CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 36 (2017) 179–181

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Delayed diagnosis of esophageal foreign body: A case report

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ARTICLE INFO

Article history:
Received 10 April 2017
Received in revised form 16 May 2017
Accepted 19 May 2017
Available online 29 May 2017

Keywords:
Esophagus
Foreign body
Endoscopy
Case report

ABSTRACT

INTRODUCTION: Foreign body (FB) ingestion, a common and serious problem in children, can present with a wide variety of symptoms. This paper describes and discusses the case of an esophageal foreign body (EFB), in which the patient presented with primarily respiratory clinical signs causing delayed diagnosis.
PRESENTATION OF CASE: A six month old boy presented with three months history of harsh cough, stridor and pulmonary congestion. He was repeatedly treated with steroids and antibiotics. His symptoms worsened progressively. On examination, he was tachypneic with suprasternal recession, scattered crepitations, diffuse wheeze and a continuous stridor. Chest X-ray was normal. The flexible bronchoscopy showed a posterior external compression on the middle wall of the trachea. The CT scan was normal. The contrast X-ray study of the esophagus revealed an endoluminal filling defect. The esophagoscopy revealed narrowing at 12 cm of dental arch, and a bourgeoning yellow mass easily bleeding on contact. Esophageal biopsies were obtained, and histology was inconclusive. A surgical exploration was planned, but the infant forced out a pistachio shell after a chest physiotherapy session.
DISCUSSION: Ingestion of FB by small children is a common problem. The majority of EFBs pass harmlessly through the gastrointestinal tract; however, some EFBs can cause significant morbidities. The diagnosis may be delayed leading to several complications especially if the ingestion of the FB is unwitnessed and when the clinician does not think of FB ingestion as part of the differential diagnosis of chronic respiratory signs.
CONCLUSION: This case highlights, the importance of recognizing, the rare and often forgotten respiratory symptoms of EFB body to avoid diagnostic delay especially in unwitnessed FB ingestion.

1. Intrduction

The natural inclination of children to explore their environment orally makes the ingestion of FBs common, especially in those less than six years old. Upper respiratory tract infections and stridor secondary to esophageal foreign body ingestion is an unusual occurrence. The diagnosis can be missed or delayed when the presenting symptoms are mainly respiratory. This work has been reported in line with the SCARE criteria [1]

2. Presentation of case

A 6-month-old boy was referred to the hospital with dyspnea and stridor. He had a three months history of stridor, harsh cough and pulmonary congestion. There was no history of choking episodes or ingestion of foreign body witnessed by the parents and he had never experienced dysphagia. He was treated on multiple occasions with corticosteroid and antibiotics. However stridor and cough got progressively worse. During the last 48 h before admission, he had repeated attacks of cough and breathlessness without history of dysphagia or drooling. On examination, he was eutrophic. He had a temperature of 38.5 °C and oxygen saturations of 95% in air. Respiratory rate was of 50/mn with marked suprasternal recession, scattered crepitations, diffuse wheeze and a continuous stridor. Cardiovascular examination was normal. Blood tests showed a normal complete blood count and a C-reactive protein of 20 mg/l. Chest- X-ray was normal. The child was managed with intravenous cefotaxim 100 mg/kg/day, nebulised adrenaline, supplementary oxygen and chest physiotherapy. The improvement was slow and partial. The flexible bronchoscopy revealed a narrowing of the trachea about 30%, due to an external compression. Cervical and thoracic CT seeking bronchopulmonary malformations or lymphadenopathy was normal. An abnormality of the aortic arches was suspected and contrast X-ray study of the esophagus revealed an endoluminal filling defect (Fig. 1). The esophagoscopy revealed the narrowing of the esophagus at 12 cm of dental arch, and anterior bourgeoning yellow mass bleeding easily on contact

Abbreviations: FB, foreign body; EFB, esophageal foreign body.

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http://dx.doi.org/10.1016/j.ijscr.2017.05.028

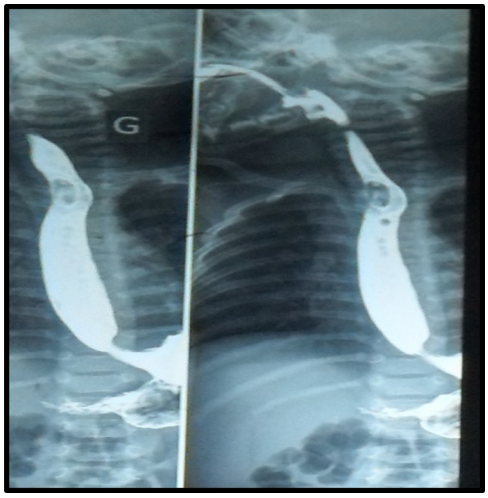

Fig. 1. Contrast X-ray study of the esophagus showing an endoluminal filling defect.

