

CASE REPORT

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# Neglected foreign body in esophagus treated as chest infection: a case report

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## Abstract

**Background** Esophageal foreign body impaction is one of the common reasons of referral to Ear Nose Throat clinic. It is a medical emergency requiring urgent evaluation and treatment. Esophageal foreign body in a very young child can be a diagnostic challenge.

**Case presentation** In this case, we report an unusual sharp foreign body in the upper aerodigestive tract of a 20-month-old female child. It was neglected and misdiagnosed in the initial phase and was treated as a case of upper respiratory tract infection. Chest X-ray done was suggestive of a radiopaque irregular sharp foreign body at the level of the 6<sup>th</sup> cervical vertebra. The patient underwent rigid esophagoscopy on an urgent basis, and the foreign body was removed without any complication.

**Conclusion** Esophageal foreign body in a very young child can mimic upper respiratory tract infection due to atypical symptoms. Strong witness history along with X-rays of the neck, chest, and abdomen help in making the immediate diagnosis. Clinicians should always advise parents for supervision of their children during play.

**Keywords** Esophageal, Foreign body, Neglected, Sharp, Case report

## Background

Children with esophageal foreign body are the most frequent cause of emergency hospital visits. Most commonly, esophageal foreign body in children is seen in the age group 6 months to 5 years that can lead to significant mortality [1]. In children, foreign bodies are mostly ingested accidentally due to the fact of taking everything into their mouth while playing. The type of foreign body ingested depends upon various factors like the age of the patient and the socioeconomic characteristics. The most common esophageal foreign bodies seen in children include coins, safety pins, toy parts, and small batteries

[2]. Sharp foreign bodies and button batteries can lead to further complications like esophageal perforation and chemical burns. In most of the cases, esophageal foreign bodies are more commonly impacted in the upper part of the esophagus at the level of the cricopharynx. The patient can present with various symptoms like throat pain, vomiting, food regurgitation, hypersalivation, decrease oral intake, difficulty breathing, foreign body sensation, and hematemesis. A strong history of foreign body ingestion with radiological investigation comprising of X-rays of antero-posterior and lateral soft tissue of the neck, chest, and abdomen is essential for rapid diagnosis. We hereby report an unusual case of a neglected sharp metallic foreign body ingested by a 20-month-old female child.

## Case presentation

A 20-month-old female child was referred to the ENT emergency department with the diagnosis of a foreign body esophagus. The chief complaints of the patient as told by her parents were decreased oral intake and

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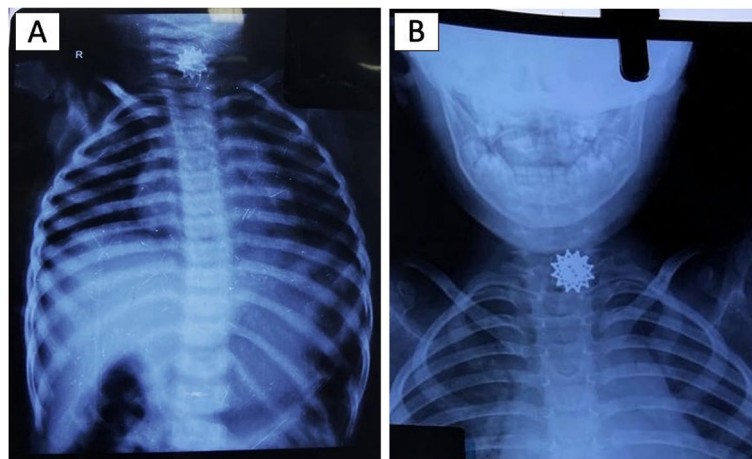
persistent cough since the last 4 days. The child belonged to a lower class family. Earlier she got treated by various practitioners for chest complaints but due to the non-resolution of symptoms and increased severity of cough, a radiological investigation was done to rule out respiratory tract infection. Chest X-ray done was suggestive of a radiopaque shadow with irregular borders at the level of the cricopharynx opposite the 4<sup>th</sup> to 6<sup>th</sup> cervical vertebra (Fig. 1A). The child was then referred to our department for further management. There was no definitive history of foreign body ingestion during the presentation, but upon cross-questioning with the parents, her mother revealed the history of her missing ornament from its place.

