

Unusual complication of ingestion of a foreign body

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Abstract

Foreign bodies of the upper aerodigestive tract are common problems dealt with by the otolaryngologist. Among all foreign bodies in the oesophagus, an open safety pin still presents a challenge for the ENT specialists because of its propensity to pierce the oesophagus and surrounding structures. We present an interesting case of a long-standing foreign body i.e. an open safety pin, which, after piercing the hypopharynx, caused fatal common carotid artery rupture.

Key words: Foreign Bodies; Carotid Artery, Common; Rupture

Introduction

Over 90 per cent of ingested foreign bodies pass uneventfully through the gastrointestinal tract. Problems arise in a small number of cases in which the foreign body is sharp and impacts, mostly in the oesophagus. These sharp foreign bodies can lead to life-threatening complications such as perforation, tracheoesophageal fistula, mediastinitis, the erosion of major blood vessels. Perforation may also occur during attempts at endoscopic removal of different foreign bodies.

Case report

A 20-year-old female presented to the ENT emergency department of Lok Nayak Hospital with complaints of massive haematemesis, after ingestion of a safety pin during an epileptic attack, and dysphagia for 10 days.

On examination the patient was in hypovolumic shock. X-ray soft tissue of neck (Figures 1 and 2) showed an open safety pin with the pointed end towards the left side at the level of the sixth cervical vertebra. On rigid oesophagoscopy, the safety pin was found to be covered with slough, with the open end piercing the left lateral pyriform sinus wall. The safety pin was removed with a foreign body forceps without any resistance or trauma. Immediately after removal, the patient again started bleeding profusely from the oral cavity. It was then decided to explore the neck to find the site of bleeding by a left lateral pharyngotomy incision. A 1.5 cm vertical rent with ragged edges was found in the left common carotid artery. The surrounding arterial wall was thickened and inflamed. The rent was repaired using a small muscle flap from the sternocleidomastoid muscle.

The patient was well for three days after which she developed local wound infection following oral intake. While the patient was being managed conservatively with intravenous antibiotics and dressings, on the 10th day she again developed a massive oral bleed. She was taken up for exploration under general anaesthesia. This time the common carotid artery was found to be thickened, inflamed and necrotic with a thrombus inside the lumen,

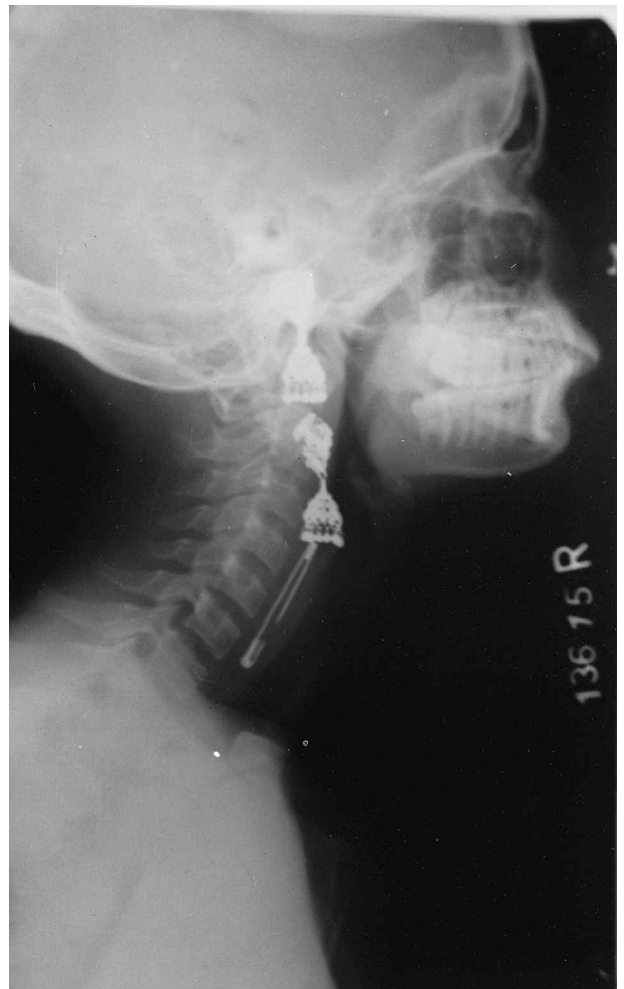


FIG. 1

AP view showing open safety pin with pointed end on left side.

