nerve impulses to the central nervous system. These in turn give rise to normal responses which are sensations and reflexes. The basis of the process is the physiological or functional unit of the nervous system.

Ill health, on the other hand, reveals itself by some disturbance of this process, and we are seeking to recognize the significance of these disturbances. Ill health is not necessarily associated with any visible pathological change in the organs of the body. When the nervous processes are disturbed the fact is usually recognized by the patient before any change in the organs can be demonstrated by the pathologist. Alterations in sensation occur which the patient recognizes as abnormal, and such alterations may be the first indication of the departure from normal health. Concurrently there may be reflex phenomena which show themselves as definite symptoms though they may be difficult to recognize. Any part of the reflex arc, or of the anatomical basis of the physiological unit, may be the site of the disturbance, though some parts of it are more susceptible than others.

Our contention is that we must look for the first signs of ill health in the nervous regulating processes of the body. They are the basis of the vital activities and maintain the life of the organism as a unit. Disturbance of the vital processes is the first sign of ill health, and their failure is the ultimate cause of death.

SOME CAUSES OF INTESTINAL OBSTRUCTION.*

BY

J. W. THOMSON, M.A., M.B., C.M.,
SURGEON, CLAYTON HOSPITAL, WAKEFIELD.

I.—VOLVULUS OF THE SMALL INTESTINE.

VOLVULUS of the small intestine is a very rare condition, and the whole of the jejunum and ileum may be involved, or only one loop may be affected. Tully Vaughan, as quoted in Rowlands and Turner's *Operations of Surgery*, has collected 21 cases. In several of these the difficulties were so great, and the appearances so puzzling, that the operators did not recognize the condition during operation. The following is a case of volvulus of the small intestine:

A man, aged 23, was admitted to a nursing home in November, 1920, about midnight, after a journey of about forty miles by road in an open touring car. Forty-eight hours previously he had been seized with violent pain in the abdomen, round the umbilicus, accompanied by vomiting. The pain never entirely subsided, but he had violent attacks at intervals. He had vomited everything, and had passed no flatus. On admission he was in a very weak condition—temperature 97°, pulse 120. During the examination of the abdomen peristalsis was excited, and a coil of bowel could be felt below and to the right of the umbilicus.

The abdomen was opened through the right rectus, and there was a considerable escape of sanguineous fluid. Bands and adhesions were present in puzzling perplexity. Coils of small intestine were adherent to the lateral and anterior abdominal walls and to the caecum, obscuring this structure, and to each other. During the separation of these bands and adhesions, what was momentarily thought to be another stout and strong band was revealed, which, from its size (rather larger than a lead pencil) and appearance, and pathological associations, almost invited resection. On tracing this towards the caecum it terminated abruptly one inch from the ileo-caecal junction, at the point where a string band had bound the intestine to the abdominal wall. It passed downwards and inwards for four or five inches, terminating in slightly distended intestine, and it was now obviously a volvulus of the ileum. This was easily unfolded, and there were about three turns. The intestine rapidly regained its colour and peristaltic movement. The raw surfaces were sutured, or covered with omental grafts. The patient made an uninterrupted recovery.

The patient was a strong, athletic man, who had had an attack of appendicitis seven years previously, when he was ill for six or sutured or covered with omental grafts. The patient made an quite well in the interval.

The case was of interest because of its rarity and its primary cause, and also of the long interval between the cause and effect. It is condemnatory of the expectant treatment of appendicitis, and it reminds one that after such an attack there may lurk in the abdomen unsuspected

forces that, given favourable conditions, even after the lapse of many years, are potential of swift calamity. A perhaps simple appendectomy is replaced by a difficult and dangerous operation.

II.—DUODENAL HERNIA.

There are two varieties of duodenal hernia—right and left—the left being the more common. The left hernia originates in the paraduodenal fossa of Landzert. Trietz states that three conditions are necessary for the formation of a left duodenal hernia:

1. The existence of a fossa and its boundary folds.
2. The presence of the inferior mesenteric vein in the fold.
3. Sufficient mobility of the small intestine to permit its entry into the sac. The mouth of the sac may be two or three inches wide. The size of the hernia varies from that of a walnut to the size of a man's head, and may contain all the small intestines. The length of intestine may be as small as two inches.

Left duodenal hernia occupies at first the left and upper portion of the abdomen, but eventually may occupy nearly the entire cavity. In 1899 Moynihan collected 57 cases of left duodenal hernia. Diagnosis is rarely made, and the condition is discovered at operation for acute intestinal obstruction or at autopsy.