At the time of the presentation, the child was irritable and crying. No signs of any respiratory distress or stridor was present. Child was afebrile with oxygen saturation levels of 99% on room air. A repeat chest X-ray of the neck (Fig. 1B) was done to confirm the diagnosis and the foreign body was found to be present at the level of cricopharynx. Child was admitted and started on intravenous antibiotics to prevent any further complications and intravenous fluids were given to prevent dehydration. Her parents were advised to restrict the oral feeds. All routine blood investigations were sent and the child was prepared for an emergency esophagoscopy for foreign body removal under general anesthesia. A rigid esophagoscope no. 3 was used to visualize the foreign body. The foreign body was removed using an esophagoscopy forceps by grasping its edge carefully so that injury to the esophageal mucosa could be prevented. Intraoperatively, a star-shaped earring measuring approx. 2 cm × 2 cm (Fig. 2) was found that was not embedded into the esophageal



**Fig. 2** The earring diameter — 2 cm × 2 cm

mucosa. Check esophagoscopy was done that showed no injury to the walls of the esophagus, after successfully removing the foreign body. A post-operative chest X-ray was also done that showed no signs of any esophageal perforation. The child was kept under observation for 3 days and later discharged on oral antibiotics. A follow-up was done after 1 week that showed improvement in the cough with normal oral intake. Parents of the child were counseled to supervise their child while playing.



**Fig. 1** **A** Chest X-ray antero-posterior view showing the foreign body in the upper part of the esophagus. **B** Enlarged view of foreign body

## Discussion

The esophageal foreign body ingestion is far more common in children due to the curiosity of exploring things around them. The most common age group includes children under 5 years of age. The site of impaction of the foreign body can be variable depending upon the size of the foreign body ingested and the age of the patient. In children, the most common site of foreign body impaction is the upper part of the esophagus (70%), other sites be the mid esophagus where it is crossed by the aortic arch (15%) and at the lower esophageal sphincter (15%) [3]. In our case the foreign body was impacted in the upper part of the esophagus. Symptoms of foreign body ingestion depend upon the size of the foreign body, the site of impaction, and the nature of the foreign body. Small, rounded foreign bodies like a coin can remain asymptomatic in a very young child unless witnessed as their diet is mainly composed of fluids that can easily bypass the obstruction site. Many of the young children can remain asymptomatic without any complaints of dysphagia [4, 5]. However, other symptoms like cough and decreased oral intake may mimic the diagnosis of other conditions like upper or lower respiratory tract infection as in our case. One such case of an esophageal foreign body mimicking the upper respiratory tract infection was reported by Ravikumar A, et al. in a 15 month old baby. The foreign body in that case was a button battery. One of the chief complaints in that case was cough and refusal to feed, which was similar to the one presented to us [3]. A strong witness history with radiological investigation comprising of X-rays of the neck and chest with the whole abdomen is crucial in confirming the diagnosis of foreign body esophagus. In an unattended child, especially in a very young age, with no active history, diagnosis of foreign body esophagus should always be kept in mind of a treating doctor.

Most of the foreign bodies in majority of cases pass uneventfully through the gastrointestinal tract, but impaction of foreign body can occur anywhere along the entire length of the esophagus and the most common location (75%) is the 1<sup>st</sup> esophageal constriction at the level of cricopharyngeus muscle [6]. Impacted foreign bodies need urgent intervention. Observation is not a management option in patients with sharp foreign body ingestion. Sharp foreign bodies are more dangerous in view of high risk of esophageal mucosal damage, bleeding, perforations, abscess formation, and even fistula formation in rare cases. The foreign body in our case was a sharp star-shaped earring impacted for more than 4 days that had the risk of damaging the esophageal lumen. We immediately prepared the patient for rigid esophagoscopy under general anesthesia. A

star-shaped earring was removed uneventfully from the upper part of the esophagus without damaging the esophageal mucosa.

Esophagoscopy is the mainstay of treatment for the removal of impacted esophageal foreign body. One of the complications associated with this technique is esophageal perforation which can occur in 0.2% to 2% of the total cases [7]. Hence, skillful maneuvering of the rigid esophagoscope while removing a sharp foreign body is most important to prevent any complications.

## Conclusion

Diagnosis of an esophageal foreign body in a very young child is difficult due to atypical clinical symptoms. Foreign body ingestion is more common in young children left unattended. Although most esophageal foreign bodies pass through the gastrointestinal tract but impacted sharp foreign bodies need urgent intervention. In cases with no witness history, children with upper respiratory tract infections not responding to the medical management should be considered as highly suspicious for foreign body esophagus. Esophagoscopy is considered a treatment of choice for sharp impacted foreign bodies.

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## Study involving animals participation

Not applicable.

## Authors' contributions

Preparation of the original draft, considerable contribution to study design, data gathering and analysis, conceptualization, data curation, and formal analysis were done by PK. Considerable contribution to study design, data gathering and analysis, and interpretation of data were done by MS. Project administration, considerable contribution to study design, and data gathering were done by BK. All authors read and approved the final manuscript.

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## Availability of data and materials

All the data regarding the patient for this case report are available from the corresponding authors, on reasonable request.

## Declarations

### Ethics approval and consent to participate

Approval from the ethical committee was taken from Pandit Bhagwat Dayal Sharma Ethical College Committee and an informed and written consent was taken from the patient's parents to voluntarily participate in the case study.

### Consent for publication

The written consent has been obtained from the child's parents that the information will be shared and utilised for the educational purpose only.

### Competing interests

The authors have no conflict of interest to declare.

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