

Missed Diagnosis

The swallowed foreign body: is it in the nasopharynx?

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Summary: Children with a history of a suspected swallowed radio-opaque foreign body should undergo radiographic examination of the nasopharynx even in the absence of symptoms and signs. Failure to identify and remove an object at this site can result in potentially fatal consequences.

Introduction

Children commonly present having ingested foreign bodies although in the younger ones the history can prove unreliable if the event was not witnessed. The coinage of the realm seems particularly vulnerable to this fate, but fortunately can be detected within the body by a simple plain X-ray examination. This type of foreign body may pass through the length of the gastro-intestinal tract unimpeded especially once the crico-pharyngeal sphincter and upper oesophagus have been traversed, the majority of impacted objects being found at these sites.¹ Problems may arise if impaction does take place leading to the effects of obstruction or pressure necrosis of either the alimentary or respiratory tracts or both. Symptoms and signs that should arouse suspicion of impaction in the regions not immediately visible to the clinician are well described² and commonly include dysphagia, pain, and localized tenderness in the midline cervical region with or without the loss of laryngeal crepitus. Drooling, dyspnoea, stridor, loss of the normal cervical lordosis and dysphonia may also feature. In most cases accurate localization is made radiographically by obtaining simple plain X-ray films of the cervical, chest and abdominal regions. A lateral cervical film should include the upper cervical vertebrae and the nasopharynx but in a distraught child the clinician may well accept a less satisfactory radiograph in which the region has been omitted but nevertheless shows the outline of the oral cavity, lower pharynx, larynx, upper oesophagus and trachea. We present two cases in

which the 'swallowed' object became impacted in the nasopharynx and remained asymptomatic until their detection by radiology of this region.

Case reports

Case 1

A 2 year old boy, with his parents, sought medical attention having been thought to have swallowed a fivepence piece. On this occasion no abnormalities were recorded on examination and the parents were reassured. Seven weeks later he was seen in the ear, nose and throat clinic of Leeds General Infirmary as an emergency having spluttered violently following ingestion of a boiled sweet. He was asymptomatic on attendance and in particular there had been no nasal discharge or bleeding. No abnormalities were found on examination of the anterior nose, mouth, oropharynx, neck or chest but, because of the previous event plain radiographs of these regions including the nasopharynx were obtained. This revealed the presence of the coin embedded between the adenoid tissue and posterior choanae from where it was subsequently removed under general anaesthetic with an endotracheal tube *in situ* (Figures 1a and 1b).

Case 2

A 6 year old boy presented to the accident department of Southmead Hospital, Bristol, the parents having witnessed the ingestion of a fivepence piece some hours before. There followed a bout of coughing and an attempted digital extraction by the

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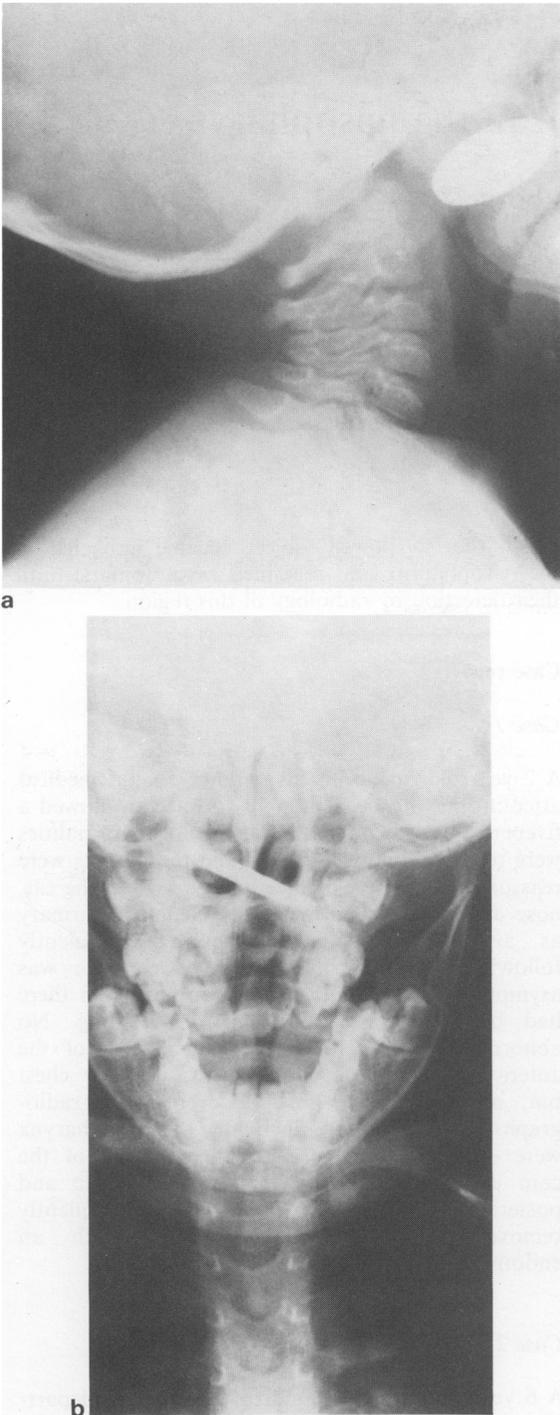


