Case reports

Spontaneous rupture of the oesophagus (Boerhaave's syndrome): delayed diagnosis and successful conservative management

Case presented to Clinical Section, 14 October 1988

A R Smyth MA MB BS **C Wastell** MS FRCS
Professorial Surgical Unit, St Stephen's Hospital, London SW10 9TH

Keywords: oesophageal rupture; Boerhaave's syndrome

Spontaneous rupture of the oesophagus, Boerhaave's syndrome, was first described by Herman Boerhaave, an 18th century Dutch physician[1]. Such ruptures are rare and usually occur during vomiting, with incoordinate oesophageal contractions. The diagnosis is frequently made late and this leads to a high mortality. We report a case which illustrates the diagnostic difficulties and a conservative approach to management.

Case report

A 56-year-old man experienced abdominal pain and vomiting, following a right hemicolectomy. Over the next 24 h he deteriorated and became dyspnoeic and hypoxaemic. Bowel sounds were absent and an anastomotic leak was suspected, but not confirmed at laparotomy.

Postoperatively, the physical sign of subcutaneous emphysema was noted in the left supraclavicular fossa. A chest radiograph showed bilateral pneumothoraces and a right pleural effusion.

He remained unwell and required prolonged ventilation, tracheostomy and total parenteral nutrition (TPN). On the 35th day of his illness, enteral feeding was commenced and immediately he became cyanosed, pale and sweaty. Enteral feed was aspirated from the tracheostomy tube. A contrast swallow confirmed oesophageal rupture.

A regimen of TPN, and nil orally was re-established and his condition steadily improved. Finally, on the 98th postoperative day, the patient was discharged on a normal diet.

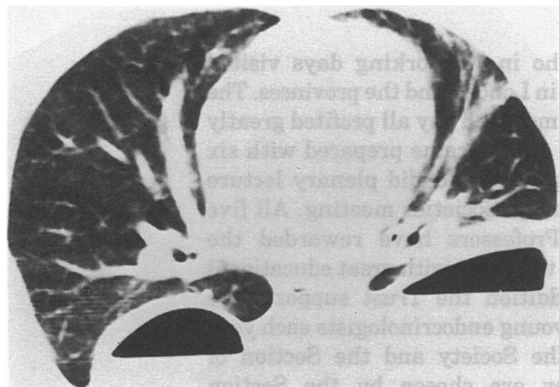

Figure 1. Computed tomography of the thorax in Boerhaave's syndrome, showing intrapleural fluid collections

Discussion

Mortality in Boerhaave's syndrome is increased by late diagnosis. In a series described by Walker *et al.*, the mean time to correct diagnosis was 4 days[2]. In our case the diagnosis was made 35 days after the rupture had occurred.

The classical features of the syndrome are vomiting, chest pain and subcutaneous emphysema, but Walker's series found this triad in only one out of 14 cases[2]. More often the picture is one of an acute abdomen, with increasing respiratory embarrassment developing later[3].

The erect chest radiograph will usually exclude differential diagnoses such as a perforated abdominal viscus. Air can be seen in the mediastinum in a third to a half of cases and pleural effusions may be present[2,3]. The 'V' sign of Naclerio is a density behind the left cardiac border and is a specific early sign[4]. A contrast swallow confirms the diagnosis.

Early series quote a high mortality for non-operative treatment - 100% of patients at one week[5]. However, these studies antedate the introduction of TPN, and suitable antibiotics.

Current series show a mortality of only 9% for conservative management, compared with 40% for surgical repair[4]. The advantages of surgery may not lie in restoring the continuity of the oesophagus, but rather in allowing adequate chest drainage and pleural lavage. Walker pointed out that 50% of simple suture repairs subsequently leak[2].

Successful conservative management depends on maintaining nutrition, whilst excluding swallowed material from the oesophageal tear. In our case we used a regimen of TPN, nil orally and broad-spectrum antibiotics.

A more complicated approach, which limits oesophageal leakage still further, was described by Hinder *et al.*[7]. This method achieved healing in two to three weeks in three patients. The oesophageal tear was isolated by means of oesophagostomy and tube drainage, whilst jejunostomy feeding was maintained.

In conclusion, the conservative management of Boerhaave's syndrome is now the treatment of choice. The simple system used in our case achieves healing slowly, but avoids ancillary procedures such as oesophagostomy. Whichever approach is adopted, speedy diagnosis is essential, as mortality increases for every hour that the rupture remains unrecognized[6].

References

1 Boerhaave H. Atrocis nec descripti prius, morbi historia. Secundum mediciae artis lege conscripti, Lugd. Bot. Boutesteniana, 1724. English translation: *Bull M Library A* 1955;43:217-40
2 Walker WS, Cameron EJW, Walbaum PR. Diagnosis and management of spontaneous transmural rupture of the oesophagus (Boerhaave's syndrome). *Br J Surg* 1985;72:204-7
3 Curci JJ, Horman NJ. Boerhaave's syndrome: the importance of early diagnosis and treatment. *Ann Surg* 1976;183:401-8
4 Naclerio AE. The "V sign" in the diagnosis of spontaneous rupture of the esophagus (an early roentgen clue). *Am J Surg* 1957;93:291-8
5 Derbes VJ, Mitchell RG. Rupture of the esophagus. *Recent Advances in Surgery* 1955;39:688-709, 865-88
6 Lyons WS, Serempis M. Ruptures and perforations of the oesophagus: the case for conservative and supportive management. *Ann Thorac Surg* 1978;25:346-50
7 Hinder RA, Baskind AF, Le Grange LE. A tube system for management of ruptured oesophagus. *Br J Surg* 1981;68:182-4

(Accepted 14 October 1988. Correspondence to Dr A R Smyth, Department of Child Health, Leicester Royal Infirmary, Leicester LE1 5WW)

0141-0768/89/080498-01/$02.00/0
© 1989 The Royal Society of Medicine