Spontaneous intramural haematoma of the oesophagus: complete resolution on follow-up magnetic resonance imaging

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ABSTRACT

Spontaneous oesophageal dissection with intramural haematoma formation is an uncommon form of oesophageal injury with a characteristic imaging appearance. We report the clinical and radiological features of a 66-year-old woman presenting with acute onset chest pain, where computed tomography revealed a large haematoma within the wall of the thoracic oesophagus. The patient responded well to conservative management. Magnetic resonance imaging, performed seven days after the initial presentation, confirmed the resolution of the lesion.

Keywords: intramural haematoma, oesophageal dissection, oesophageal haematoma, oesophageal injury, spontaneous oesophageal haematoma

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INTRODUCTION

Spontaneous intramural rupture and haematoma of the oesophagus, also known as oesophageal dissection, is a well-documented but relatively uncommon cause of acute chest pain.[1-3] Important differential diagnoses in the acute setting include acute myocardial infarction and aortic dissection, and sometimes, Boerhaave syndrome.[4] Multislice computed tomography (CT) has emerged as the imaging modality of choice to establish the diagnosis.[5] Conservative management is successful in almost all patients,[1,3] with spontaneous resolution of the haematoma in about two weeks.[6] We present a case in which the diagnosis of an intramural haematoma involving a long segment of the thoracic oesophagus was made on CT, and spontaneous resolution was documented on a follow-up magnetic resonance (MR) imaging done one week later.

CASE REPORT

A 66-year-old woman presented with a sudden onset of severe pain in the chest and epigastrium, which developed over a few minutes and was not related to food intake. It was associated with a single episode of vomiting, small in amount. The onset of chest pain preceded the vomiting. There was no history of haematemesis. She had no previous history of symptoms related to her upper gastrointestinal tract. She was not a known hypertensive and did not suffer from any cardiac ailment. Her vital signs were stable, and blood pressure was 130/84 mmHg. The clinical examination revealed no abnormality. A normal electrocardiogram ruled out myocardial infarction. Her chest radiograph and abdominal ultrasonography were within normal limits. The intensity of the pain decreased over the first few hours, but she continued to have a constant dull ache that was aggravated by swallowing.

A contrast-enhanced CT of the chest and upper abdomen revealed an asymmetric mural thickening involving a long segment of the thoracic oesophagus (Fig. 1), extending from approximately T2–T3 vertebral

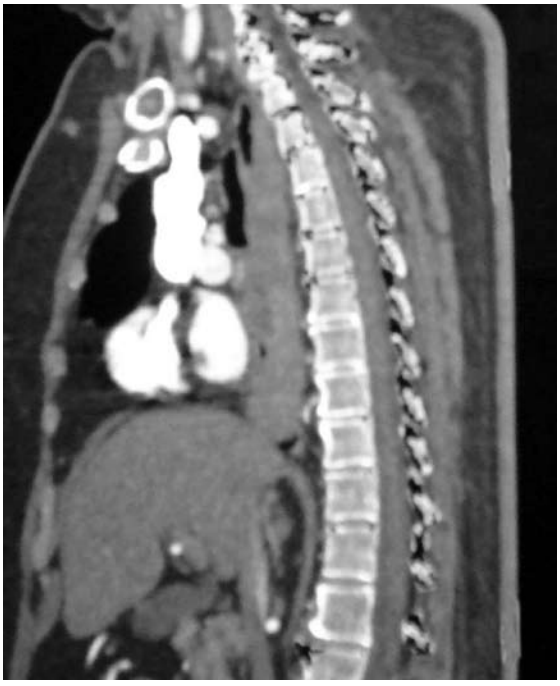

Fig. 1 Sagittal reformatted CT image shows the large craniocaudal extent of the lesion, extending from approximately T2–T3 level, almost up to the diaphragmatic oesophageal hiatus. The abdominal oesophagus and gastro-oesophageal junction were not involved.