Fig. 3. The foreign body forced out: a pistachio shell.

(Fig. 2). There was also no evidence of mucosal breach or foreign body. Esophageal biopsies were obtained, and histology was inconclusive. A surgical exploration was planned, but the infant after a chest physiotherapy session forced out a pistachio shell (Fig. 3). Over the ensuing 2 years, the child has been well and gaining weight satisfactorily.

3. Discussion

This case report describes an unusual presentation of a FB in the esophagus. In fact the vast majority of EFBs bodies will pass spontaneously through gastrointestinal tract without any symptoms or complications. In cases where it is impacted, clinical signs are variable. In children, it may present with respiratory symptoms or dysphagia. Delay in diagnosis can be the result of several factors such as unwitnessed or initially asymptomatic FB ingestion and in cases of radiolucent objects. In our case, clinicians had not thought of EFB as part of the differential diagnosis of chronic respiratory signs. Long-standing EFBs may cause recurrent pneumonia or more serious consequences ranging from ulceration to fistulae, mediastinitis, pneumothorax, abscess and stricture [2–7].

The majority of FB ingestions occur in the pediatric population, with a peak incidence between six months and six years of age [8,9]. This is due to increasing curiosity and because of hand-mouth interactions with a natural instinct to place everything in the mouth [10]. The majority of impacted FB tends to be found just underneath the cricopharyngeal muscle because of the weak peristalsis in that region. The rest are found in the physiological narrowing of the esophagus at the level of the aortic arch, the left main stem bronchus and the lower esophageal sphincter [2,10]. Sharp objects have a tendency to get stuck at the level of upper esophagus [2].

Respiratory difficulties may be caused by compression of the membranous trachea. Periesophagitis, frank abcesses, cricoids pericondritis, spill-over of secretions into the trachea and tracheoesophageal fistulas [10].

The most likely mechanism for stridor is direct compression of the posterior wall of trachea by the impacted upper EFB as illustrated by our case. The compressive effect on the trachea is due to the soft pliable nature and the narrower diameter of the trachea in children, compared to adults [11].

The degree of damage depends on the nature of the impacted EFB, duration, pre-existing esophageal/tracheal pathology, site of impaction and the age of the child [12,13].

The management of esophageal foreign bodies is removal by means of a rigid or flexible endoscope wherever possible. Alternative methods such as dislodgment into the stomach have been described [14]. When endoscopic retrieval is not possible, immediate open surgical extraction should be performed. A few rare cases have been reported in which esophagotomy was required to remove an impacted esophageal foreign body, and this approach is indicated if signs of life-threatening complications occur or

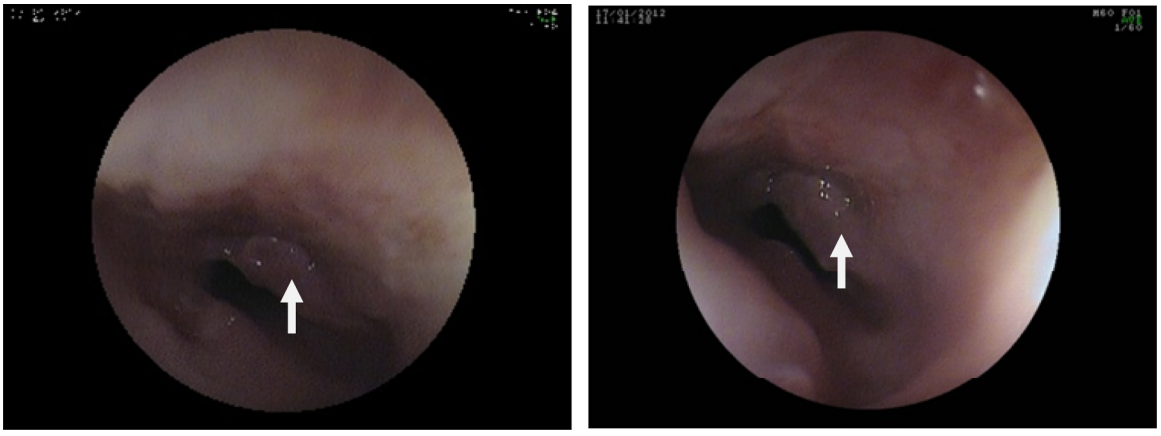

Fig 2. Esophagoscopy showing anterior yellowish burgeoning mass obstructing almost all of the esophageal lumen at 12 cm of dental arch.

