symptoms than these to differentiate one case from another.

This may be easy in such conditions as renal colic, appendicitis, twisted ovarian pedicle, and similar well-defined ailments; but it frequently happens that surgical aid is sought in less urgent affections, where the existence of one or more of the three important symptoms referred to produces a mimicry of serious abdominal trouble of ill-defined origin.

Every surgeon of experience occasionally meets with cases in which the severity of these symptoms is strongly suggestive of intestinal obstruction or some other important abdominal lesion; but on opening the abdomen nothing abnormal is found, the symptoms cease, and the patient soon recovers.

Some of these cases are of purely functional origin, those of an acute type being probably due to painful contraction of the small intestine—enterospasm—and those of a chronic type being associated with pain of the nature of "colic" in the large gut.

It is mainly these functional cases to which reference is now made, though it will be seen that it is not uncommon for a definite organic mischief to be the cause of some of the obscure cases of repeated colic.

It is not intended to suggest an explanation of the immediate cause of the interference with the physiological integrity of the muscular or nervous apparatus of the intestines which results in this painful spasm, but rather to discuss its clinical manifestations with a view to avoiding needless surgical intervention. To prevent confusion, the term "enterospasm" will be used to indicate acute cases apparently arising in connexion with the small gut, and the term "colic" will be used for chronic cases which appear to originate in the large intestine.

That enterospasm is capable of simulating an acute abdominal crisis is suggested by the fact that recovery follows operation when the pain and vomiting are sufficiently severe to necessitate a coeliotomy, which is performed in some of these cases because of the impossibility of being certain that the symptoms are merely due to a functional intestinal disturbance. Moreover, in some cases the intestines are actually to be seen markedly contracted at the time of opening the abdomen.

CASE I.—*Enterospasm resembling Acute Intestinal Obstruction.*

Male, aged 63. The patient was subject to constipation, for which he had taken aperient water, and for six months had complained of dull pain in the left flank. On May 5th he had acute pain in the left flank, lasting twenty-four hours. This recurred on June 5th, and again continued for twenty-four hours, accompanied by sickness, nausea, and absolute constipation. After a brief period of improvement in the pain and a slight action of the bowels after repeated enemata, the pain became much worse.

On June 7th I opened the abdomen in the mid-line. The small intestine was empty and contracted, and was greatly congested. No lesion was found. The bowels acted after a turpentine enema on June 9th, and the patient made a rapid recovery. During convalescence sodium sulphate brought away large scybalous masses.

CASE II.—*Enterospasm resembling Acute Appendicitis.*

Male, aged 32. On January 14th he was suddenly seized with pain in the right loin and subsequently in the right iliac fossa. The pain was described as "agonizing," and his doctor gave him a hypodermic injection of morphine. When I saw him, about three hours after the attack commenced, he appeared to

be in great pain, and was said to have vomited "about twenty times." The abdominal muscles were very tense especially on the right side, and there was tenderness near McBurney's point. The urine was normal, tongue clean, and temperature normal.

The sickness continued for twelve hours, but the following day the pain was much less after a turpentine enema had brought away a constipated action, though McBurney's point was a little tender. Further actions of the bowels followed after enemata, and the patient was practically well twenty-four hours after the beginning of the attack.

CASE III.—*Enterospasm resembling Perforated Gastric Ulcer.*

Female, aged 25. This patient was subject to vomiting, and was said to have had gastro-enterostomy performed four years previously for gastric ulcer.

On July 11th she was suddenly seized with violent abdominal pain and vomiting, persisting for twenty-four hours. The bowels had acted several times before I saw her on July 12th. The face was flushed and the patient complained of severe pain, chiefly on the left side of the abdomen. The pulse was rapid, and she appeared unable to bear the slightest pressure in the left epigastric region. The abdomen was not so rigid as is usual with a perforated ulcer, and suspicion was aroused by the fact that she had previously had appendicectomy and nephropexy performed, in addition to gastro-enterostomy. She was regarded as a "neurotic," but fearing lest there might be some perforative peritonitis an exploratory operation was performed. Nothing abnormal was found, and she speedily recovered.

The narration of these cases is sufficient to show how difficult it is to be certain that the symptoms are merely due to functional disorder, and though the patient referred to in Case III was so markedly neurotic that it was more than likely that we had to deal with a case of enterospasm, it had to be borne in mind that "neurotics" may suffer from organic trouble as much as ordinary individuals.

The seat of the greatest intensity of the pain generally appears to be referred to the neighbourhood of the umbilicus, there is often a history of irregular action of the bowels, and the abdomen is frequently retracted. In this last respect the condition resembles the early stage of most acute abdominal lesions, and when associated with considerable superficial tenderness it is extremely difficult to exclude some forms of peritonitis. Nevertheless, in many of these cases the general condition of the patient does not suggest a serious mischief, and it is not uncommon to find that the diaphragm acts freely, so that a deep breath may be drawn without adding to the patient's suffering.

