International Journal of Pediatrics and Adolescent Medicine (2016) 3, 34—37

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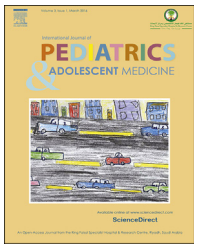

INSTRUCTIVE CASE

Intramural esophageal foreign body in a child

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Received 18 August 2015; received in revised form 13 November 2015; accepted 19 November 2015
Available online 24 December 2015

KEYWORDS
Esophageal foreign body;
Intramural;
Esophagoscopy;
Thoracoscopy

Abstract Foreign body ingestion is a common problem in the pediatric population. The majority of cases occur between 6 months and 3 years of age. Major complications, including bowel perforation and obstruction, have been reported. Forty percent of ingested foreign bodies are unwitnessed, and in fact, many are asymptomatic. We report the case of a 2-year-old girl who was referred to King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia (KFSH&RC) with suspected congenital esophageal stenosis. Upon investigation, she was diagnosed with intramural esophageal foreign body.

1. Introduction

Foreign body ingestion is a common case encountered in pediatric. Most of these cases result in no harm, a few cases have significant complications and rare cases remain unnoticed for some time.

Our case represents one of the unusual missed cases and was even labeled as congenital esophageal stenosis, an uncommon disease, after radiological and endoscopic studies.

2. Case presentation

A 2-year-old girl was referred to our center for further management of suspected congenital esophageal stenosis. Upon presentation, the patient was unable to tolerate a solid or pureed diet. She was vomiting and was having feed refusal in the last 6 months. She also had poor weight gain. No specific history of a preceding or predisposing event was

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Peer review under responsibility of King Faisal Specialist Hospital & Research Centre (General Organization), Saudi Arabia.

http://dx.doi.org/10.1016/j.ijpam.2015.11.004

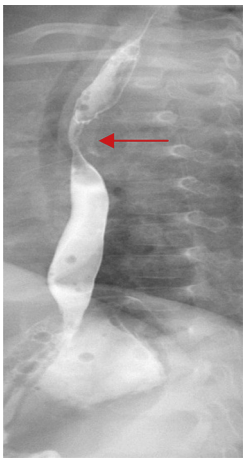

Figure 1 Barium swallow showing the esophageal stenosis in the mid-esophagus.

given by the family. The barium swallow study and esophagoscopy from the referring hospital indicated a severely stenotic area at the mid-esophagus.

A repeat barium swallow at our hospital showed a 1 cm long and 2—3 mm in diameter upper thoracic esophageal stenosis with proximal dilatation (Fig. 1). Esophagoscopy with dilatation, using a Savary-Gilliard dilator up to size 13, was performed. A month later, a second session of dilatation up to size 15 was performed. Following the second dilatation session, the patient's status improved and she became asymptomatic. She was able to tolerate both liquid and solid food.

During the second esophageal dilatation, a hardening on the esophageal wall was noticed, so a chest CT was arranged to evaluate for the presence of a cartilaginous ring. However, the CT showed a focal inflammatory process in the upper thoracic esophagus surrounding an impacted esophageal wall tongue-like foreign body, most likely an aluminum can cover (Figs. 2—4).

The patient was admitted urgently. Repeat esophagoscopy showed a bulge in the esophageal wall with a slit-like area. However, the esophageal mucosa was grossly normal. No foreign body was identified. An exploratory

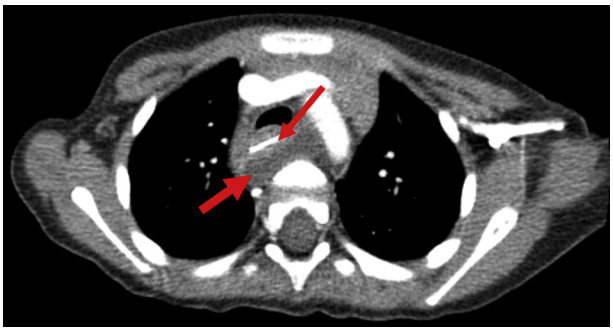

Figure 3 Axial CT scan with IV contrast showing the foreign body as a linear hyperdensity (narrow arrow) with a low attenuation posterior to it representing a posterior wall esophageal abscess (wide arrow).

thoracoscopy was performed. It revealed a cystic dilatation on the wall of the esophagus, which was accidentally incised and drained pus. The foreign body was identified and retrieved from the muscular layer of the esophagus (Figs. 5—7). The site of the esophageal break was repaired with primary sutures. Irrigation with normal saline was performed, and a chest tube was left in place. A specimen from the cystic wall was sent to the pathology lab and revealed submucosal fibrosis and unremarkable squamous epithelium. A culture was not performed.

