Spontaneous rupture of distal oesophagus (Boerhaave's syndrome) with unusual clinical presentation of pneumoperitoneum

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Summary

We present a case of spontaneous rupture of the distal oesophagus that was accompanied by a pneumoperitoneum and was successfully treated surgically.

KEY WORDS: oesophagus, pneumoperitoneum, cholelithiasis, empyema.

Introduction

Spontaneous rupture of the oesophagus is an uncommon clinical condition and can cause unexpected, rapid death in healthy people. The majority of cases are due to some form of 'overstrain', most commonly vomiting (Abbott *et al.*, 1970). The disease was first described by Boerhaave in 1824 (Sealy, 1963). Over 320 cases of spontaneous rupture of the oesophagus have been reported (Abbott *et al.*, 1970; Wilson, Sarver and Arbulu, 1971; Berne, Shader and Doty, 1969; De Luca, Tedesco and Ballan, 1977; Hooshang *et al.*, 1971).

We surveyed all reported cases and did not find any which presented with pneumoperitoneum.

Case report

A 52-year-old male farmer was admitted to the emergency room complaining of severe chest and abdominal pain 4 hr after a bout of vomiting. His temperature was 37.5°C, blood pressure was 90/60 mmHg and pulse rate 100 per min. There were normal breath sounds and the respiratory rate was 45 per min. The abdomen was distended with signs of peritoneal irritation. The haemoglobin, white cell count serum electrolytes, bilirubin and diastase, and

electrocardiogram and chest X-ray were all normal. A plain X-ray of the abdomen showed a large amount of free air under the diaphragm.

An emergency laparotomy was performed through a midline epigastric incision. The abdominal cavity contained free air, fluid and particles of food. A 2 cm tear of the distal end of the oesophagus was found without any signs of foreign body perforation. Scarring of the anterior wall of the duodenum was noted, and the gallbladder was inflamed with a small stone impacted in the cystic duct—a finding which could explain the severe vomiting.

The oesophagus was repaired in two layers and gastric fundoplication was used to close the suture line. A cholecystectomy was performed as well. A decompression gastrostomy and jejunostomy for enteral feeding via a small umbilical catheter was also carried out. Following lavage of the abdominal cavity with saline a two-way sump drain was placed adjacent to the oesophageal rupture and the abdominal cavity was closed.

The immediate post-operative course was stormy and complicated by cardiac arrhythmias, sepsis, respiratory failure and massive gastrointestinal bleeding.

Four days after surgery, the patient's condition was much improved. With the return of bowel movements, enteral nutrition (Vivonex) was started through the jejunostomy. The drains were removed on the 4th postoperative day. On the 9th day an oesophagogram was performed with no signs of leakage or breakdown of the suture line. Twenty-four days after surgery, a right-sided empyema was drained. The same day a second oesophagogram was performed, demonstrating a normal oesophagus.

Five weeks after surgery the patient had made a complete recovery and was discharged from hospital.

Discussion

Spontaneous rupture of distal oesophagus continues to be a difficult surgical problem. Excellent detailed accounts are available (Barrett, 1947; Mackler, 1952; Grewnwald and Heimlich, 1963; Sealy, 1963; Abbott, 1970). In all reported cases the rupture involves the distal oesophagus. All authors agree that 100% mortality is to be expected within 7 days of rupture if surgery is not undertaken, while an overall survival of 70% is attained with surgical intervention (Wilson *et al.*, 1971; Berne *et al.*, 1969; De Luca *et al.*, 1977; Barrett, 1947; Sealy, 1963; Bennett, Deveridge and Wright, 1970). Mortality and morbidity rates can be significantly reduced by early diagnosis and surgical treatment, which is often a hard task.

In Abbott's series (1970), a correct diagnosis was made within the first 12 hr in only 21% of the cases. Barrett (1947) performed the first successful operation for repair of distal oesophageal rupture. Many surgeons prefer thoracotomy for repair of oesophageal rupture (Wilson *et al.*, 1971; Berne *et al.*, 1969; De Luca *et al.*, 1977; Barrett, 1947; Sealy, 1963).

Berne *et al.* (1969) described the advantages of the laparotomy approach over thoracotomy in a series of five patients. They suggested that since experience with transabdominal vagotomy for peptic ulcer had demonstrated an excellent exposure of the lower part of the oesophagus, it would be adequate for repair of spontaneous rupture of the distal oesophagus. In all patients the diagnosis was made before the operation. The authors preferred laparotomy because the patients were in a poor general condition and laparotomy is less dangerous than thoracotomy.

In our case a correct diagnosis was made only during laparotomy. A good exposure of the perforated region was achieved in this approach.

To the best of our knowledge this is the first report of spontaneous rupture of the distal oesophagus presenting with a clinical picture of an acute abdomen and pneumoperitoneum.

References

- ABBOTT, O.A., MANSOUR, K.A., LOGAN, W.D. Jr, HATCHER, C.R. Jr & SYMBAR, P.N. (1970) Atraumatic so-called 'spontaneous' rupture of the esophagus. *Journal of Thoracic and Cardiovascular Surgery*, **59**, 67.
- BARRETT, N.R. (1947) Report of case of spontaneous perforation of oesophagus successfully treated by operation. *British Journal of Surgery*, **35**, 216.
- BENNETT, D.J., DEVERIDGE, R.J. & WRIGHT, J.S. (1970) Treatment of effort rupture of the esophagus: A review with reports of six cases. *Surgery*, **68**, 766.
- BERNE, C.J., SHADER, A.E. & DOTY, D.B. (1969) Treatment of effort rupture of the esophagus by epigastric celiotomy. *Surgery, Gynecology and Obstetrics*, **129**, 277.
- DE LUCA, R.F., TEDESCO, R.J. & BALLAN, R. (1977) Esophageal perforation. An unusual presentation with a benign clinical course. *American Journal of Gastroenterology*, **67**, 362.
- GREWNWALD, E.S. & HEIMLICH, M.J. (1963) Spontaneous perforation of the esophagus. Report of a case. *American Journal of Gastroenterology*, **39**, 614.
- HOOSHANG, B., ANDERSON, J., GARCIA-RIVERA, C. & JUDE, J.R. (1971) Spontaneous rupture of the esophagus. Boerhaave's syndrome. *Annals of Surgery*, **174**, 319.
- MACKLER, S.A. (1952) Spontaneous rupture of the esophagus. An experimental and clinical study. *Surgery, Gynecology and Obstetrics*, **95**, 345.
- SEALY, W.R. (1963) Rupture of the esophagus. *American Journal of Surgery*, **105**, 505.
- WILSON, R.F., SARVER, E.J. & ARBULU, A. (1971) Spontaneous perforation of the esophagus. *Annals of Thoracic Surgery*, **12**, 291.

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