Case Report

An Asymptomatic Pointed Foreign Body in the Hypopharynx - A Rare Case Report

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ABSTRACT

Introduction

Foreign body ingestion is an ENT emergency frequently encountered in both children and adults.

Case Report

A case of an open safety pin in the hypopharynx in a fifteen year old boy is reported, which remained impacted there for the past 15 days without any significant symptom or complication. CT scan, performed before surgical intervention, did not show any migration of this foreign body from its intraluminal site. This was removed by 'Magill forceps technique'. Postoperative period was uneventful.

Conclusion

Pointed foreign body may present with negligible symptoms and that too may stay in the cricopharynx for long without migration. Magill forceps technique can be a good surgical option in such cases.

Keywords:

Foreign Bodies/surgery; Hypopharynx; Pyriform Sinus; Magill Forceps Technique

Foreign bodies in hypopharynx and oesophagus are more common in children compared to adults. Generally foreign bodies are ingested accidentally. Most common foreign bodies in children are coins, but marbles, buttons, batteries, safety pins and bottle tops are also reported.[1-3] Regional and cultural factors also take part to dictate the frequency with which different objects are ingested. Radiological localization is mandatory for decision making regarding removal. Smooth foreign bodies do not pose much threat but sharp or pointed foreign bodies if not retrieved at the earliest may penetrate oesophageal wall and cause complications. Foreign bodies, which have gone beyond the oesophagus, usually pass uneventfully through gastrointestinal tract in 70-80% cases. But if a foreign body is lodged in the esophagus it can give rise to many problems of which drooling and dysphagia are the two most common features. Complications including respiratory obstruction may occur with large foreign body. Retropharyngeal abscess formation may occur as late presentation especially in sharp objects like safety pin, bone piece, fish bone leading to severe throat pain, fever, drooling of saliva or dysphagia and odynophagia. We present a case of open safety pin lodged in the hypopharynx with open end facing downward and presented after fifteen days of accidental ingestion. The only complaint was of mild pain during swallowing. There was no feature suggestive of acute retropharyngeal abscess. This type of case with almost asymptomatic presentation has rarely been reported in literature.

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Case Report

A fifteen year boy attended ENT OPD of a tertiary medical college hospital in Kolkata with complaints of throat pain for preceding ten days. Patient gave a vague history that a safety pin may have been eaten accidentally with rice and one soft tissue X-ray neck done from outside before reaching this hospital showing shadow of a safety-pin further raised his anxiety and prompted the patient to attend our institution for removal of the same. Pain was absent at rest but during swallowing there was mild throat pain, but despite that, he was eating and

drinking normally. There was no fever or vomiting, dysphagia, odynophagia or regurgitation after intake of food. Patient had no previous history of ingestion of corrosive, radiation exposure, tuberculosis, any psychiatric illness or any head and neck surgery. Patient could drink water normally in front of the examiner. There was no earlier attempt of removal of the foreign body by anyone before reaching this institution.

On neck examination, there was no swelling with normal surface temperature. On left side of lower neck there was mild tenderness. When he was asked to drink water there was no pain. No cervical lymph node was enlarged. Oral cavity and posterior pharyngeal wall on examination were normal. Indirect laryngoscopy examination was within normal limits. Detailed ear and nose examination were found to be normal. Other systemic examinations were within normal limits. The patient was immediately admitted as the case was an ENT emergency and all routine investigations were done. Complete haemogram, serum urea and creatinine, fasting and postprandial plasma glucose level, chest X-ray and resting electrocardiogram were all within normal limits. He was kept nil per mouth since admission. Intravenous fluid in the form of Ringer's lactate solution, broad spectrum antibiotic in the form of injection co-amoxiclav 1.2 gm. intravenously twice a day, analgesics as and when necessary and long acting systemic steroid in the form of injection dexamethasone was started thrice a day.

X-ray soft tissue neck on anteroposterior and lateral views revealed a safety pin at the level of C6-C7 with open end pointed below.(Fig.1)

But there was no widening of the prevertebal soft tissue shadow. Contrast enhanced computed tomography (CT) scan of neck was done on the next day also showed the same findings and there was no migration of this sharp foreign body till then. (Fig.2A) Operative intervention had to be planned subsequently. 3D reconstructed CT images exactly pinpointed the size, shape and location of the safety pin. (Fig.2B)

After obtaining anaesthetic fitness, patient was put under inhalation anaesthesia and laryngoscopy performed with the help of anaesthetic Macintosh laryngoscope and posterior end of the safety pin was located in the left pyriform sinus in inverted manner. The proximal end of the safety pin was grabbed with Magill forceps and safely extracted. The safety pin was 3.5 cm in length with its pointed end open below. (Fig.3)

The patient did not complain of pain in the neck, shoulder or chest in the post-operative period. Check X-ray of neck was performed on the very next morning and was found to be normal. The patient was discharged after 24 hours. On postoperative visit after 7 days he was doing well and without any complaint.