The child was kept nil per mouth for five days, during which peripheral total parenteral nutrition was started.

Subsequently, a follow-up barium swallow was performed and showed interval improvement of the mid-esophagus narrowing with no leak (Fig. 8). The child was started on a liquid diet, which progressed to a normal-for-age diet, which she tolerated well with no complications. The chest tube was removed. She was discharged on post-operative day 6.

Retrospectively, a history of an episode of choking and vomiting along with the inability to tolerate oral liquids at the age of 13 months was identified. Initial investigation and management at that time revealed a whole bean,

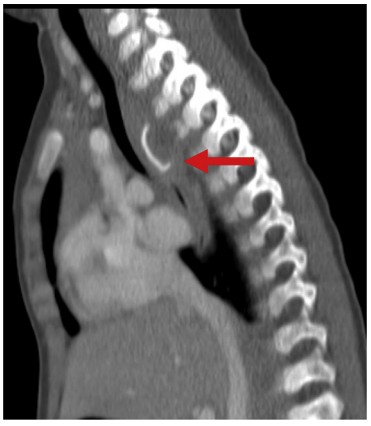

Figure 2 CT scan sagittal view showing the metallic foreign body as a curved hyperdensity posterior to the trachea (arrow).

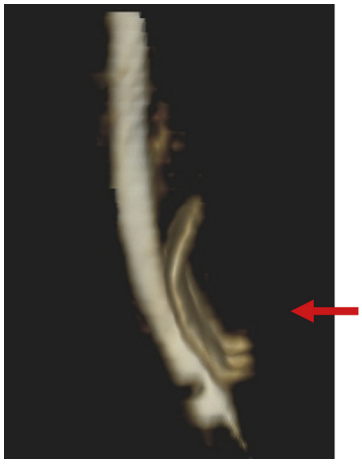

Figure 4 3D reconstruction showing the tongue like metallic foreign body (arrow) anterior to the inserted nasogastric tube

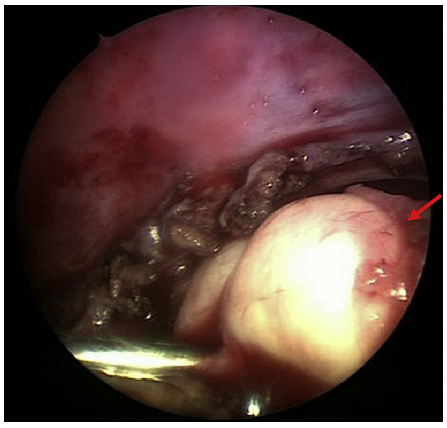

Figure 5 Thoracoscopy showing a yellowish esophageal cystic lesion, representing the abscess (arrow).

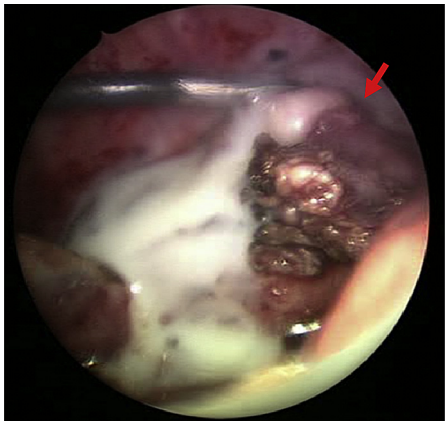

Figure 6 Pus draining from the abscess (arrow).

which was coughed up by the patient and assumed to be the causative agent.

Following this incident, the patient tolerated only a liquid diet. Her mother overlooked this incident and did not recall it in subsequent clinic visits. Two months after discharge, she presented to the clinic for regular follow-up.

