Radiological Features of Unusual Ingested Foreign Bodies

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ABSTRACT

For patients who ingest foreign bodies, pre-operative radiography is an invaluable tool that allows the surgeon to confirm the presence of the foreign body, preempt potential difficulties and plan the best method for foreign body removal. This is particularly important when a foreign body is of usual shape and size. We present a series of radiographs and pictures of some of the retrieved foreign bodies of five patients who swallowed unusual foreign bodies.

Keywords: Radiography, oropharyngeal foreign body, esophageal foreign body

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INTRODUCTION

Whether accidentally or intentionally, almost everyone living on this planet would have swallowed at least one foreign body in his lifetime. Depending on their nature, foreign bodies may either have uneventful gastrointestinal transitions or be impacted in a particular segment of the gut. The type of ingested foreign bodies commonly encountered varies from one society to another, each with their peculiar range of oral intruders determined by a host of cultural factors - psychosocial and dietary being the most important. For example, in our population where fish meat is rarely eaten filleted, fish bones make up 86.3%[1] of all foreign bodies encountered in the upper aerodigestive tract. Elsewhere in the world, however, coins and pins appear to be equally palatable. Clerf[2] in his series of 537 cases of foreign body ingestion showed that 27.4% were bones and 28.7% were coins and pins while Jackson[3] demonstrated in his study that bones and coins/pins form 32.2% and 35.9% of foreign bodies in the upper aerodigestive tract respectively. Apart from patients with bread and-butter foreign bodies, people who swallow unusual foreign bodies, do occasionally present themselves to unsuspecting clinicians. We present a series of radiographs (plain lateral neck X-rays and a barium swallow film) of five patients who swallowed unusual foreign bodies as well as the pictures of some of the retrieved foreign bodies.

Case 1

A 5-year-old Indian boy was brought to the Accident and Emergency Department by his mother after she noticed that he inserted a large plastic item into his mouth. As the child was extremely uncooperative during the ENT examination, a lateral neck X-ray was ordered (Fig. 1). A large toy car door was subsequently removed per-orally with the aid of a McGills forceps.

Case 2

A young Chinese lady presented to the Accident and Emergency Department with severe throat discomfort after swallowing an unknown substance while eating seafood during dinner. ENT examination was unremarkable. The plain lateral X-ray of the neck of her neck is shown in Fig. 2. Rigid esophagoscopy and removal of the embedded pincer of a small crab ware subsequently undertaken without complication.

Case 3

A 2-year-old Chinese girl was brought to the Accident and Emergency by her mother when she complained of severe throat pain after swallowing a safety pin. A plain lateral neck X-ray (Fig. 3) ordered by a general practitioner showed the presence of an atrociously looking opened safety pin. This was promptly removed under direct laryngoscopy.

Case 4

A middle age Chinese man complained of throat discomfort after accidentally swallowing a clamshell during dinner. Apart from pooling of saliva in the oropharynx, no foreign body was identified during indirect laryngoscopy. The plain lateral neck X ray of this man is shown and subsequently underwent rigid esophagoscopy and removal of a large clam shell (Fig. 4).

Case 5

A middle age Chinese gentleman appeared in the Accident and Emergency Department in the early hours of the morning with the complaint of retrosternal discomfort after swallowing some tablets given by his doctor. He had apparently woken up from his sleep to take his medication,

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Fig.1 Plain lateral neck X-ray showing a large foreign body in the naso/oropharynx.

Fig. 2 Plain lateral neck X-ray showing a subtle opacity in the esophagus at C5 level (arrows).

Fig. 3 Plain lateral neck X-ray showing an opened safety pin at C2-C5 level.

Fig. 4 Plain lateral neck X-ray showing an unusually shaped opacity in the esophagus at C6-T1 level caused by a large clam shell.

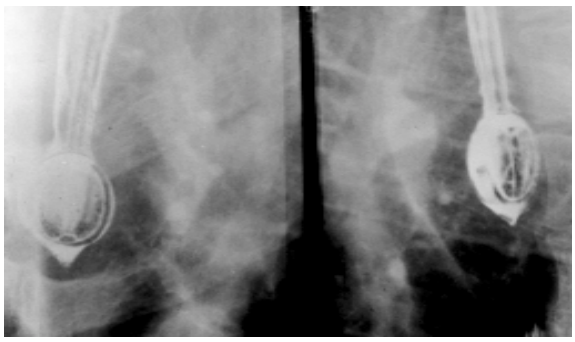

Fig. 5 Barium swallow film demonstrating the presence of a circular opacity in the esophagus at the T3-T4 level - a plastic medicine bottle cap (swallowed together with the medicine tablets).

having forgotten to take it before bed. As his ENT examination, ECG and lateral neck X-ray were unremarkable a barium swallow examination was conducted (Fig. 5). The patient subsequently underwent rigid esophagoscopy and removal of a plastic medicine bottle cap under general anaesthesia.

DISCUSSION

Most foreign bodies that are ingested are impacted in anatomical areas that can easily be visualised in the clinic - the tonsils, base of the tongue, vallecular and, rarely, piriform fossa[1]. Foreign bodies lodged in these regions can thus frequently be removed without great difficulty in the clinic. For symptomatic patients who are clinically unremarkable, however, radiological examination becomes invaluable. The choice of radiological examination is generally determined by the site of symptom - plain lateral neck X-rays for throat discomfort localised above the sternum and barium swallowed for those that are retrosternal in nature. The information obtained from radiography can often confirm the presence or absence of a foreign body and provide vital data about the foreign body with regards to its site, shape and size[4]. This is especially important for symptomatic patients who do not know what they have swallowed (Cases 1, 2 and 5). There is a famous Chinese proverb that says that the key to success in any battle engagement lies in having a thorough knowledge of the enemy's and one's own strengths and weaknesses. To have a clear pre-operative impression of the type of foreign body is half the battle won. For patients with unusual foreign bodies, pre-operative radiological assessment allows the surgeon to plan the best method of foreign body extradition as well as to identify potential pitfalls during foreign body removal. Besides, the estimated dimension of the foreign body can often be deduced from the radiographs. This information is vital as inadvertent breakage of foreign bodies sometimes occurs during removal and a second look may be mandated when the extradited foreign body is smaller than the one expected from radiological examination.

Pre-operative radiological assessment was particularly essential in Cases 1 and 3 where the unusual and precariously lodged foreign bodies could potentially cause significant morbidity if removal was not properly planned and executed. The difficult removal of the unexpectedly large and deeply impacted clamshell in Case 4 was also preempted from pre-operative radiological examination. In this instance, a large lumen rigid esophagoscope was utilised specifically for the removal of this massive foreign body.

Patients who ingested unusual foreign bodies are seen not infrequently in the ENT practice. In such instances, pre-operative radiological assessment provides the surgeon with the necessary information required to make foreign body removal both expedient and complication-free.

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