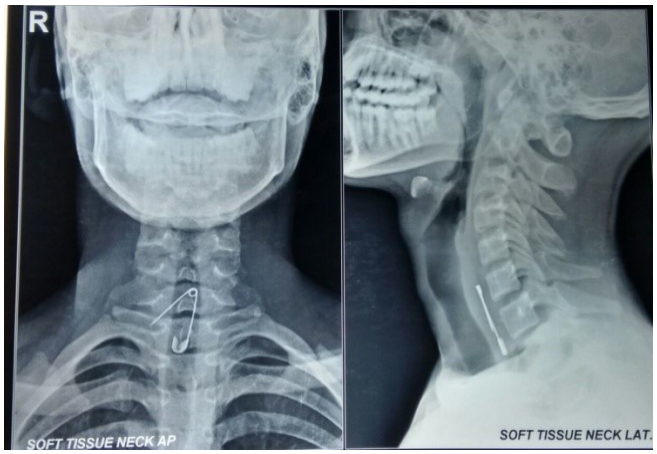

Fig.1. Soft tissue X-ray neck (AP and lateral views) showing open safety pin at the level of C6-C7

Discussion

Ingested foreign bodies in children represent a major global health problem.[4] Coins, toys and food particles are the principal dangerous things commonly ingested. Coin shaped foreign bodies like watch batteries, when impacted, can cause caustic alkaline injury with possible perforation.[5] The main risks are to children under 3 years of age. As in this age group 2nd molars are not yet developed and their grinding and swallowing mechanisms are poor with immature glottic closure.[6] Adults have a wider variety of foreign bodies with food bolus being the most common. Artificial dentures of more than 1.75 inches (4.4cm) long are especially dangerous.[7] Rarely foreign bodies, which are not large enough, may get impacted in oesophagus in cases of strictures and due to smooth muscle spasm.[8] In our case, the safety pin was stuck in the cricopharynx, more so as

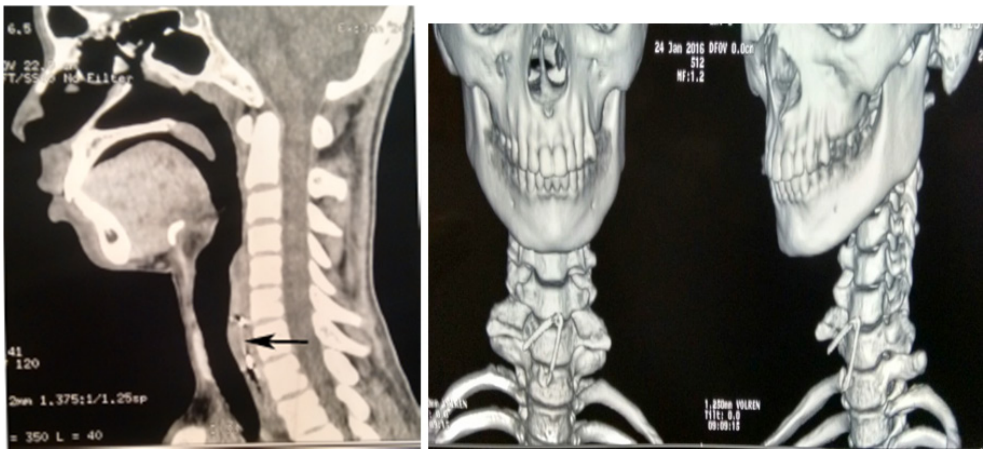

Fig.2. (A) CT scan on sagittal plane showing the safety pin (black arrow) on left hand side. (B) Reconstructed 3D images from CT scans on right hand side showing exact position and orientation of the safety pin.

it was open, and surprisingly never migrated probably due to same reason.

Dysphagia and tenderness are the most common clinical features.[9] Majority (89%) of patients attend hospital within 24 hours of ingestion. X-ray of the neck (lateral view) is the most useful investigation with presence of air in the oesophagus being a significant finding.[10] Foreign bodies in hypopharynx and cervical oesophagus such as chicken and fish bones usually need radiological workup. However some foreign bodies such as pieces of plastic and wood are only faintly radiopaque and their detection may require a CT scan. Indirect signs visible on plain radiographs are soft tissue swelling and/or air due to edema or haematoma.

Fig.3. Safety pin after removal (3.5 cm.long).

A vast majority of the swallowed objects pass through digestive tract and pass out with stool, frequently undetected.[11] A small proportion may impact in pharynx and oesophagus. Complications like dysphagia, vomiting, and respiratory distress due to tracheal compression may occur. The patient may develop retropharyngeal abscess presenting with drooling of saliva, severe throat pain, dysphagia, tenderness over the neck. Sharp objects like fish bone, safety pin, and chicken bone may cause perforation manifesting as pneumomediastinum. In our case interestingly there was neither abscess nor perforation of oesophagus as evident from scans though pointed nature of open safety pin and it was seated there for long. Although rare, perforating objects are potentially life threatening because they may provoke formation of a fistula between the oesophagus and the innominate artery thus ensuing catastrophic bleeding.[12]