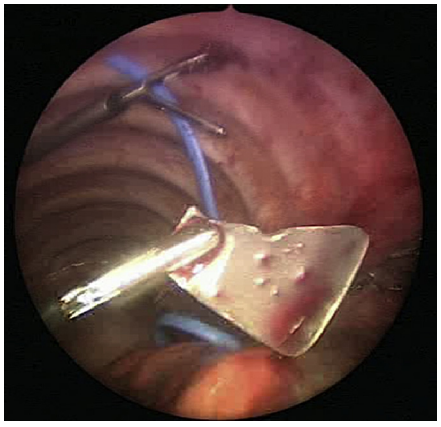

Figure 7 An aluminum can cover is retrieved from the esophageal muscular layers.

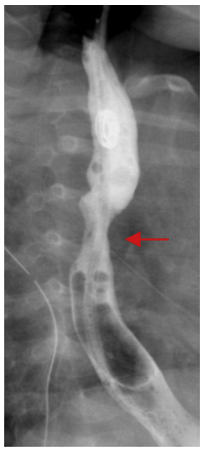

Figure 8 Barium swallow after removal of the foreign body showing significant improvement in the stenosis.

There were no complaints. She was tolerating all types of food and had gained 1 kg from the time of admission.

3. Discussion

Infants are at a greater risk of ingesting foreign bodies due to their orolingual curiosity. It is most common between the ages of 6 months and 3 years [1,2]. A positive history of ingestion is not always present [2]. Therefore, diagnosing a pediatric patient with an esophageal foreign body can be difficult, not to mention intramural foreign bodies [1]. Fifty percent of cases have an atypical presentation or are asymptomatic [2].

Foreign bodies retained for more than 24 h are associated with a 14.1 times greater risk of complications [1]. Examples include esophageal perforation, mediastinitis, and esophago-aortic fistula [1]. Miller et al described chronic esophageal foreign bodies (CEFBs) defined as those retained for at least 1 week. Of 522 children, 8% qualified as having a CEFB. He found that respiratory symptoms were the primary complaint in 76% of cases and gastrointestinal symptoms in 22% of cases. However, dysphagia or odynophagia was the main secondary symptom, present in 47% of cases [3].

Miller et al introduced the concept of technical esophageal perforation, in which "A foreign body that had been walled off in either mucosal or muscular layer of the esophagus" is one of the criteria, similar to our case. Seventeen percent of all esophageal perforation patients in his study had the above mentioned criterion [3].

Upon reviewing the literature, we found 2 similar cases. The first was reported in 1982 from Hospital for Sick Children, London. They described an 18-month-old boy with a history of long-standing dysphagia. The plain chest X-ray was unremarkable, and the barium swallow showed a narrowing of the esophagus. The provisional diagnosis was a foregut duplication cyst. His esophagoscopy showed no visualized foreign body. During a thoracotomy, a metal cap top was retrieved [4]. The second case was that of a 6-month-old boy who had a chest X-ray for evaluation of cough and was found to have a foreign body. A chest CT revealed an intramural foreign body, similar to our patient.

A repeated esophagoscopy of the boy identified a barely visible tail of a coil. It was removed endoscopically [1].

Interestingly, our patient was asymptomatic after 2 sessions of esophageal dilatation, which misleadingly favored the diagnosis of congenital esophageal stenosis. We could not find any reported cases in the literature of asymptomatic patients following the treatment/intervention of their presumed initial diagnosis.

4. Conclusion

Intramural foreign bodies are possible serious conditions that might be masked by unusual symptoms. There should be a high index of suspicion for this possibility for all pediatric patients who present with long-standing and unexplained dysphagia.

Conflict of interest

No conflict of interest

References

[1] Mathur N, Kumar S, Bothra R. Intramural foreign body in esophagus. Int J Pediatr Otorhinolaryngol 2004;68:837—9.
[2] Ahn D, Heo SJ, Park JH, Sohn JH. Tracheoesophageal fistula with tracheal stenosis resulting from retained esophageal foreign body. Auris Nasus Larynx J 2011;38:753—6.
[3] Miller R, Willging P, Rutter M, Rookkapan K. Chronic esophageal foreign bodies in pediatric patients: a retrospective review. Int J Pediatr Otorhinolaryngol 2004;68:265—72.
[4] Spitz L, Hirsig J. Prolonged foreign body impaction in the esophagus. Arch Dis Child 1982;57(7):551—3.