In doubtful cases of severe intestinal trouble a gradually increasing distension in association with pain and vomiting may be regarded as a clear indication for operation; but it is not often desirable to wait for this as a means of diagnosis, and it is far wiser to run the risk of operating unnecessarily in a case of enterospasm than to neglect to interfere in an obscure case of acute intestinal obstruction or other morbid abdominal condition which may be amenable to surgical procedures.

Just as enterospasm, by its sudden onset, tends chiefly to resemble organic mischief in the small gut, so colic originating in the large intestine, by its chronicity, is more apt to simulate disease of the lower bowel.

"Colic," as applied in this sense, is much more common than enterospasm, but it must be remembered that the pain associated with such conditions as gall stones, chronic appendicitis, or movable kidney may be mistaken for the functional trouble now under consideration. Some form of intestinal adhesion may be the cause of intestinal pain, and I have occasionally been consulted with a view to operation for supposed appendicitis in cases of colicky pain due to mucous colitis. These and other causes (including "lead colic") of abdominal pain must be considered as possible factors in the production of colic; but, putting such cases aside, we have to deal with "colic" as a functional manifestation independent of organic mischief.

Most of these patients seek the advice of the surgeon because they are supposed to have a commencing obstruction from a growth in the large intestine. The recurrent paroxysmal pain, constipation, meteorism, occasional vomiting, and even loss of flesh in these cases form a collection of symptoms which may be difficult to distinguish from the early signs of stenosis due to an intestinal neoplasm.

A few typical examples may be recorded:

CASE IV.—*Colic resembling Intestinal Growth.*

Male, aged 55. For ten months the patient had suffered from indigestion, and had severe abdominal pain, which appeared to

be behind the umbilicus and passing towards the pubes. These pains were almost of daily occurrence, but he had gone as long as a week without pain. For the past six weeks the pains had been more severe, and he had lost 7 lb. in weight. The pain was accompanied by flatulence and distension, and if he was able to pass flatus the pain was somewhat relieved. During his illness he had been subject to constipation. Nothing abnormal was found on opening the abdomen. He was treated with enemata and purgatives, and had no more pain. When seen about ten months after operation he continued to be free from pain.

CASE V.—*Colic resembling Intestinal Adhesions.*

Female, aged 44. Subject to marked constipation and colicky pains in upper part of abdomen for several years. For some months the pains have been more severe, more frequent, and accompanied by distension. With the pain there was a feeling as if "there was something she wanted to get rid of." Medical treatment was advised, and the pains disappeared. Three years later she was still free from attacks.

CASE VI.—*Colic resembling Cicatricial Stenosis of Intestine.*

Female, aged 44. The patient stated that she had "typhoid fever and peritonitis," during which she passed a "large quantity" of blood per anum ten years previously. Subject to marked constipation since that illness. For the past three years has been subject to abdominal pain and slight distension, and feels as if there had been a "stoppage on the left side of the bowels." Under treatment by purgatives, abdominal massage, and electricity she quickly got well, and continued so when seen four years later.

I have met with many such cases as those recorded above which sufficiently exemplify the difficulty of arriving at an exact diagnosis.

The exclusion of a malignant neoplasm is of the greatest importance. The presence of "occult blood" in the faeces may be found in cases of ulcerating growth, and the prolonged retention of a bismuth meal, as shown by the *x* rays, is of some value in suggesting a definite organic obstruction, but it is unwise to attach much importance to this symptom, and therefore it is generally desirable to keep the patient in bed under observation for a week or two. The food should be light and nutritious, the bowels should be opened regularly with purgatives and enemata if necessary, and the patient weighed at definite intervals.

If under these conditions the symptoms show no signs of improvement and there is a progressive loss of weight, an exploratory coeliotomy is desirable. Even then nothing abnormal may be found, though such cases are usually caused by some form of intestinal adhesion or new growth.

As in the acute cases, it is inevitable that exploratory operations should occasionally be necessary if we wish to safeguard the patient against the overlooking of serious organic disease, but we may justifiably delay operation where the patient shows continuous signs of improvement under the regimen referred to.

In both acute and chronic cases where coeliotomy has proved the absence of any organic lesion the patient is generally cured of his symptoms—at least, temporarily. This is, doubtless, mainly attributable to the rest in bed necessitated by the operation, accompanied by careful dieting and regular action of the bowels.

Constipation is a causative factor in so many of these cases that attention to the proper and regular evacuation of the bowels is of the highest importance if future attacks are to be avoided.

