Using a metal detector to locate a swallowed ring pull

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SUMMARY
A 48-year-old man accidentally swallowed the ring pull from a soft drink can. He complained of pain in his chest. Chest radiographs were normal. A metal detector emitted a strong response when passed across the front of his chest. Oesophagoscopy was carried out and the ring pull was successfully removed. We recommend the wider use of metal detectors by accident and emergency (A&E) department staff particularly when dealing with patients who have ingested metals of low radiodensity.

KEY WORDS: Aluminium, foreign body, metal detector.

INTRODUCTION
Swallowed aluminium ring pulls can lodge in the oesophagus causing chest discomfort. They are not radio-opaque but can be located successfully using a metal detector.

CASE REPORT
A 48-year old man presented to the A&E department complaining of pain in his chest, which was aggravated by talking and swallowing. He said that he had broken off the ring pull from a soft drink can and that it had accidentally dropped into the can. He poured the drink into a glass and a few minutes later noticed that the ring pull was nowhere to be found. He experienced a discomfort in his chest and thought that he had accidently swallowed the ring pull.

He was assessed on arrival by the triage nurse who arranged a chest radiograph. This was normal. He was seen by one of the authors who was aware of the low radiodensity of aluminium. He passed a metal detector across the chest of the patient and a strong response was emitted. Oesophagoscopy was carried out which revealed that the ring pull was lodged in the oesophagus (Fig. 1). It was easily removed without trauma using a coin glass ring forceps and the patient's symptoms disappeared.

DISCUSSION
Aluminium has a low radiodensity. This is not widely known by doctors working in A&E departments. A recent report showed the possible disastrous consequences of missing an ingested ring pull.¹ A patient underwent an oesophagogastrectomy for a presumed oesophageal carcinoma some months after ingesting an aluminium tab. He had previously been seen in two A&E departments where radiographs were taken and seen to be normal. He had been discharged without any intervention. Pathological examination of the oesophagus revealed an oesophageal diverticulum containing an aluminium soft drink ring pull.

Fig. 1. Photograph showing the aluminium ring pull lodged in the oesophagus at endoscopy.
We have previously suggested that a metal detector might be of use in detecting an ingested ring pull. We placed a ring pull on the side of the neck of one of the authors and elicited a positive response on passing a small portable hand held metal detector across the opposite side of the neck. We can now categorically state that a hand held metal detector will detect an aluminium ring pull which is stuck in the oesophagus. Radiographs have no place in the investigation of this complaint. The diagnostic test of choice should be examination by a metal detector followed by a therapeutic endoscopy if a positive result is obtained.

REFERENCES
Using a metal detector to locate a swallowed ring pull.

J Ryan, C A Perez-Avila, A Cherukuri and B Tidey

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