ULCER OF STOMACH: ACUTE HÆMATEMESIS : GASTROTOMY :

ARREST OF HÆMORRHAGE AT THE BLEEDING SPOT: VENOUS
THROMBOSIS IN BOTH LEGS: RECOVERY.

By H. BRUNTON ANGUS, M.B., M.S.,

Senior Assistant Surgeon, Royal Infirmary, Newcastle-on-Tyne.

THE following case is of interest because it raises the question of the surgical treatment of hæmatemesis due to gastric ulcer.

S. S., aged 19, a domestic servant, was admitted into the Newcastle Royal Infirmary on December 15th, 1900, suffering from hæmatemesis.

History.—She had suffered from epigastric pain, coming on two hours after taking food, for the last twelve months. She had vomited the contents of her stomach after severe attacks of pain, but never to her knowledge any blood. On December 14th, at 11 P.M., she went to bed without any pain, although two hours previously she had had some. She was awakened by a feeling of nausea, vomited a large quantity of bright red blood, and then fainted. A doctor saw her, and ordered her immediate removal to the hospital. She was admitted at 3 A.M. on December 15th, and vomited a large quantity of bright red blood in the accident room.

Condition on Admission.—She was a fairly well-nourished woman, but very blanched, with a pulse of 88, and weak. She was free from pain, but apathetic. Except for a little tenderness over the epigastrium on deep pressure, there was nothing abnormal to be detected.

Diagnosis.—Gastric ulcer, with erosion of a large arterial branch.

Operation.—On December 15th, at 3.30 A.M., chloroform was administered, and a median incision was made from the ensiform to the umbilicus. The pylorus and anterior surface of the stomach were examined without detecting anything abnormal. On tearing open the lesser omentum, an indurated patch was felt on the posterior surface of the stomach near the lesser curvature, not far from the pyloric end. The affected part could not be withdrawn from the abdomen, so the surrounding area was packed off, and an incision 3 inches in length was made in the axis of the stomach and in its posterior wall. A small punched out ulcer, the size of a threepenny-piece, with a little surrounding induration was seen, and there was recent blood clot in it. Owing to the difficulty of access, the only way to control the bleeding in this area was to pass a purse-string catgut suture around the ulcer, and then obliterate it by tying it tightly. The opening in the stomach was then closed, first by a continuous catgut suture traversing all the coats of the stomach and so rendering the wound watertight, then by a row of interrupted Lembert sutures (catgut) covering any protruding mucous membrane. No drainage was used, and the abdominal wound was closed by a row of silk-worm-gut sutures traversing all the layers of the abdominal wall. Strychnine gr. $\frac{1}{6}$ was given hypodermically during the operation, which was well borne.

Subsequent History.—The patient, though very weak, soon became comfortable; the temperature was normal but the pulse kept over 100. As soon as the chloroform sickness passed off she was given hot water by the mouth and then equal parts of barley water and milk, at first in small quantities; nutrient enemata were ordered as well. On December 20th feeding was entirely stomacic, namely, barley water, milk, chicken, tea. On December 26th the sutures were removed, and, except for a small abscess in the abdominal wall, due to a suture, the incision was healed. On December 28th the pulse was 132, the temperature 100.4° F.; she was complaining of pain in the pelvis, and vomited a little clear fluid. On December 30th the pulse was 120, the temperature 101.3° F., and she complained of pain in the left leg, and there was tenderness in the course of the internal and external saphenous veins. The leg and foot were white and swollen. On January 4th, 1901, the left leg was still white and œdematous but was improving; pain commenced in the right calf, and the leg was swollen and œdematous. On January 7th the right calf was very painful, the foot and leg œdematous, and there was great tenderness over the right saphenous opening. The left leg was much improved, the pulse was 132, and the temperature 102° F. She complained of pain in the lower part of the abdomen; the bowels were loose. On February 5th the patient had been getting up for a few days. She was losing her anæmic appearance and eating ordinary diet without pain. There was slight œdema in the lower part of the legs at the back after she had been up. Her pulse was 86 (sitting). She was discharged on this date.

REMARKS.