THE annual meeting and launch party of the Brussels Medical Graduates' Association will be held on Saturday, July 13th. The saloon launch *Empress of India* will start from Maidenhead at 12.30 p.m., returning about 8 o'clock. The launch is provided with a cabin and an awning, so that weather conditions are immaterial. The train leaves Paddington at 11.15 a.m. for Taplow, which is the nearest station to Maidenhead Bridge. Tickets, 12s. 6d. each, to include launch, luncheon (not including wine), and tea, may be obtained from the honorary secretary, Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square, W. At the biennial dinner of the association, which took place at the Trocadero on May 23th, the chair was taken by Dr. Arthur Haydon, owing to the absence of the president in the country. The following were elected officers for the year: President, Dr. Edward Osborne Fountain; vice-president, Dr. Robert Wilkinson; honorary treasurer, Dr. Major Greenwood; honorary secretary, Dr. Arthur Haydon; Council, Drs. Cowburn, Callender, Cullinan, Singleton, Howard Humphris, Smallwood, Fielden Briggs, Henry Dutch, and Bryce Macaulay.

C

Remarks

ON

THE SALVARSAN TREATMENT OF PERNICIOUS ANAEMIA.

BY

BYROM BRAMWELL, M.D., P.R.C.P.E.,
LL.D., F.R.S.E.,

PHYSICIAN TO CHALMERS' HOSPITAL, EDINBURGH; CONSULTING
PHYSICIAN, EDINBURGH ROYAL INFIRMARY.

IN March, 1911, I published in this JOURNAL two cases of pernicious anaemia in which great improvement resulted from the administration of salvarsan. In this paper I propose to record the future progress of these cases—they have remained well without any further treatment—and the results in five (all the) other cases treated in the same way. Since I commenced to treat cases of pernicious anaemia with arsenic in the year 1875 I have had a large experience of the disease; the impression which has been made upon my mind by the results of the salvarsan treatment in the seven cases which I am now about to record is, on the whole, very favourable. If my observations are confirmed by further experience, and by other observers, I am disposed to think that salvarsan will probably be found to be a more efficient remedy than arsenic given by the mouth, and indeed than any form of treatment which has as yet been employed in this very grave and intractable disease.

CASE I.

J. S., aged 49, married, electric hoist man, formerly a soldier, admitted to the Edinburgh Royal Infirmary on October 12th, 1910, suffering from marked pernicious anaemia.

Previous History.

The patient came under my observation as an out-patient in October, 1909, suffering from pernicious anaemia, was treated with arsenic, and rapidly recovered. He remained at work and fairly well until the beginning of October, 1910, when he got a chill and rapidly became markedly anaemic. The patient denies venereal disease. The bridge of his nose is sunken; this developed spontaneously at the age of 18, and was, perhaps, due to congenital syphilis; there are no other stigmata of that condition.

State on Admission to Hospital.

The patient presented all the typical symptoms of pernicious anaemia.

The blood count was as follows: Red corpuscles, 1,035,000; haemoglobin, 30 per cent.; colour index, 1.5; whites, 7,800. Differential count: Polymorphs, 56.6 per cent.; mononuclears, 41 per cent. (large 15 per cent., small 26 per cent.); eosinophiles, 2.3 per cent. Marked poikilocytosis, polychromasia and granular degeneration. No nucleated reds were seen.

The patient was very short of breath on exertion; his feet and ankles were oedematous; there were no retinal haemorrhages. The systolic blood pressure was 88 mm. of mercury. Blowing systolic murmurs were present in the mitral, pulmonary, and aortic areas. The tongue was clean and moist. There had been no sore spots on the tongue or mouth. The patient had had no teeth for several years; his gums were perfectly normal; the false teeth which he wears had given rise to no irritation. The urine was pale, specific gravity 1012, and contained no abnormal constituents.

Treatment and Results.

Rest in bed; milk diet; arsenic (Fowler's solution), commencing with 2 minims, three times daily. When the arsenic was increased to 4 minims three times daily, diarrhoea developed; this was, however, easily restrained (as I have found to be the case in other cases) by combining a small dose of morphine (5 minims of the liquor morphinae hydrochlor.) with each dose of the arsenic. The arsenic was gradually increased to 12 minims three times daily. The patient improved considerably under this treatment as regards his general symptoms, appearance, and the condition of the blood.

December 16th. Fowler's solution stopped. Red corpuscles, 1,830,000; haemoglobin, 52 per cent.; colour index, 1.44.

From December 16th to 21st no drugs were administered.

December 21st. Red corpuscles, 1,720,000; haemoglobin, 50 per cent.; colour index, 1.4. On this date the first dose of salvarsan (0.2 gram) was given, the remedy being injected into the left buttock. On January 5th and 19th and on February 9th the injections of salvarsan were repeated, 0.3 gram being given on each of these occasions. Each injection was followed by inflammatory hardness and pain in the buttock, but little constitutional disturbance. The first and third injections were made into the left, and the second and fourth into the right buttock. Coincidentally with this treatment very marked improvement occurred.