Oral presentation of an oesophageal mucosal tear

Sandeep Uppal, P R De

Summary

Tears of the oesophageal wall following sudden forceful vomiting are well documented in literature. In Boerhaave's syndrome there is transmural rupture associated with complications including pneumothorax, pneumomediastinum, surgical emphysema and shock. In Mallory-Weiss syndrome mucosal tears are associated with haematemesis and shock. In neither of these conditions has intraluminal obstruction been described as an aetiological factor. We present a case with similar pathophysiology where oesophageal obstruction by a meat bolus followed by forceful vomiting led to an oesophageal mucosal tear and presentation of a band of oesophageal mucosa in the oral cavity. The patient did not develop any complications and made an uneventful recovery following conservative management.

Keywords: Boerhaave's syndrome; oesophageal wall rupture; vomiting; Mallory-Weiss syndrome

Acute damage to the wall of the oesophagus may be due to spontaneous tears, foreign body ingestion, instrumentation, penetrating injuries and blunt trauma. These tears may be limited to the mucosa or they may be transmural. Presentation includes chest pain, abdominal pain, haematemesis, surgical emphysema, pneumomediastinum, pneumothorax and shock. The morbidity and mortality associated with this condition is significant and early recognition and prompt management is vital for a favourable outcome.

Case report

A 43-year-old woman presented with a one-hour history of dysphagia following ingestion of a meat bolus. Soon after presentation she vomited producing the meat bolus, 60 ml of fresh blood and a broad band of mucosa which protruded out of the oral cavity. The patient complained of severe pain at the root of neck. There was no epigastric or interscapular pain, but there was some tenderness at the root of the neck. The patient had no signs of shock, surgical emphysema or stridor. A thick band of mucosa was seen lying alongside the right side of the tongue (figure 1). This was traced to the post-cricoid area on indirect laryngoscopy. A minimal traction on the mucosa (to rule out the possibility of a free-lying mucosal band) caused excruciating pain at the root of the neck. This suggested its attachment to the post-cricoid area/upper part of oesophagus.

Preparations were made for an emergency oesophagoscopy to assess the situation and to excise the mucosal band lest it should cause acute airway obstruction. On her way to the theatre the patient consecutively swallowed, regurgitated and eventually swallowed the mucosal band. Under anaesthesia the oral cavity, oropharynx and hypopharynx were normal. The post-cricoid area and the upper oesophagus had irregular oedematous mucosa. A circumferential mucosal tear was identified 30 cm from the incisors. The oesophagus was found to contain fresh blood but normal mucosa below this level. The band of mucosa could not be identified, having reverted to its normal position from the post-cricoid area to the tear at 30 cm. A nasogastric tube was passed.

The patient's condition remained stable postoperatively. Intravenous amoxycillin 1 g and clavulanic acid 200 mg were started. She was kept nil by mouth and fed by the nasogastric tube. Gastrograffin swallow performed on the fourth postoperative day showed irregularity of the mucosa in the upper third of the oesophagus but did not reveal any perforation

Department of
Otolaryngology,
Queen's Hospital,
Burton Hospitals NHS
Trust, Belvedere Road,
Burton upon Trent,
Staffordshire
DE13 0RB, UK
S Uppal
P R De

Correspondence to
Mr PR De

Accepted 20 April 1999

Figure 1 Photograph showing the oesophageal mucosa lying on the right side of the tongue and protruding out of the oral cavity

Figure 2 Gastrograffin swallow performed on the fourth post-operative day showing irregularity of the mucosa in the upper third of the oesophagus. There is no evidence of transmural oesophageal rupture

(figure 2). The patient made an uneventful recovery and was asymptomatic at review 4 weeks later. Fibre-optic oesophagogastrosocopy at this time showed a small hiatus hernia and changes of oesophagitis in the lower part of the oesophagus. The mucosa in the upper two-thirds of the oesophagus was normal.