It has fallen to my lot to witness two *post-mortem* examinations on patients who have died from hæmatemesis secondary to gastric ulceration. In both cases large vessels were found eroded with visible holes in them—in one case the gastroduodenal artery. The clinical history of each was the same—namely, recurrent copious hæmorrhages, which resisted all medical treatment. It seems to me that there are two classes of these cases which demand surgical aid: (1) When hæmatemesis is often repeated till it is threatening life; (2) copious recurrent arterial hæmorrhage. Surgeons must expect to find considerable difficulty in locating the site of the bleeding, especially when the ulcers are multiple. In cases where a large vessel is eroded only surgical treatment can save the patient's life.

Another point of interest in the case is the occurrence of venous thrombosis in the saphenous veins of both limbs. Are we to regard this as of septic or aseptic origin? By

aseptic I mean thrombosis due to clotting from a feeble heart's action and a watery condition of the blood. My colleague, Mr. W. G. Richardson, has collected many cases of thrombosis following abdominal operations, typhoid fever, *post-partum* hæmorrhage, etc. They were mostly anæmic from loss of blood, and there was a remarkable coincidence in the onset of thrombosis—namely, ten to fourteen days after the loss, and often on the patient getting up. Again, certain sites seemed to be chosen which would suggest some additional mechanical factor—namely, the popliteal vein (flexion of the knee), saphenous opening, the common iliac veins, especially the left (pressure of a loaded bowel). The course of these cases suggested that the origin was not a septic one: (1) because constitutional disturbance was slight; (2) there was no pus formation; (3) they soon recovered, and the vascular channels became re-established.

A CASE OF GASTRIC FISTULA: OPERATION: DEATH.*

By C. F. M. ALTHORP, M.B.LOND.,
Surgeon to the Bradford Royal Infirmary.

A GASTRIC fistula is probably the rarest of the sequelæ of gastric ulcer. The death-rate from gastric ulcer is given as 10 per cent.; of these cases, 7 per cent. are due to acute perforation, and nearly 3 per cent. to hæmorrhage, leaving only a small fraction to be accounted for by perigastric abscess and by gastric fistula. Dr. Murchison could only find recorded 25 cases of gastric fistula in a period extending over three centuries; Wölfler collected 56 cases of acquired gastric fistula. Of these only 4 were cured by operation. Middledorff in 1859 was the first to close a gastric fistula by a plastic operation. This consisted in raising a bridge-shaped flap of skin at the lower border of the fistula, drawing it over the fistula, and uniting it with the upper freshened margin. This was the operation performed by Billroth on March 16th, 1877, in the clinical case generally quoted in surgical textbooks. Billroth cured another patient with gastric fistula by Middledorff's operation, inserting a catheter into the fistula, below the flap of skin. In this way he avoided the digestive action of the gastric juice. A case of gastric fistula was also reported by Kronheimer in the *EPITOME of the BRITISH MEDICAL JOURNAL* for December 22nd, 1900.

Since Billroth's time great advances have been made in gastric surgery. One of the greatest steps has been the separation of adhesions between the stomach and surrounding structures, as advocated by Mayo Robson. In my case a local plastic operation was out of the question. The gastric juice was constantly running out of the fistula, irritating the surrounding skin. In addition, as the result of the abscesses, the middle portion of the left rectus muscle surrounding the fistula now consisted of scar tissue and septic sinuses. It also seemed to be of importance to ascertain the condition of the pylorus, since the physical signs suggested some dilatation of the stomach.

At this stage an attempt might have been made to "sound" the interior of the stomach by passing a soft catheter through the fistula, and trying to ascertain the condition of the pylorus. Had this been successful the pylorus would have been found immediately to the right of the fistula, and the patient in this way could have been fed up until she became in a better condition for surgical interference.

Precautions against shock having been taken in the way of warmly wrapping up the patient, giving a rectal injection of brandy and strychnine hypodermically, on December 7th, 1900, ether was given, and the stomach was washed out through the fistula. The index finger passed easily through the fistula into the interior of the stomach. Three small sponges, each with a piece of silk attached, were packed into the stomach, preventing the escape of gastric contents, and allowing the stomach to be drawn up by means of the pieces of silk. The walls of the fistula were rubbed over with pure carbolic acid, and the surrounding skin made surgically clean. An incision was made 2 inches in length above and to the right of the fistula, the object being to reach the peritoneal cavity clear of the adhesions. This I succeeded in doing. The finger at once found a thick pedicle passing up from the stomach to the anterior abdominal wall, and measuring 3 inches from above downwards and $\frac{1}{2}$ inch from side to side. The stomach was not dilated, and apart from the thickening around the fistulous track, no evidence of disease was dis-

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