diagnostic of diabetes. Fasting estimations rely on patients' compliance. The formal oral glucose tolerance test has been criticised as "grossly overused in the clinical setting."¹¹ Nevertheless, we recommend that an oral glucose tolerance test be used to confirm or refute a suspected diagnosis of diabetes in patients without symptoms. Diagnostic thresholds depend on whether whole blood or plasma glucose concentrations are being measured.¹⁰

In recent years many practices have compiled registers for several chronic diseases. We suggest that other registers may be similarly flawed, as has been shown for registers of hypertensive patients.¹² Protocols for management of all chronic diseases should include formal criteria for entry to an appropriate register.

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(Accepted 25 January 1994)

Aluminium does not show reliably in radiographs. Clinical suspicion should institute further appropriate investigations

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BMJ 1994;308:1226

Radiographs and aluminium: a pitfall for the unwary

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Ingestion of radio-opaque foreign bodies is common. We highlight the need for a careful radiological examination and endoscopy if symptoms of obstruction persist.

Case report

A 70 year old man presented to the local hospital while on holiday, having accidentally swallowed part of the metallic tab of a soft drinks can. He complained of retrosternal discomfort and pain on swallowing. Plain radiographs of the chest and neck showed no foreign body and he was consequently discharged.

On returning home he consulted his general practitioner, who referred him to another accident and emergency department, where plain radiographs again showed no abnormality. After four months of persistent retrosternal discomfort and progressive dysphagia he was referred for endoscopy, which showed a malignant looking ulcer 22 cm from the incisors. Biopsy showed no evidence of malignancy, and five further endoscopies over the subsequent three months confirmed a progressive, clinically malignant, stricture, although results on biopsy, oesophageal brushing, and needle cytology did not show any malignancy. A barium swallow examination showed the typical shouldered appearance of a malignant stricture (figure), and computed tomography showed a mass consistent with an oesophageal carcinoma. A small linear opacity was noted in the stricture in one image only, but this was thought to be indistinguishable from oral contrast medium.

In view of his progressive dysphagia a three stage oesophagogastratomy was performed. There was a hard thickening in the oesophagus, with a surrounding soft swelling and two adjacent lymph nodes. Subsequent pathological examination of the specimen showed an oesophageal diverticulum containing part of a tab of a soft drinks can. There was no evidence of malignancy.

Radiograph of patient after barium swallow examination showing appearance consistent with oesophageal carcinoma

Discussion

Patients commonly attend accident and emergency departments because they have swallowed a foreign body, but the problems they experience are few as most objects pass through the gastrointestinal tract without incident.¹ Impaction in the oesophagus is, however, serious and may result in perforation and even death if missed. Items of food are the commonest foreign bodies in adults, while shiny objects, such as coins, are commoner in children.¹ Tabs of soft drink cans are unusual foreign bodies, having been reported in children² but not, to our knowledge, in adults.

Oesophageal impaction may be suspected clinically from dysphagia and retrosternal discomfort, and initial management should include inspection of the oropharynx and radiography of the neck and chest if the foreign body is thought to be radio-opaque. A delay in diagnosis may result in an abscess, strictures, perforation, or even death, and our case shows that normal results in a chest radiograph cannot be considered adequate to exclude oesophageal impaction of an aluminium foreign body.^{3,4} Aluminium has a low radiodensity, but this fact was not widely known in a straw poll among our colleagues.

The minimal thickness of steel detectable in vivo is 0.12 mm, and aluminium is 10 times less absorptive. The average thickness of an aluminium ring pull is 0.35 mm, so it is unlikely to be detected in a face on projection. Anteroposterior and lateral projections have therefore been advocated.³ If symptoms persist but no foreign body has been identified endoscopy should be a mandatory part of the investigation.

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(Accepted 30 November 1993)

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