Unusual association of diseases/symptoms

Massive haematemesis due to strangulated gangrenous gastric herniation as the delayed presentation of post-traumatic diaphragmatic rupture

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Summary

Diaphragmatic injuries are quite uncommon and often result from either blunt or penetrating trauma. Diaphragmatic ruptures are usually associated with abdominal trauma; however, it can occur in isolation. Acute traumatic rupture of the diaphragm may go unnoticed and there is often a delay between the injury and the diagnosis. Patients present with non-specific symptoms and may complain of chest pain, abdominal pain, dyspnoea, tachypnoea and cough, heartburn and symptoms of gastro-oesophageal reflux. Respiratory distress and faeco-pneumothorax have been reported. We present an interesting case of traumatic diaphragmatic hernia presenting 5 years after a road traffic accident as acute abdomen and massive haematemesis due to strangulated gangrenous gastric hernia.

BACKGROUND

Haematemesis due to strangulated gastric hernia after traumatic diaphragmatic herniation has not been reported so far. There has been a case report of haematemesis and malena due to splenic vein thrombosis in a herniated thoracic spleen due to fundal varices.¹ Our case highlights the need for immediate surgical intervention especially when x-rays could be misinterpreted.

CASE PRESENTATION

An 18-year-old Burmawli man presented with abdominal pain and vomiting of blood of 2 days' duration. The pain started suddenly, mainly in the epigastrium, which increased when lying down, with no radiation. The patient gave a history of vomiting blood four times per day, 50–100 ml each time, but denied any history of drug taking and malena. His past history was significant due to blunt abdominal trauma during a road traffic accident. On examination, he was anxious with blood pressure of 90/70 mm Hg in supine posture, pulse rate 122/min and respiratory rate 24/min. Cardiovascular examination revealed tachycardia. The abdomen was soft with guarding and tenderness over the epigastrium, positive bowel sound and no organomegaly. Investigations revealed a haemoglobin level of 7 g/dl (normal 14–16 g/dl); serum chemistry, coagulation profile and platelet count was normal but leucocyte count was 14 000/(normal 4000–11 000/cm³). His chest x-ray revealed air-fluid level on the left side (figure 1). The patient was resuscitated with blood transfusions.

Oesophagogastroscopy was performed, which revealed active bleeding from the gastric fundus and a doubtful mass. The procedure was abandoned and the patient was taken to the operation theatre.

With laparoscopy there was strangulated hiatus hernia (stomach and omentum), which could not be reduced laproscopically. Laparotomy was performed and the stomach and omentum were reduced from the thoracic cavity. Findings of gangrenous, but not perforated, stomach and adherent omentum were noted and resected from the lower end of the oesophagus to the antrum. Gastrectomy with oesophago-jejunostomy and jejunojunctionostomy side-to-

Figure 1 Chest x-ray showing hydropneumothorax.

Figure 2 CT scan showing residual pleural effusion and collapsed lung.

side anastomosis were done. The patient was transferred to the intensive care unit. The postoperative period was uneventful. CT scan without oral contrast was done on the fourth postoperative period, which revealed left pleural effusion and collapsed lung (figure 2). Barium follow-through was done 2 weeks later, which showed maintained anastomosis (figure 3), and the patient was discharged home on special dietary instructions.

INVESTIGATIONS

Chest x-ray, oesophagogastroduodenoscopy and CT.

DIFFERENTIAL DIAGNOSIS

Peptic ulcer disease, gastric leiomyoma and hydropneumothorax.

OUTCOME AND FOLLOW-UP

The patient survived and has regular follow-up but has significant weight loss.

DISCUSSION

Blunt abdominal trauma usually results from motor vehicle accidents, assaults and recreational accidents or falls.² Delayed presentation is well-reported in the literature.³ Isolated diaphragmatic injuries do occur in children more frequently than in adults.⁴ Herniation of the abdominal viscera is the most common sequel, with strangulation and perforation the most serious complication of diaphragmatic herniation.

The incidence of diaphragmatic ruptures after thoraco-abdominal traumas is 0.8–5% and up to 30% diaphragmatic hernias present late.⁵ Blunt trauma to the abdomen increases the transdiaphragmatic pressure gradient

Figure 3 Barium follow-through showing delineation of small bowel and jejunum postoperatively.

between the abdominal compartment and the thorax.⁶ This causes shearing of a stretched membrane and avulsion of the diaphragm from its points of attachments due to sudden increase in intra-abdominal pressure transmitted through the viscera.⁷ The likely explanation for delay in diagnosis is that the diaphragmatic defect occurring with injury manifests only when herniation occurs.⁸ Traumatic diaphragmatic hernia is a frequently missed diagnosis and there is commonly a delay between trauma and diagnosis ranging from 24 h to 50 years.^{6,9}

Patients present with non-specific symptoms and may complain of chest pain, abdominal pain, dyspnoea, tachypnoea and cough.¹⁰ There is a report of one case presenting with haematemesis and melaena.¹ This was due to splenic herniation into the left hemithorax, causing fundal varices due to splenic vein thrombosis leading to upper gastrointestinal bleed 28 years after the penetrating injury. There are case reports of pneumopericarditis¹¹ and faeco-pneumothorax.¹² Our case is unique because of the stomach with omentum being herniated and strangulated; thus, resulting in gangrene of the stomach and bleeding. Abdominal pain was due to gastric ischaemia, which in other studies has been reported to be due to intestinal obstruction. Thus, in situations such as ours, rare causes of haematemesis must be considered for timely surgical intervention.

Learning points

- Post-traumatic sequelae-like diaphragmatic hernia in children is not uncommon and must be considered, especially in blunt abdominal trauma, and can present in adulthood due to the growth of body compartments.
- Gastric herniation and gangrene presenting as acute abdomen and haematemesis is the rare delayed presentation of post-traumatic diaphragmatic hernia.
- Unusual causes of major upper gastrointestinal bleed must be considered when endoscopic findings are inconclusive.

Acknowledgements we acknowledge the patient and his family for allowing consent.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Wani AM, Al Qurashi T, Rehman SA, Al Harbi ZS, Sabbag ARY, Al Ahdal M. Massive haematemesis due to strangulated gangrenous gastric herniation as the delayed presentation of post-traumatic diaphragmatic rupture. *BMJ Case Reports* 2010;10.1136/bcr.04.2010.2874, date of publication

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