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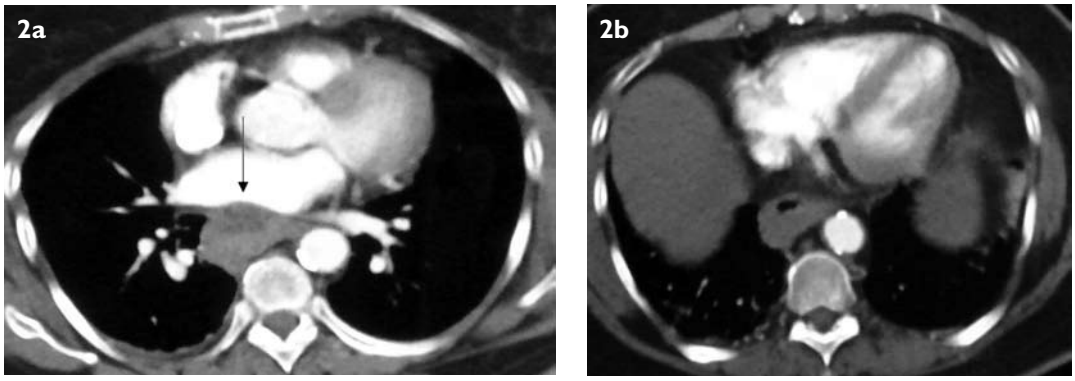

Fig. 2 (a) Axial CT image taken at the level of the left atrium shows asymmetric mural thickening involving the oesophagus, with the presence of differential densities and a fluid-fluid level within the oesophageal wall (arrow). There is minimal right-sided pleural effusion. (b) Axial CT image taken at the level of entry of the inferior vena cava into the right atrium, shows a narrowing of the oesophageal lumen and eccentric wall thickening, most evident along its posterior and right lateral walls.

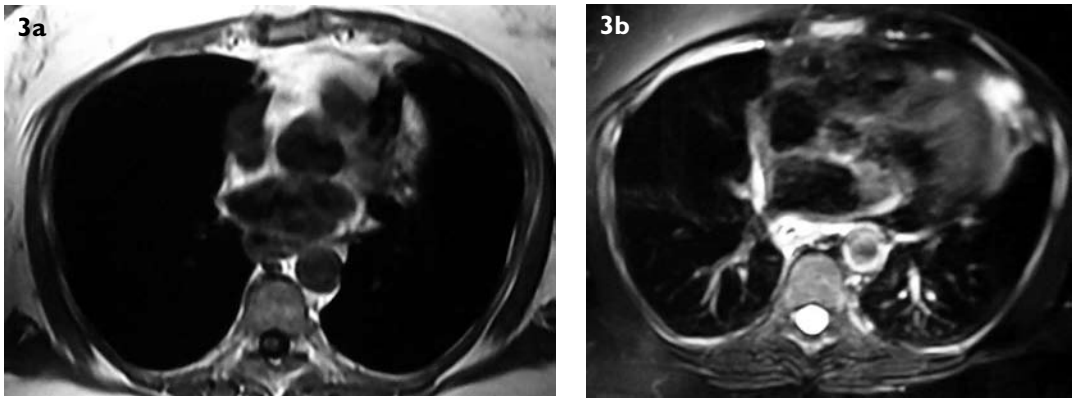

Fig. 3 MR imaging done seven days following CT. (a) Axial T1-W and (b) T2-W images taken at the level of the left atrium show a near-complete resolution of the oesophageal wall thickening.

level up to the T10 level (close to the diaphragmatic oesophageal hiatus). The gastro-oesophageal junction was not involved. Areas of high density (approximately 70–80 Hounsfield units) were present within the thickened oesophageal wall, with evidence of layering at some places, giving rise to a fluid-fluid level (Fig. 2a). The lumen of the oesophagus was compromised (Fig. 2b). There was minimal pleural effusion on the right side. The lung fields were unremarkable. There was no evidence of pneumomediastinum or pneumothorax.

