Case report

Aortoesophageal perforation following ingestion of razorblades with massive haemothorax

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Abstract

Aortoesophageal fistula is a rare complication of foreign body ingestion. Typically having ingested a fish or chicken bone, the patient complains of chest pain or discomfort and/or may present with massive gastrointestinal bleeding, which in all but rare cases is fatal. The pathological mechanism may involve perforation and direct communication of oesophagus and aorta usually at the level of the aortic arch; or more usually following oesophageal perforation, the subsequent mediastinal abscess leads to necrosis of the aortic wall. Torrential haemothorax as a result of such a process has not been previously described, though it has undoubtedly occurred. We present a case of massive haemothorax following deliberate ingestion of razorblades that highlights clinically and radiologically the natural course of such a tragic action.

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1. Introduction

The first successful surgical outcome following a case of aortoesophageal fistula was reported in 1980 and remains one of only a handful of such published cases [1,2]. Causes described include aortic aneurysms, locally advancing malignancy, foreign body ingestion and trauma including iatrogenic causes [3]. In over 2000 case reviews of foreign body ingestion, only 25 cases (1%) resulted in oesophageal perforation typically involving fish or chicken bones, of which two cases developed an aortoesophageal fistula [4].

Despite the numerous cases published on various aspects of aortoesophageal fistula, most report torrential gastrointestinal haemorrhage and haematemesis as the terminal event [5]. One case reported cardiac tamponade [6]. No doubt, massive haemothorax has occurred as a result of aortoesophageal fistula, but no case describing such an event was identified.

2. Case report

A 44-year old Caucasian female with an extensive psychiatric history and previous deliberate self-harm presented to Accident and Emergency (A&E), having swallowed four razorblades and one scalpel 8 days previously. The patient was admitted under the surgical team and had one razorblade removed from the oesophagus and one from the stomach via oesogastroscopy. Admitting chest X-ray was normal and the abdominal X-ray revealed two razorblades in the right colon (Fig. 1). These moved to the left colon during the course of the patient’s admission. Following a 3-day period of observation, the patient remained stable, pain-free and generally well, and was discharged with no further surgical intervention planned.

The patient re-presented to A&E the next day, complaining of sudden onset, severe abdominal pain and two episodes of vomiting dark brown fluid. Further ingestion of foreign bodies was denied. On examination, the abdomen was tender all over, especially in the epigastric area. Blood pressure and heart rate were normal and chest examination was unremarkable. Erect chest X-ray and abdominal X-ray were normal (with no razorblades noted), and blood results revealed a high white cell count of $25.5 \times 10^9/l$ and haemoglobin of 13.3 g/dl.

Six hours after admission the patient’s condition deteriorated with tachycardia and a blood pressure of 90/50 mmHg. An urgent abdominal computerised tomography (CT) scan was requested. During the CT scan the patient arrested. Cardiac output was regained following aggressive fluid resuscitation and increasing doses of adrenaline. Considering her recent history and despite no overt evidence of...
gastrointestinal haemorrhage, she was prepared for emergency laparotomy whilst the CT scan was reviewed (Fig. 2a and b).

On receiving the CT report in theatre prior to opening the abdomen a right intercostal drain was inserted with the immediate release of over 2 l of ‘fresh’ blood and loss of cardiac output. The cardiothoracic team immediately attended and performed a right posterolateral thoracotomy to relief the tamponading haemothorax. Despite vigorous resuscitation with fluids, blood and adrenalin, the heart was empty and contracting asynchronously. The thoracic aorta was flaccid and a soft tissue collection was noted in the mid-distal oesophagus that was clearly fistulating through to the mediastinum. Subsequent post-mortem confirmed a mediastinal abscess and aortoesophageal fistula but no significant clot in the gastrointestinal tract. No foreign bodies were found.

3. Conclusion

The underlying mechanism of aortoesophageal fistula formation is likely to reflect the underlying cause, but typically as in this case, when this is a time lapse between initial insult and subsequent outcome, a process of mediastinal infection or abscess formation and eventual aortic wall erosion is likely to be the cause. Presentation is, therefore, often insidious with what has been described as ‘Chiari’s triad’ of central chest pain, sentinel haemorrhage, then a symptom-free interval followed by fatal exsanguinations (named after Hans Chiari, from a case described in 1914 [7]). Exsanguinations are gastrointestinal, typically with massive haematemesis, but in this case no significant blood was noted in the gastrointestinal tract, and massive haemothorax was the fatal event. One can only speculate as to why this was, and may reflect the nature of the objects swallowed, though no razorblades were found in the mediastinum.

Though the outcome may be unavoidable, a high index of suspicion must be present in any patient who accidentally or deliberately ingests foreign bodies, particularly an object such as a razorblade.

References


