

Case report

An aluminium foreign body in the oesophagus

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Impaction of an oesophageal foreign body is not an unusual problem and most commonly occurs in young children who are otherwise normal or in adults often with an underlying psychiatric history,¹ or benign oesophageal stricture. Early diagnosis is important and is usually not difficult. We report a case which outlines the problem with diagnosis of an aluminium foreign body.

CASE REPORT. A 22-year-old man was admitted as an emergency with a history suggestive of a foreign body lodged in the oesophagus. He had been drinking beer from a can. He had finished his second can and his girlfriend had opened the third can for him. He drank a few mouthfuls from this can quickly and then felt something sharp being swallowed. He immediately thought he had drunk the 'ring-pull' opener from the top of the can and when he asked his girlfriend she confirmed that she had put it into the can after opening it. He suffered a sharp retrosternal pain which over the next 30–60 minutes did not get better. When he presented at the accident and emergency department he was still able to swallow, and localised the pain to the mid-sternal level.

On examination he appeared well and not distressed. His pulse was 76/minute and of good volume. Blood pressure 120/70 mmHg. There was no clinical evidence of oesophageal perforation and abdominal examination was normal. Chest and abdominal X-rays failed to show any evidence of a foreign body or of oesophageal perforation. He was further questioned but he felt sure that the ring-pull was still stuck, and he was admitted to hospital with a diagnosis of mucosal tear or oesophagitis. He was commenced on an antacid preparation which produced some symptomatic improvement, and he was allowed oral fluids. He spent a comfortable night in hospital but the following day he was still adamant that there was something stuck in his oesophagus, although he was still able to swallow fluids. A lateral chest X-ray and further inspection of the original films did not reveal any foreign body. Conservative management was maintained in the belief that he simply had a small oesophageal tear.

The following day he still complained that there was something stuck. Because of the slight possibility of an oesophageal leak a swallow using water soluble contrast was ordered. This outlined a foreign body at the mid-oesophageal level consistent

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with a ring-pull. He was taken to theatre where the ring-pull was easily retrieved using the flexible gastroscop and biopsy forceps. He made a rapid recovery and was discharged the following day.

DISCUSSION

The early detection of an impacted oesophageal foreign body is important if the risk of oesophageal perforation is to be minimised.² Initial diagnosis depends upon whether the object is considered to be radio-opaque or not.³ Many people consider that all metals easily show up on an X-ray film and are radio-opaque objects — this case demonstrates that this is not true. As aluminium is a metal of low atomic number, it is less opaque to X-rays than most other metals, which are of higher atomic number. In fact, aluminium has a very similar atomic number to cortical bone.⁴ This proves a problem especially when X-raying the oesophagus, which on a plain chest X-ray lies over the spinal column. It might be thought that a lateral or oblique film would solve the problem, but because a chest X-ray requires a relatively high kilovoltage, and the higher the kilovoltage the less contrast there is between two different materials, this will also often fail to show up the foreign body.

The next step in diagnosis is to obtain a contrast radiograph, or the use of endoscopy.⁵ If perforation is considered to be a possibility then flexible endoscopy with the insufflation of air is not advisable and a water soluble contrast rather than barium should be used.⁶ A metal detector has been used to locate a foreign body which had passed unnoticed even after a water soluble contrast swallow.⁷

This case demonstrates the difficulties in detecting what is potentially quite a common oesophageal foreign body. Providing the limitations of plain X-rays are known the diagnosis should not be difficult. In order to avoid a potentially serious delay, examination by water soluble contrast medium should be performed at the earliest possible opportunity whenever the history suggests foreign body impaction which fails to be revealed by plain X-ray.

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