Intramural haematoma of the oesophagus

The role of endoscopy

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Summary

The clinical, radiological and endoscopic aspects of 2 cases of intramural oesophageal haematoma are presented. The diagnosis was firmly established at endoscopy, and both patients responded to conservative therapy. The value of endoscopy in the diagnosis and management of this condition is emphasized.


Injury to the oesophagus may vary from a relatively minor mucosal laceration to the more serious complication of complete oesophageal rupture. A less common intermediate form of injury with incomplete rupture, submucosal haemorrhage, and intramural dissection of the oesophageal wall, is recognized. The clinical and radiological features of intramural oesophageal haematoma have been well described, but there has been very little reference to the endoscopic aspects.

We wish to report on 2 patients with intramural oesophageal haematomas, in order to emphasize the endoscopic characteristics.

Case reports

Case 1

On 19 December 1978, a 50-year-old man developed a severe burning retrosternal pain after eating a banana. He then vomited approximately 30 ml of fresh blood mixed with food. The pain persisted for about 2 hours, and thereafter occurred only on swallowing. Therapy from his private medical practitioner did not help, and he was referred to hospital on 22 December 1978. He had diabetes mellitus, but there was no history of previous dyspepsia or dysphagia. The patient had a mild pyrexia of 38°C but physical examination was otherwise negative.

Relevant laboratory investigations showed a haemoglobin concentration of 13,6 g/dl, a white cell count of 9 300/μl, a platelet count of 308 000, and a prothrombin index of 78%.

A chest radiograph was normal. The following day, a Gastrografin swallow revealed a large, smooth intraluminal filling defect, extending along the length of the oesophagus from just below the upper sphincter to a few centimetres above the cardiac junction (Fig. 1A). The radiological appearance suggested an intramural haematoma of the oesophagus.

Oesophagoscopy with the Olympus GIFK gastroscope showed gross intraluminal distension of the mucosa, involving virtually the entire length of the oesophagus along its posterior wall. The mucosa had a dark-bluish discoloration, indicative of a large collection of blood in the submucosa. There was no obvious mucosal laceration.

The painful dysphagia gradually improved on therapy with intravenous fluids and antibiotics. After 5 days, a repeat barium swallow (Fig. 1B) showed a marked reduction in the size of the haematoma. An irregular outline along the right oesophageal margin indicated that sloughing of the overlying dissected mucosa had occurred, leaving a denuded submucosal surface. The patient still had moderate pain on swallowing, but was discharged from hospital at his own request. At follow-up 2 months later he was completely well, and a barium swallow (Fig. 1C) showed complete healing of the mucosal surface.

Case 2

A 59-year-old woman presented at the hospital on 29 January 1979 with nausea and vomiting of approximately 1 litre of fresh blood. This was followed by vague soreness retrosternally, which became very painful on swallowing both liquids and solids. There was no previous history of dyspepsia or dysphagia.

She had mild pallor on physical examination but was not distressed or shocked. The rest of the examination was normal. Her haemoglobin concentration was 11,9 g/dl and the white cell and platelet counts were normal.

The patient was subjected to urgent endoscopy with the Olympus GIFK gastroscope. This revealed a prominent intraluminal bulge of the mucosa, occupying the anterior wall of the oesophagus (Fig. 2A). The mucosa had a dark-bluish discoloration proximally, but more distally the mucosa was noticeably paler. At the distal end of the bulge some fresh bleeding was noted, which presumably was the site of a mucosal laceration. The stomach and duodenum were normal. A barium swallow (Fig. 3) showed an intraluminal filling defect on both lateral margins of the barium-filled oesophagus, with irregularity of the right oesophageal margin indicating mucosal laceration.

The patient was managed conservatively on intravenous fluid therapy. After 1 week she still had mild retrosternal pain on swallowing liquids. Repeat oesophagoscopy showed an ulcerated submucosal surface where sloughing of the overlying distended mucosa had occurred (Fig. 2B). The patient improved gradually over the next 2 weeks and oesophagoscopy now revealed complete healing of the oesophageal mucosa (Fig. 2C).

Discussion

Partial oesophageal rupture with intramural haematoma formation should be strongly suspected in a patient manifesting...
Fig. 1. Case 1: A — Gastrografin swallow demonstrating intraluminal filling defect of oesophagus; B — repeat barium swallow 5 days later showing irregularity of right oesophageal margin; C — follow-up barium swallow at 2 months shows complete healing of oesophagus.

Fig. 2. Case 2: A — endoscopy showing submucosal haematomas of the oesophagus; B — repeat endoscopy after 1 week shows an ulcerated submucosal surface; C — complete healing of the mucosa after a further 2 weeks.
Fig. 3. Case 2: barium swallow showing filling defects on both lateral margins of the barium-filled oesophagus (large arrows), with mucosal irregularity at the distal end of the right oesophageal margin. The oesophageal outline is demarcated by the 'guttering effect' of the contrast medium, as it runs down the sides of the submucosal haematoma (small arrows).

retrosternal chest pain, dysphagia and/or haematemesis. The absence of subcutaneous emphysema in the neck and of chest signs should further differentiate this condition from the more serious complication of complete oesophageal rupture. Intramural perforation may occur as the result of oesophageal instrumentation, nasogastric suction in neonates, foreign bodies, vagotomy, remote trauma, emesis or gagging while eating, or spontaneously in patients on anticoagulant therapy.

In incomplete oesophageal perforation, due, for instance, to oesophageal instrumentation or foreign bodies, the damage is physically induced by the offending agent. In emetogenic injury, however, the mechanism is less well understood. A sudden increase in intraluminal oesophageal pressure, associated with the act of vomiting, appears to be an important factor in its pathogenesis. Studies have shown, however, that the mucosal layer of the oesophagus is more resistant to tears than the muscle layer. It is probable that some minor pre-existing mucosal defect or lesion, such as oesophagitis, may favour mucosal laceration and intramural perforation.

The diagnosis of intramural oesophageal haematoma has largely relied on radiological studies. Contrary to expectation, barium has been recommended as the medium of choice in patients with suspected oesophageal rupture. The characteristic feature on barium swallow is the 'double-barrelled' oesophagus in which contrast delineates the intramural cavity and is separated from the true oesophageal lumen by a linear lucent stripe. Less commonly, as in the present report, a large intraluminal filling defect is noted when no communication between the intraluminal cavity and oesophageal lumen is apparent.

The role of endoscopy in this condition has not been clearly defined. In many instances this investigation has been either delayed or completely omitted for fear of precipitating complete oesophageal rupture. The use of the flexible endoscope, however, would reduce the risks associated with the rigid endoscope. The endoscopic features reported are mainly those of mucosal laceration of the oesophagus, and only rarely has an obvious submucosal haematoma been commented upon. As demonstrated in our 2 patients, early endoscopy was helpful in establishing the diagnosis of intramural oesophageal haematoma. In addition, it afforded a useful method of assessing the progress of the condition in the 2nd patient.

With large mucosal dissections, devascularization and sloughing of the overlying mucosa occur, leaving a raw submucosal surface. Small submucosal haematomas, however, are probably reabsorbed without disruption of the mucosal surface. Occasionally, organization of the submucosal haematoma occurs and may cause difficulty in diagnosis.

The treatment of intramural perforation of the oesophagus is essentially conservative. This is in contrast to complete perforation, which is a serious condition requiring surgery. The correct choice of therapy therefore depends on a definitive diagnosis of intramural oesophageal perforation. In this regard, endoscopy could be useful in confirming the radiological diagnosis, or in providing a diagnosis when radiological investigation has not been performed, or when the findings are inconclusive.

REFERENCES