Discussion

Two types of oesophageal damage are well documented after sudden forceful vomiting. In Boerhaave's syndrome, a tear occurs through all the layers of the left lateral wall of the oesophagus just above the diaphragm, produced by sudden increase in oesophageal pressure. The term is generally reserved for spontaneous rupture without intraluminal or extraluminal trauma.¹ In the act of vomiting the diaphragm and the abdominal muscles contract violently upon the dilated stomach and force gastric contents into the oesophagus. When the oesophagus is open, passage out of the mouth is assured but when there is an obstruction at higher levels in the gastro-intestinal tract, oesophageal pressure rises and gastric contents burst through the wall of the lower end of oesophagus. The rupture is usually sharp and linear and penetrates the entire wall of the oesophagus. The initial symptom reported is severe pain in chest, back or abdomen (83%) followed by excessive vomiting (19%), haematemesis (1.7%), dyspnoea (38%) and shock (32%).² There may be pain on swallowing and hoarseness. In 40% patients, spontaneous rupture of the oesophagus is preceded by a history of heavy drinking.² Peptic ulcer disease is present in 41%, neurological disease in 10%, and 5% of patients are healthy.² Later the patient may develop subcutaneous emphysema of the neck and pleural effusion. Radiological examination in the early stages shows air confined to mediastinum; later pneumothorax, pleural effusion and hydropneumothorax may occur. Contrast studies with Hypaque or barium may reveal perforations.

Another condition of a similar nature is Mallory-Weiss syndrome. In this condition small linear tears are found in the mucosa of

Learning points

- sudden forceful vomiting may lead to either Mallory-Weiss syndrome or Boerhaave's syndrome
- in Mallory-Weiss syndrome, small linear tears are found in the mucosa of oesophageal wall and gastro-oesophageal junction. Endoscopy is the method of diagnosis
- the gastro-intestinal haemorrhage of Mallory-Weiss lesion is associated with regurgitation, vomiting, increased abdominal pressure, excessive alcohol consumption and portal hypertension. Haemorrhage may be excessive, leading to shock

the oesophageal wall or gastro-oesophageal junction.¹⁻³ This condition is more common in patients with hiatus hernia and because of milder vomiting the tear is limited to the mucosa without involving the muscular layers.¹ The gastrointestinal haemorrhage of Mallory-Weiss lesion is associated with regurgitation, vomiting, increased abdominal pressure, excessive alcohol consumption and portal hypertension.³ The amount of bleeding may vary from a small amount to massive amounts causing shock and requiring transfusions. Endoscopy is the optimum method of diagnosis.⁴ Endoscopic findings include peptic ulcers, gastritis, duodenitis, varices and hiatus hernia.³ Barium studies are usually unhelpful.¹

We present an unusual case of mucosal tear of the oesophagus which does not conform to the above-mentioned entities but has similar pathophysiology. It can be suggested that it amounts to an extreme form of Mallory-Weiss syndrome. It is likely that the sudden increase in pressure and forceful expulsion of the foreign body caused a oesophageal mucosal tear at 30 cm from the incisors. The mucosa of the upper part of the oesophagus was dissected off the muscle and carried into the oral cavity. However, the mucosa remained attached to the post-cricoid area. We were unable to find any other report of this unusual presentation⁵ and feel that this is probably the first such account.

1 Spiro HM. *Clinical gastroenterology*, 4th edn. New York: McGraw Hill, Inc, 1993.

2 Brauer RB, Liebermann-Meffert D, Stein HJ, Bartels H, Stewart JR. Boerhaave's syndrome; analysis of literature and report of 18 new cases. *Dis Esophagus* 1997;10:64-8.

3 Harris JM, Di Palma JA. Clinical significance of Mallory Weiss tears. *Am J Gastroenterol* 1993;88:2056-8.

4 Grassi R, Romano L, Dietrich A, Rossi G, Pinto A. Inkomplettes Boerhaave-Syndrom der zervikalen Speiseröhre. [Incomplete Boerhaave syndrome of the cervical esophagus] *Aktuelle Radiol* 1995;5:360-2.

5 Pate JW, Walker WA, Hammond Coli Jr. F, Owen W, Johnson WH. Spontaneous rupture of esophagus: a 30-year experience. *Ann Thorac Surg* 1989;47:689-92.