The following is a case of left duodenal hernia in a woman:

History.—The patient was healthy as a child. Her first illness was acute rheumatism at the age of 21. She was ill for three months, but eventually made a good recovery. Since that attack, until June, 1920, she enjoyed very good health, but was inclined to be constipated at times. She was not in the habit of taking aperients. In June, 1920, she had a slight accident, falling backwards over the foot of a bed, and she had had soreness and stiffness in her back since. Immediately after each meal, and without fail, she experienced a dull pain in the epigastric region, radiating to the pubic region. The pain lasted about fifteen minutes, disappearing entirely. Coincident with the pain was distension of the abdomen, the latter disappearing at the same time as the former. Since the accident she had been more constipated, and had been compelled to take aperients on alternate days, but she never vomited. This condition persisted until November 8th, 1920, when she became acutely ill. On that date the usual pain appeared after dinner, passing away in the usual time. About three-quarters of an hour afterwards she was seized with violent pain in the epigastrium, causing her to sink to the floor and roll about in agony. She had no vomiting on that occasion. The pain persisted for about two and a half hours, gradually disappearing. She slept well the following night. On November 9th, 10th, and 11th, and until midday of the 12th she was able to get about as usual, though she had slight continuous nausea, but no vomiting. Her diet was restricted to milk, and she noticed slight abdominal distension. The only actions of the bowels during this period were several watery motions on November 9th, after taking castor oil. On the 12th another acute attack set in about noon. This time the pain persisted, abdominal distension became very marked, she vomited very persistently, and no flatus was passed.

Condition on Admission.—She was admitted to hospital the same evening about 10.30. Abdominal distension was marked. The abdomen was tender, and the pain very severe. The pulse was imperceptible at the wrist, and collapse was intense. Vomiting had ceased. Immediate operation was decided upon, and under the anaesthetic palpation revealed a large abdominal tumour, resembling an ovarian cyst, though obviously not of pelvic origin. It was slightly movable, but not on respiration, and resonant on percussion. The lower border was on a level with the inter-spinous line. My house-surgeon remarked that the outline of the abdomen was that of an advanced pregnancy.

Operation.—The abdomen was opened in the middle line, and there was revealed a large, smooth, glistening tumour. No intestine presented itself, nor did any sanguineous fluid escape at this stage. The hand was passed round the tumour, beginning on the right side. On reaching the lower border, and on a level with the third lumbar vertebra, an orifice was discovered admitting easily a thumb and two fingers. Between the orifice and the caecum were a few inches of collapsed ileum, with haemorrhages in its wall and mesentery. There was no entering loop of intestine, only the retiring segment. With the gentlest traction the intestine was drawn from the sac. About mid-jejunum there was a well marked constriction ring, and for many inches on either side of this the intestine was black but viable. Blood-stained fluid escaped from the sac along with the intestine. No attempt to stitch the orifice was made owing to the condition of the patient. Though desperately ill for a day or two the patient made a rapid recovery.

Operation was undertaken with the hope that some simple manipulation, rapidly executed, might still avert death that was imminent, and in this respect it was fortunate that the intestine was withdrawn without the

* A paper read before the Yorkshire Branch of the British Medical Association.

necessity of the division of the sac, as may occur in rare cases. The history of the case, the presence of a "palpable, definite, resonant mass, slightly movable, but not on respiration, and gurgling on auscultation," with retraction of the region corresponding to the colon, would permit a probable diagnosis to be made. No coils of intestine were visible.

As pointed out by Moynihan and Dobson, the plica venosa forms the upper anterior and lower boundaries of the orifice of the sac. This fold contains the inferior mesenteric vein, but in this case there was no obvious implication of the haemorrhoidal veins, nor was any collateral circulation developed in the abdominal wall.

It will be noted that the patient ascribed her condition to an accident. According to Treitz, duodenal herniae are always acquired, being caused by a violent effort, such as a blow, shock, or concussion. Landzert, on the other hand, states that these herniae are always congenital. Moynihan and Dobson state that all the essentials for the development of hernia are present in intrauterine life, and that the hernia is chronic, whether congenital or acquired, the strangulation alone being acute. Cases have been recorded as early as the ages of 14 days and 3 months.

No attempt was made to suture the hernial opening owing to the condition of the patient. This procedure involves two risks: one is that of injury to the mesenteric vessel, and the other the formation of a large peritoneal cyst.

III.—INTESTINAL OBSTRUCTION FROM GALL STONES.

In the following case delay in operation was due to the difficulty of diagnosis, or rather perhaps to the failure to recognize the condition. The onset was one of overwhelming violence. The patient was extremely obese. There was also a curious intermission in the symptoms, in which pain and vomiting ceased and flatus was passed. The latter was probably due to reversed peristalsis, making the calculus slip backwards, and thus removing the obstruction.

Gall stones most frequently cause obstruction by impaction, but they may also cause obstruction indirectly by producing volvulus, and by their pressure they may cause ulceration of the gut and subsequent stricture. Obstruction from gall stones may occur anywhere from the pylorus to the anus.

Mrs. M., aged 55, admitted August, 1921. Two or three days before admission she had an attack of violent abdominal pain, accompanied by vomiting and the cessation of the passage of flatus. On admission the vomiting had ceased and flatus was being passed, and this caused further delay in operating. The symptoms of obstruction recurred, and operation was performed. The gall bladder was thickened and shrunken, and a gall stone the size of a large walnut was found impacted in the lower ileum. This was removed, and distended coils of intestine were emptied at the poisonous proteose level of Wilkie. The patient did not recover.