Figure 1 (a and b) Case 1: lateral and postero-anterior radiographs showing coin impacted in the nasopharynx.

father was unsuccessful at retrieving the coin. He was asymptomatic on arrival and clinical examination at this time revealed no abnormalities. Preliminary radiographs failed to identify the object in the oropharynx, hypopharynx, oesophagus or abdominal cavity but the nasopharyngeal region was not included. An ear, nose and throat opinion was sought and the above findings confirmed, although the post nasal space was not visualized. In view of the history, radiology of the nasopharynx was obtained and this clearly demonstrated the foreign body to be impacted in this region (Figure 2). Removal was subsequently performed under general anaesthetic with an endotracheal tube in place.

Discussion

A retained foreign body in the nasopharynx is an uncommon occurrence³ and can give rise to little in the way of symptoms and signs, although the consequences of disimpaction can be disastrous. Laryngeal inlet obstruction or passage through into the trachea can cause death from asphyxia and this may occur particularly during forced inspiration or whilst the patient is asleep. Documented cases include a leech and a toy whistle introduced by

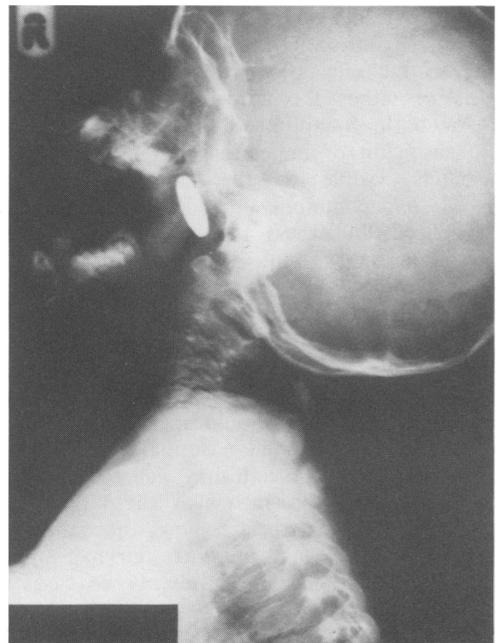


Figure 2 Case 2: lateral radiograph showing coin in the nasopharynx.

swallowing in which the main associated symptom in both was epistaxis. This series of three included a patient with a retained nasopharyngeal bullet following a shotgun wound to the left orbit.⁴ Obstructive sleep apnoea has also been attributed to an impacted piece of cellophane within the nasopharynx of a 2 year old child.⁵ Obstruction of the nasal passages may lead to rhinosinusitis which may be recurrent and is often manifest by a purulent nasal discharge. Unilateral symptoms and signs in a child suggest an object impacted in the nasal fossa usually introduced through the ipsilateral nostril.

It is clear from case 1 that a non-organic foreign body can remain in the nasopharynx for many weeks especially when there are no symptoms and this represents the longest recorded case to date of a retained coin at this site. It is possible that it was propelled upwards from either the laryngeal inlet or hypopharynx by an expiratory thrust or muscular action with the soft palate relaxed shortly after the time of its introduction. Case 2 demonstrates that, particularly if the event was witnessed, every effort

should be made to ascertain the precise whereabouts of the object and we suspect that the ensuing digital manipulation may have contributed to the coin's final resting place! Radiology is crucial in locating such radio-opaque objects and it is vital to remember that impaction may take place upwards in the nasopharynx as well as the more frequent occurrence in the lower pharynx and upper oesophagus. Omitting this region from the X-ray field by accepting a technically unsatisfactory radiograph, or omitting it altogether may result in a missed diagnosis with potentially fatal consequences.

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