appear imminent [15]. In the case presented here, the patient had forced out spontaneously the pistachio shell. Physiotherapy is not intended nor recommended for the management of ingested foreign bodies. In the presented case, chest physiotherapy was prescribed for bronchial congestion. However, the maneuvers were slightly aggressive causing sudden cough and vomiting with increased intra-abdominal pressure facilitating the expulsion of the foreign body

4. Conclusion

The facts that the accident of ingestion was not witnessed, the infant was at the time of the beginning of symptoms just 3 months old and the foreign body was covered by granulation tissue hence not identifiable during endoscopy made the diagnosis difficult. In conclusion, persistent stridor and upper –airway obstruction with no obvious cause should arouse the suspicion of the esophageal foreign body in infants.

Conflicts of interest

No conflict of interest.

Funding

No funding has been used for this research.

Ethical approval

No ethical approval has been applied for this case report study, only the written and oral consent by the patient's parent.

Consent

A written consent has been obtained from the patient for publication of this case report and accompanying images and is available for review on request.

Author contribution

Salem Yahyaoui and Imen Jahaouat wrote the paper
Salem Yahyaoui and Ines Brini provided care and follow-up for the patient
Azza Sammoud supervised the work.

Registration of research studies

researchregistry2544.

Guarantor

Salem Yahyaoui has full responsibility for the work.

Acknowledgement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

[1] R.A. Agha, A.J. Fowler, A. Saeta, I. Barai, S. Rajmohan, D.P. Orgill, SCARE Group, The SCARE statement: consensus-based surgical case report guidelines, Int. J. Surg. 34 (2016) 180–186.
[2] M.F. Lyons, A.M. Tsuchida, Foreign bodies of the gastrointestinal tract, Med. Clin. North Am. 77 (1993) 1101–1114.
[3] R.S. Miller, J.P. Willging, M.J. Rutter, K. Rookkapan, Chronic esophageal foreign bodies in pediatric patients: a retrospective review, Int. J. Pediatr. Otorhinol. Laryngol. 68 (3) (2004) 265–272.
[4] M. Oyewole, O. Ajayi, A. Hilger, Oesophageal foreign body: an unusual presentation, J. Laryngol. Otol. 127 (12) (2013) 1242–1243.
[5] M. Muthucumaru, T. Clarnette, Oesophageal foreign body causing stridor in an infant: is a rare forgotten cause, J. Pediatr. Surg. Case Reports 2 (6) (2014) 284–286.
[6] J.E. Kerschner, D.J. Beste, S.F. Conley, et al., Mediastinitis associated with foreign body erosion of the oesophagus in children, Int. J. Pediatr. Otorhinol. Laryngol. 59 (2001) 89–97.
[7] J.S. Reilly, D. Cook Stool, et al., Prevention and management of aerodigestive foreign body injuries in childhood, Pediatr. Clin. North Am. 43 (1996) 1403–1411.
[8] W.A. Webb, Management of foreign bodies of the upper gastrointestinal tract: update, Gastrointest. Endosc. 41 (1995) 39–51.
[9] E. Panieri, O.H. Bass, The management of ingested foreign bodies in children: a review of 663 cases, Eur. J. Emerg. Med. 2 (1995) 83–87.
[10] S. Beer, G. Avidau, E. Viure, R. Starinsky, A foreign body in the oesophagus as a cause of respiratory distress, Pediatr. Radiol. 12 (1) (1982) 41–42.
[11] D. Virgilis, J.M. Weinberger, D. Fisher, S. Goldberg, et al., Vocal cord paralysis secondary to impacted oesophageal foreign bodies in young children, Pediatrics 107 (2001) 101–103.
[12] W.S. Winship, P.D. Roux, B.T. Roux, Retention or radiolucent foreign bodies on oesophagus as a cause of stridor, S. Afr. Med. J. 48 (1974) 831–833.
[13] E. Hiejima, H. Nakase, S. Uemoto, Esophageal foreign body causing stridor in an infant, Clin. J. Gastroenterol. 5 (2012) 146–149.
[14] A. Sapru, M. Bin Seif Ali Elbualy, P.M. Nayyar, Esophageal foreign body causing recurrent respiratory symptoms, Gastrointest. Endosc. 48 (2) (1998) 218–219.
[15] S.O. Ikenberry, T.L. Jue, M.A. Anderson, et al., Management of ingested foreign bodies and food impactions, Gastrointest. Endosc. 73 (2011) 1085–1091.