IV.—INTESTINAL OBSTRUCTION FROM UTERINE FIBROID.

An unusual cause of acute intestinal obstruction is a fibroid tumour of the uterus. According to Bland-Sutton, uterine fibroids may obstruct the intestine in three ways:

1. A pedunculated subserous fibroid may entangle a loop of small intestine and lead to fatal obstruction.
2. A very large fibroid may rest on the brim of the pelvis, thus obstructing the sigmoid flexure.
3. An impacted tumour may press upon the rectum, and lead to obstinate constipation and chronic obstruction.

The following is an example of the second variety:

Miss B., aged 50, admitted to hospital May 10th, 1921. The day before admission severe pain set in in the abdomen. Vomiting was persistent and continuous. On admission a huge myoma occupied the pelvis and well filled the abdominal cavity. Operation was at once performed. No bands or adhesions were present. Access to the broad ligaments was very difficult. The bladder, therefore, was detached from the anterior wall of the uterus, and the cervix was divided by passing a scalpel from the anterior to the posterior surface in the middle line, and cutting outwards toward the uterine arteries. It was not very difficult then to divide the broad ligaments from below upwards, thus rapidly removing the uterus with its appendages. Recovery was rapid and complete.

V.—INTESTINAL OBSTRUCTION FROM HERNIAE.

Cases of intestinal obstruction from inguinal or femoral herniae, if the patient is feeble or *in extremis*, may be treated as follows:

Using Gray's syringe, infiltrate the skin and subjacent tissues with novocain 1/2 per cent. Incise the skin, open the sac; if the bowel is gangrenous incise it also, but if in good condition dilate the constricting structure with the index finger, and return the hernia or not, as seems advisable. Incision from within is unnecessary in dealing with the constricting ring in any strangulated hernia. Digital stretching is sufficient and safer.

The stethoscope is of much value in the diagnosis of various abdominal conditions, and in intestinal obstruction it is not difficult to recognize the passage of intestinal contents through wide or narrowed parts of the bowel.

The chief points in the diagnosis of acute intestinal obstruction are: (1) continuous and persistent vomiting; (2) no passage of flatus in twenty-four hours, notwithstanding appropriate treatment; (3) increasing abdominal distension. We must not wait for the onset of so-called faecal vomiting. It is a sure sign of intestinal obstruction, but it is also a clear indication that death is imminent.

A CASE OF ANGIOCHORIOMA.

BY

O. J. REID, M.B., B.Ch.N.Z.,

LATE RESIDENT MEDICAL OFFICER, CITY OF LONDON MATERNITY HOSPITAL;

AND

A. NEAVE KINGSBURY, M.B., B.S.,

B.Sc.Lond., D.P.H.,

PATHOLOGIST, CITY OF LONDON MATERNITY HOSPITAL; ASSISTANT
PATHOLOGIST, MIDDLESEX HOSPITAL.

PLACENTAL tumours of the angiochoriomatous type are so rare that the following case, which occurred in the district practice of the City of London Maternity Hospital early this year, appears of sufficient interest to merit report.

The tumour which we now know as an angiochorioma was first described by Virchow as "myxoma fibrosus placentae," and since his publication only a few score cases have been recorded, the majority of these being from maternity hospitals where careful note is being kept of any abnormality. It may, therefore, be a somewhat commoner condition than the records would indicate.

These tumours arise from the chorion, probably very early in pregnancy, and their localized condition has been held to mitigate the possibility of a maternal cause. Some writers have, however, suggested an inflammatory origin and syphilis has been incriminated as an etiological factor, without much weight of supporting evidence. An interesting explanation of their causation was offered in a paper read before the Annual Meeting of the British Medical Association in 1912, by R. W. Johnstone,¹ who suggested that obstruction to venous return from an area of the placenta might bring about the angiomatous condition.

Apart from the area invaded by the tumour, the placenta is usually quite healthy and functions normally. Hydramnios may coexist and the foetal mortality does not exceed 0.30 per cent.

Clinical History.

The patient was a multipara, aged 42. The pregnancy was normal except for an unusual degree of pallor, and during the pregnancy a painful "thickening" behind the left knee was noticed. She was delivered of a healthy full-term child. During the third stage of labour there was a free loss of blood, but insufficient to be termed a post-partum haemorrhage. Examination of the placenta showed the presence of a tumour. Five days after labour phlebitis and thrombosis of the left popliteal vein occurred: the temperature was 101° F. and the patient complained of a persistent right hemispherical headache. The uterus was well involuted. The heart was slightly dilated and haemic murmurs were noted. The blood pressure was 98 mm. No albumin was present. A blood count gave the following result: red cells 3,100,000 per c.mm.; haemoglobin 42 per cent.; leucocytes 13,100 per c.mm.; differential count: polymorphs 81 per cent., lymphocytes 15 per cent., large mononuclears 4 per cent.

* BRITISH MEDICAL JOURNAL, 1912, ii, 1113.