We listed cases of different sharp oesophageal foreign bodies in literature with various presentations. Sharma et al in their study showed two cases of sharp foreign bodies, one was a sharp metallic folded tin cover and another was a sharp metallic bottle cap both presented with pain and dysphagia.[13] Wadhera et al, in their study, presented a case of accidental ingestion of razor blade in a 6 year old child who came to emergency after 5-6 hours with complaint of throat pain.[14] Shivkumar et al presented a case of safety pin in oesophagus with complication of retropharyngeal abscess.[15] Singhal et

al in their case study showed a Neem stick (Datun) in a 56 year old man with complaints of difficulty and pain during swallowing, drooling of saliva and pain in the chest.[16] Rohila et al in their presentation described a case of an eight month old child presented to their department with history of ingestion of sharp foreign body. Patient was restless and unable to eat and drink after ingestion of the foreign body. Soft tissue neck (Antero posterior and lateral views) and chest radiograph revealed an angulated radiopaque foreign body in front of the prevertebral space at level of C4-T1.[17] Presentation of our case was neither acute (and the incident of ingestion of the foreign body was almost forgotten) nor the patient had any problem with drinking and eating.

Pelluchi et al reported a case of a 40 year old female who had been referred to the emergency department complaining of dysphagia and odynophagia, which had begun several hours earlier after a fish meal. Anteroposterior and lateral chest X-rays revealed the presence of a radiopaque ingested foreign body (4.5 x 1.5 cm) located in the upper cervical oesophagus. An immediate gastroenterological evaluation performed with flexible endoscopy under sedation confirmed a bone-like FB just below the superior oesophageal sphincter.[18]

Shinde et al reported a case of an unusual foreign body i.e. thorn of babul tree in oesophagus presented with perioesophagitis with dysphagia.[19] Agbomhekhel et al in their publication described a case of 28 year old male who presented in the accident and emergency department of a hospital with a five hour history of ingestion of fish hook and line impaction in the esophagus. There was an associated history of dysphagia, odynophagia and drooling of saliva. X-ray soft tissue neck done showed a radiopaque foreign body in the oesophagus at the level of the 6th cervical vertebra.[20] Unlike our case neither of these two cases of pointed foreign body mentioned above, presented after so many days and also without any apparent symptom or retropharyngeal abscess formation. There was no complaint of dysphagia, vomiting, respiratory distress or fever in our patient. Both X-ray soft tissue neck (lateral view) and CT scan neck did not reveal enlarged prevertebral shadow.

In long standing radiopaque foreign bodies in aerodigestive tract, especially for the sharper ones, CT scan is the best imaging modality before any surgical intervention can be planned to know its migration. Chang et al in their study reported two cases of oesophageal foreign bodies and in both the cases, 3D reconstructed images were compared with the FB that were removed according to the object shape, size, location, and orientation in the esophagus. Their results not only indicate the usefulness of conversion of CT data to 3D images to help in diagnosis and treatment, but also use of 3D images prior to treatment allows for rapid prototyping and surgery simulation.[21] In our case we could also exactly match size and location, as these were on 3D images with real safety pin.

Several articles in literature point out the use of Magill forceps to retrieve foreign bodies like coins, marbles, rings and safety pins from hypopharynx. This is known as 'Magill forceps technique'(MFT) and noted as one of the extra-anaesthesia uses of Magill forceps.[22] Singh et al studied 100 consecutive paediatric patients of impacted coin at upper end of the oesophagus where they used MFT under inhalational anaesthesia using Macintosh laryngoscope and concluded that this technique was at par with rigid endoscopy in terms of efficacy, safety and complication rate with reduced hospital stay and cost of treatment. Statistically they showed it to be more applicable in younger age group (0-6 years).[22]

In our case we found no difficulty in using it in an adult patient. Takrouri et al reported an interesting case of a pin-ended earring got stuck in the hypopharynx of a child where they used MFT to remove it under general anaesthesia uneventfully but a small mucosal tear occurred at the pin entry site and chest complications subsequently.[23] We did not face any such complication postoperatively using MFT in our case. Ramadass et al described a case of intraluminal migrating foreign body (open safety pin) in the oesophagus and concluded that pointed ends of a foreign body are likely to get impacted submucosally or intramurally due to inadvertent attempts at removal by the patient or inexperienced surgeon and this foreign bodies can be removed without any difficulty by the ingenuity of the attending surgeon.[24] In our case, no earlier attempt was made to remove it before the patient reached us nor the safety pin migrated from the lumen of the pharynx even after fifteen days of ingestion as was evident on the scans. It came out easily

with the help of Magill forceps as it did not penetrate the wall of the pyriform sinus.

Conclusion

Foreign bodies, more so pointed and sharp ones, lodged in aerodigestive tract are always considered to be treacherous things. A pointed foreign body may even present with minimum or negligible symptoms. It may get impacted in the cricopharyngeal sphincter and may stay there for long without migration. A strong sense of suspicion and timely investigations including a CT scan is essential before surgical intervention in case of a long standing foreign body to pinpoint its exact size, shape and location.3D reconstructed CT images often help in these cases. Magill forceps technique is useful in cases where foreign body is seen to be lodged in the pyriform sinus. The role of tone and tightness of the sphincter to hold a pointed foreign body for long in the upper oesophagus needs to be evaluated further in future research.

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