TRAUMATIC DIAPHRAGMATIC HERNIA

Report of a case with long interval between penetrating injury and death following acute intestinal obstruction

By W. R. Probert, M.Chir., F.R.C.S.
Aylesbury* 

Long intervals between chest injury and strangulation of a diaphragmatic hernia are well known. In the case reported here the interval was $33\frac{1}{2}$ years.

Case Report

An agricultural labourer, aged 57 years, was admitted to Tindal General Hospital, Aylesbury, on March 25, 1952, with a history of colicky abdominal pain, vomiting, and absolute constipation of 24 hours' duration. In the previous six months he had had occasional bouts of wind and discomfort beneath the left costal margin, but the bowels had been acting normally till the acute illness. His appetite had been poor, and he had lost weight. A right inguinal hernia had been repaired at the age of 15 years, and in the First World War, at the age of 23 years, he had been wounded in the head, left thigh, and left side of the chest. The date of wounding was September 23, 1918. A month later bloody fluid was aspirated from the chest, but no formal exploration was done. He was discharged from the Army as unfit for service on December 17, 1918.

On Examination

Scars of wounds were visible on the head and left thigh. There were three short scars on the left shoulder and chest wall, one being over the lower ribs posteriorly. The abdomen was distended, and there was visible peristalsis and the bowel sounds were loud. There were no external herniae; the rectum was empty. Radiography confirmed large bowel obstruction (Fig. 1). In the erect film a small dense shadow was seen, but its significance was not appreciated at the time.

First Operation

At the first operation (W.R.P.) on the day of admission, laparotomy was done through a right lower paramedian incision. There was a little blood-stained peritoneal exudate. The small bowel was slightly distended, the caecum, the ascending and transverse colon were greatly distended. There was an area of threatened perforation in the transverse colon. The descending colon was collapsed, and a deep groove was felt between the distended and collapsed parts of the colon. The bowel was fixed at this point which lay above and medial to the spleen. The presence of a carcinoma of the colon was presumed, but this diagnosis was not entirely convincing. A trans-
verse colostomy, well over to the right, was established and opened immediately.

**Post-operative Course**

Progress was marred by collapse of the lower lobe of the right lung, and intermittent fever which persisted for four and a half weeks in spite of various antibiotics. Several transfusions were needed, but the haemoglobin level fell to 62 per cent. (100 per cent. = 15 gm.) in the third week. No leucocytosis was demonstrated at any stage. By the sixth week it was decided to explore the colon. Radiography of the chest shortly before the second operation (Fig. 2) showed the left hemidiaphragm to be high and irregular, and the small dense shadow was again demonstrated. No lateral films were taken.

**Second Operation**

At the second operation on May 9, 1952, (Mr. R. H. Gardiner) the abdomen was opened by a long transverse incision encircling the transverse colostomy stoma. There were severe peritoneal adhesions and there was a small abscess near the colostomy. The colon just proximal to the splenic flexure disappeared into the chest through a hernial orifice, measuring approximately 2 in. x 2 in., in the left hemidiaphragm. The bowel, when freed by blunt dissection from the orifice and fundus of the hernia, showed two deep constriction rings at the orifice.

Right hemicolectomy was done, thereby resecting the herniated portion of colon, the colostomy stoma, the caecum and the ascending colon which contained a diverticulum. A further 6 in. of ileum were resected and continuity restored by end-to-end ileocolic anastomosis.

Microscopic examination of the herniated colon showed chronic inflammatory changes in its wall and a nodule of long-standing fat necrosis in the mesentery.

The hernia had no peritoneal sac; its lining was irregular and the lung could not be identified. A small incision at one point laterally opened a chronic abscess cavity from which an irregular fragment of metal measuring approximately $\frac{1}{2}$ in. x $\frac{1}{4}$ in. x $\frac{1}{2}$ in. was removed. The hernial defect was closed with two layers of silk sutures and the supra-diaphragmatic cavity drained by a tube brought out in the mid-axillary line through an intercostal space. The abdomen was closed with drainage.

**Post-operative Course**

Progress was stormy, due apparently to low-grade peritonitis. He died on the 16th day after the second operation. No autopsy was done.

**Discussion**

Under the colourful title 'The Delayed Action Stab' Harry Windsor of Sydney has recently (1957) stressed the danger of delayed strangulation in diaphragmatic herniae due to stab wounds that were apparently trivial. He also mentioned the possible medico-legal significance of this delay. Belcher (personal communication, 1956) has treated a patient whose death following gastric strangulation 11 months after a stab wound was a matter of serious importance to his assailant. The scar of the chest wound was small and very difficult to see in that case.

In a review of the literature in 1948 Carter and Giuseffi quoted a case in which strangulation of a diaphragmatic hernia occurred 16 years after injury. Among 12 patients with traumatic diaphragmatic hernia treated at Sully Hospital by Dillwyn Thomas there was one case of gastric strangulation six months after a crush injury. One patient developed severe colonic symptoms 16 years after a crush injury and another developed mild symptoms due to hepatic herniation 37 years after a penetrating injury (Havard and Probert, to be published).
March 1959

PROBERT: Traumatic Diaphragmatic Hernia

155

The literature contains many reports of cases in which a symptom-free interval between injury and strangulation of a traumatic diaphragmatic hernia can be measured in months. The latent period in this case was over 33 years. Mild bowel symptoms culminating in acute intestinal obstruction suggested a diagnosis of carcinoma of the colon. The correct diagnosis was not made because the small scars on the chest wall were not deemed relevant; because the shadow of the metallic fragment in the abdominal radiograph was likewise disregarded; and because the original injury was looked upon as an unimportant fact of remote history.

Summary

A case of traumatic herniation of the left hemidiaphragm due to penetrating injury is described.

Following wounding in 1918 there was a long interval without symptoms.

Acute obstruction of the colon developed 33 1/2 years later preceded only by a few months of mild premonitory symptoms.

Acknowledgments

I wish to thank Mr. Ralph H. Gardiner for permission to report this case, and the Chief Medical Officer of the Ministry of Pensions for confirmation of essential dates and for permission for publication.

BIBLIOGRAPHY

BELCHER, J. R. (1956), personal communication.


HAVARD, C., and PROBERT, W. R., to be published.


BIBLIOGRAPHY continued from page 137—The Homograft, C. M. Wyburn


SCOTHORNE, R. J., and MCGREGOR, I. A. (1953), J. Anat. (Lond.), 87, 370.

SCOTHORNE, R. J., and MCGREGOR, I. A. (1955), Ibid., 89, 283.

SCOTHORNE, R. J. (1956), Ibid., 93, 417.


singer, m. (1958), Sci. Amer., 199, 4. 70.

snell, j. d. (1952), Cancer Res., 12, 543.


wyburn, g. m., and bacsich, p. (1955), Brit. J. plast. Surg., 8, 177.

wyburn, g. m., and bacsich, p. (1956a), Trans. Brit. med. Ass., 3, 1. 3.

wyburn, g. m., and bacsich, p. (1956b), Ibid., 3, 3. 70.

wyburn, g. m. (1957), J. roy. Coll. Surg. (Edinb.), 2, 315.

woodruff, m. f. a. (1957), Ann. N.Y. Acad. Sci., 64, 1014.
Traumatic Diaphragmatic Hernia: Report of a case with long interval between penetrating injury and death following acute intestinal obstruction

W. R. Probert

doi: 10.1136/pgmj.35.401.153

Updated information and services can be found at:
http://pmj.bmj.com/content/35/401/153.citation

These include:

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/