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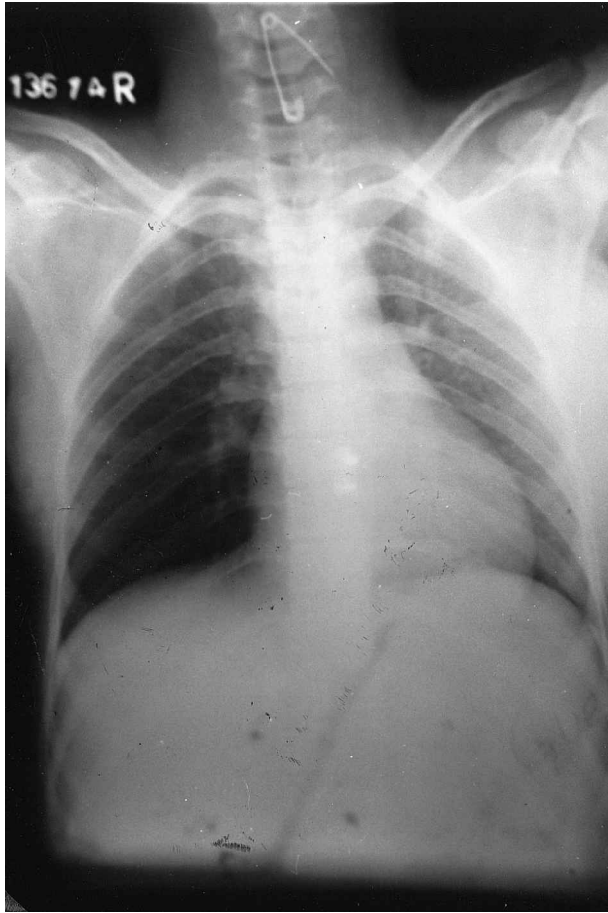


FIG. 2

Lateral view showing open safety pin.

and was irreparable. Hence it was decided to ligate the common carotid artery both proximal and distal to the rent. The patient developed left hemi-paresis post-operatively. A computed tomography (CT) scan of the head revealed bilateral frontoparietal infarcts (right side larger than left). The patient's condition deteriorated further with onset of difficulty in respiration and after three days in ICU she died of cardiorespiratory arrest.

Discussion

The literature is full of instances of a sharp foreign body in the gastrointestinal tract, but a foreign body causing carotid blowout is rare and we could find only one such case. It has been reported by Bass *et al.*¹ in which the foreign body (open safety pin); after piercing the hypopharynx, caused erosion of the common carotid artery. He recommended proximal and distal ligation of the common carotid artery. In our case the open safety pin had pierced the left pyriform sinus wall and entered the left common carotid artery. The delayed presentation and patient taking feed orally led to the introduction of infection from the hypopharynx to the common carotid artery. This ultimately led to necrosis of the wall of the artery and resultant blow out 10 days after foreign body ingestion. The relative movement of the foreign body during swallowing possibly contributed to the extension of the initial small perforation into a large linear rent, which was found pre-operatively. Numerous cases of an open safety pin causing oesophageal perforation² and complications such as hemopericardium³ and aortic aneurysm⁴ have been reported.

Ligation of the common carotid artery is a serious undertaking with a significant morbidity and mortality. If treated conservatively the uncontrolled carotid blowout has almost 90 per cent mortality so the only recourse is to ligate the artery. In the pre-antibiotic era carotid artery erosion secondary to peritonsillar or parapharyngeal space infection was very common and 56 per cent mortality was observed if the carotid artery was ligated. Ten per cent of these patients died as a direct result of artery ligation, and another 10 per cent had non-fatal cerebral complications. Approximately 30 per cent of these patients died as a result of infections or other complications not associated with ligation of the carotid arteries. After Salinger and Pearlman,⁵ reviewed the literature and added some additional cases, they came to a similar conclusion that ligation of the artery because of rupture secondary to infection was essential. With the introduction of antibiotics the number of such cases declined. At present the most common cause of the carotid blowout is post-radiotherapy cases of advanced head and neck malignancy.

In this era of improved electrolyte management, antibiotics, and intra-operative advances in anaesthesia, mortality and morbidity from carotid artery ligation has diminished. Moore and Baker⁶ extensively studied artery ligation and its sequel. In a series of 88 carotid ligations, an overall complication rate of 45 per cent and a mortality of 31 per cent were noted. Moore and Baker found a marked reduction in both morbidity and mortality in the last five years of their study with a 31 per cent and 11 per cent complication and death rate, respectively. McCoy and Barsocchini⁷ found 25 per cent mortality in spontaneous carotid artery ruptures after major head and neck surgery, with ligation of the artery as an emergency procedure. Ledgerwood and Lucas⁸ ligated the carotid artery for mycotic aneurysms in three cases without mishap. In another study by Mika *et al.*⁹ emergency ligation of the common carotid artery or internal carotid artery caused no neurological casualties in 70 per cent of the patients.

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