DIAPHRAGMATIC HERNIA OF THE ENTIRE STOMACH.

BY

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In the *British Journal of Surgery* for July, 1921, there is published a very full and interesting communication on injuries of the diaphragm, with special reference to abdomino-thoracic wounds, by C. W. Gordon Bryan, of St. Mary's Hospital, London. In this article all that has been written on the subject of diaphragmatic hernia has been reviewed, including a case of diaphragmatic hernia of the entire stomach and great omentum published by me in the *BRITISH MEDICAL JOURNAL*, 1919, ii, 412.

The following case is worthy of being put on record, as it presents some features differing from the cases already published:

On May 17th, 1921, Private R. P. was admitted to Bellahouston Hospital, Glasgow, under my care. He was wounded on September 2nd, 1918, in the left lower chest wall by a portion of an explosive shell which penetrated both the chest and the abdomen. At the casualty clearing station the foreign body was removed, and he was told that the spleen was so severely damaged that it had to be excised. He was discharged from the army on May 31st, 1919, with the wounds completely healed. He worked for nine months thereafter, but had to cease work on account of increasing weakness and of pain after food followed by vomiting. During the following year he was treated for gastritis.

On admission to the hospital he complained of pain in the epigastrium immediately after taking food of any kind, liquid or semi-liquid, and of vomiting of the food fifteen to thirty minutes after. He stated that he had vomited everything that he had taken during the last three weeks before admission, and that the vomiting had relieved the pain. His general condition was bad; he was very emaciated and exhausted, and weighed only 6 st. 7 lb. His face was earthy in colour, his cheeks were sunken, and the tongue was coated and dry. There was a healed indrawn scar in the lower left lateral chest wall, and the appearance as if a portion of the ribs had been removed. He suffered also from cough and had a muco-purulent expectoration. The percussion note was dull at both bases, though slightly tympanitic at the left base. Respiratory murmur, vocal resonance, and vocal fremitus were diminished at the right base and completely absent at the left base. Crepitation was audible at both apices. The abdomen was scaphoid in shape, and rigidity of the abdominal wall made palpation difficult. The stomach outline was impossible to make out by percussion. Pain, tenderness, and rigidity were most marked in the left hypochondriac region. As he vomited everything, even diluted milk, a few minutes after swallowing—the recumbent position made no difference—he was fed by the rectum. Nothing was given by the mouth. His pain lessened, the vomiting ceased, and his general condition slightly improved.

On May 27th, 1921, the abdomen was opened by a paramedian incision above the umbilicus. The entire stomach was found to have disappeared through a hole in the diaphragm; the cardiac and pyloric ends of the stomach met at the opening. The cardiac end appeared pouched as if the liquid nourishment had lodged there before its expulsion. The spleen was absent. The left rectus muscle had to be divided for better exposure. The stomach, which was adherent to the edges of the opening, was separated with some difficulty and drawn back into the abdominal cavity. The walls of the stomach were greatly atrophied, but bore no evidence of having been wounded; no cicatrization was visible on the serous coat. The gap in the diaphragm measured 2½ by 2½ inches, and was situated between the fibres arising from the left external and internal arcuate ligaments, and extended up to the left leaflet of the central tendon. The edges of the gap were firm, hard, and almost tendinous in character. As he was very collapsed, no attempt was made at this operation to close the opening in the diaphragm. The pleural cavity was lightly packed with flanne gauze and the ends of the packing were brought out at the upper part of the abdominal wound. As the defect in the diaphragm was closed by the packing the stomach could not for the present find its way back to the pleural cavity. The abdominal wounds were closed by through-and-through stitches. After a few days of liquid diet he was put on light solid food and relished everything he got. He had no discomfort after food and the cough became less troublesome.