On the basis of the CT findings, the diagnosis of a spontaneous intramural haematoma of the oesophagus was made. The patient was put on conservative management, kept nil by mouth, and administered intravenous fluids and antibiotics. Her coagulation profile was performed to rule out a bleeding disorder and was found to be normal. Her symptoms gradually improved over five to six days. Oral feeds were reinstated on Day 6. As she still complained of mild discomfort during swallowing, MR imaging was performed on Day 8 to look for resolution, but it showed a normal oesophageal lumen, with no evidence of significant residual mural thickening or abnormality (Fig. 3). The patient was subsequently discharged and had no complaints at the one-month follow-up.

DISCUSSION

The Mallory-Weiss and Boerhaave syndromes are well-known patterns of oesophageal injury. Both these entities have certain common aetiopathogenetic factors; both are known to occur after bouts of forceful vomiting and are more common in men, and the oesophageal tears that occur in both of them—partial perforation in Mallory-Weiss syndrome and complete in Boerhaave syndrome—tend to involve the lower oesophagus as a rule.[1] Intramural rupture and haematoma of the oesophagus is a separate, distinct pattern of oesophageal injury. The exact aetiology of this condition remains uncertain, though sudden changes in the oesophageal pressure, as during uncoordinated movements while swallowing or vomiting, have been postulated to play a role. Though the term, spontaneous haematoma, is often employed, some cases are thought to occur as a result of abrasive trauma by foodstuff, impaired haemostasis

and as a complication of sclerotherapy for oesophageal varices, or related to vomiting or swallowing. The term, spontaneous, should be reserved to describe cases where no causative factor can be identified.[7]

Cases of intramural oesophageal haematoma have been reported more frequently in middle-aged or elderly females. The clinical picture is usually dominated by severe chest pain.[1,5] Many patients eventually complain of dysphagia and may have haematemesis, which can help the clinician to consider the oesophageal pathology as the cause of pain.[8] Features of shock, which are seen in oesophageal perforations in the Boerhaave syndrome, are absent. The most common location of the haematoma is in the distal oesophagus (83% cases), which is the portion least supported by surrounding structures. However, long segment involvement is common – the mid-oesophagus is involved in 68% and the proximal oesophagus in 27% of the cases.[5] A submucosal location is the accepted site of the haematoma within the wall of the oesophagus,[9] and it has been proposed that the haemorrhage originates within and dissects through the submucosal plane and then ruptures through the oesophageal mucosa,[8] analogous to the dissection of the aorta.

The chest radiograph in these cases shows no significant abnormality. In the past, contrast swallow studies were the mainstay of radiological diagnosis – they demonstrated extraluminal contrast within the oesophageal wall and compression of its lumen by the haematoma.[1] However, with the advancements in CT technology, multislice CT has become the initial imaging modality of choice, as it permits rapid, noninvasive evaluation of the oesophagus, and simultaneously rules out pulmonary or aortic pathology. The haematoma shows areas of hyperdensity on non-contrast images, which is helpful for diagnosis.[5] The presence of fluid-fluid levels, as seen in our case, has not been highlighted in previous reports. The luminal compression and the craniocaudal extent of the lesion are well depicted on multislice CT. Endoscopy has been safely performed in patients, particularly where haematemesis was a prominent and early symptom.[8] Endoscopic findings are typical, with a bluish submucosal haematoma causing a bulging of the overlying mucosa.

The MR findings of this entity have also been described;[10] however, the long scan times, along with motion artifacts, are a great disadvantage in the acute setting for evaluation of these patients with chest pain. MR imaging has a role in follow-up evaluation, where it scores over CT in its lack of radiation exposure. Conservative treatment is successful in the vast majority of cases, with progressive resolution of the haematoma, which tends to ulcerate before resolving.[8] 75% of the patients are symptom-free at two weeks follow-up.[5] In many reported cases, a diminution of symptoms was considered an indirect evidence of resolution. In other cases, repeat endoscopy[8] and follow-up CT were used to look for signs of healing.[5] In our patient, MR imaging proved to be an extremely effective method of demonstrating resolution of the lesion.

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