It was decided (June 10th, 1921) to make an attempt to close the opening in the diaphragm from the thoracic side. An osteoplastic flap was reflected upwards, dividing the sixth, seventh, and eighth ribs in two places. This flap was temporarily stitched backward on to the thoracic wall and gave a very good exposure of the pleural cavity with its packing. The gauze was removed and the cavity disinfected. Two flaps of thickened pleura were then dissected from the undamaged portion of the diaphragm and reflected over the gap, completely closing the opening. Though the lung was collapsed it was seen to inflate partially during deep inspiration, and we decided to employ deep breathing exercises as soon as it was practicable. The osteoplastic flap was replaced in position, the periosteum of the opposing ribs stitched together, and the wound closed except for a few strips of gutta-percha tissue

for drainage. He stood the operation very well. His convalescence was uninterrupted. Both wounds were completely healed at the end of three months. The note at the base of the left lung had become slightly resonant in tone as if some expansion of the lung had occurred.

I wrote to him in December, 1922, and he answered that he was quite well except that he could not digest heavy food, and that his weight was 8 st. 2 lb.

Almost all the chronic cases published have an insidious onset. This man was wounded in September, 1918, and was operated on in May, 1921, two and a half years from the date of his wound. His symptoms were gradual in onset, probably becoming worse as more and more of the stomach passed into the pleural cavity. As in my previous case, he was treated for gastritis and the condition was not recognized until his admission to hospital. The situation of the wound and the experience gained in my former case led me to think of diaphragmatic hernia as a possible diagnosis. He was too ill to be submitted to a x ray examination and, moreover, would have vomited the barium meal. His general symptoms were similar to those published in other cases—pain immediately after food or drink, and relieved almost at once by vomiting, followed naturally by extreme emaciation, anaemia, and constipation. The intestines in this case were empty and their walls greatly atrophied.

To have attempted reduction of the hernia and repair of the defect in the diaphragm at the same sitting would have been to court disaster. The abdominal route of exposure at the first operation enabled us more readily to free the stomach from its attachments to the opening in the diaphragm and to examine its condition. In my former case I closed the opening in the diaphragm from the abdominal side; in the present case this would have been a matter of great difficulty. If the case be chronic and the operation of reduction of the hernia and closure of the opening can be done at the same time the thoracic route of approach has many advantages. The thoracic route is well spoken of in the article by Bryan already referred to.

I thank the Ministry of Pensions for permission to publish the case and Dr. William Cunningham, now of Monkseaton, Northumberland, for his able assistance at both operations.

HYDATID CYSTS OF LIVER

ASSOCIATED WITH GALL STONES AND EMPYEMA OF GALL BLADDER AND PLEURA: RECOVERY.

BY

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THE case which is here reported is that of a lady who was first seen in April, 1910; she was then aged 43, and has remained more or less under medical care and treatment for the past twelve years.

History.

When first seen she was suffering from acute pain in the abdomen and a burning sensation shooting up to her throat and into her back. She was vomiting a fair quantity of acid fluid. In aspect she was a soft flabby-looking woman, and stated that she had never been very strong.

Examination showed some tenderness in the epigastrium and also in the right hypochondrium. A provisional diagnosis of gastric ulcer was made. Under dietetic and medicinal treatment the attack gradually subsided in nineteen days.

In August, 1911, she had a similar attack, this time vomiting blood. Under the same treatment the attack subsided in ten days. At this time she was also suffering from nervous symptoms attributable to climacteric changes, and required treatment until February, 1912.

In February, 1913, she had a third attack of pain, referred to the right side of the chest. Breathing was painful, but no evidence of pleurisy was found. In July, 1913, the uterus was cured for menorrhagia. In May, 1914, she was treated for the fourth attack of pain and vomiting, which lasted a week. In June, 1916, she had a fifth attack, lasting fourteen days.

Between June, 1916, and June, 1919, she had repeated attacks of gastric pain and vomiting, each attack lasting ten to fourteen days. Thereafter she steadily improved in health, but always had to be careful of her diet for fear of so-called indigestion. At this period gall stones were suspected to be the cause of her repeated attacks of abdominal pain and vomiting. Examination of the abdomen always revealed the presence of marked tenderness in the epigastrium and some tenderness over the site of the gall bladder. On February 9th, 1922, during the night two urgent messages were received to attend this patient, who is now aged 55, but it was not possible to see her until 8.30 the next morning. On arrival at her