

Original Article

Clinical Profile and Outcome of Gastrointestinal Foreign Body in Paediatric Age Group

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ABSTRACT:

Background: To evaluate the clinical profile of gastrointestinal foreign body in paediatric patients. **Materials & methods:** A total of 100 subjects were enrolled. The age group included was 6 months to 12 years. The most common clinical symptoms described by them were drooling, vomiting, dysphagia, neck, throat, or chest pain, and cough. Relations between the location of the foreign body and appearing clinical symptoms were examined. A usefulness of radiological examinations was analyzed. The results were analysed using SPSS software. **Results:** Drooling and vomiting significantly more often have appeared when FBs were located in the 1st narrowing. Pain complaints significantly more often appeared when FBs were located in the 3rd narrowing of esophagus. **Conclusion:** Pain was most commonly noticed in patients in III narrowing of esophagus.

Keywords: pain, foreign body, esophagus.

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INTRODUCTION

The presence of intraepithelial eosinophils in the esophagus without evidence of another gastrointestinal disorder has been regarded as a hallmark of GER and esophagitis in children. ^{1,2} Attwood identified a dense intraepithelial eosinophilic infiltration (>20 / HPF) in the esophagus of 12 adult patients with dysphagia and normal 24-hour esophageal pH studies. These patients rarely had symptoms of reflux. This condition has been designated idiopathic "eosinophilic esophagitis".

³ Two recent studies have described children with symptoms of acid reflux refractory to therapy with proton pump inhibitors in whom esophageal eosinophilia was a prominent finding. ^{4,5} Clinical features of these children were varied, but dysphagia was not common in either group. Only 13% had dysphagia in one study, while abdominal pain was the predominant symptom in the other. ⁴

Ingestion of foreign bodies (FB) is common in the pediatric, psychiatric, and prison populations. ^{6,7} The majority of objects, however, pass through the gastrointestinal system without any sequelae. Perforations occur in less than 1% of the cases, mostly in the esophagus and ileo-cecum. ^{6,8} Gastric perforations secondary to foreign body ingestion are uncommon. They mostly present with peritonitis, but some may spontaneously seal off and remain asymptomatic or even lead to an intraabdominal abscess. ^{6,9,10} Early endoscopy, therefore, is advocated for foreign bodies lodged in the stomach. ⁶⁻⁸ Hence, this study was conducted to evaluate the clinical

profile of gastrointestinal foreign body in paediatric patients.

MATERIALS & METHODS

A total of 100 subjects were enrolled. The age group included was 6 months to 12 years. The most common clinical symptoms described by them were drooling, vomiting, dysphagia, neck, throat, or chest pain, and cough. Relations between clinical symptoms and the location of FBs were noted. The classification of FBs was conducted by taking into account their origin (organic, inorganic) and the radiological visibility (radiolucent or radiopaque). They also noted groups of most often removed objects: coins, parts of toys, jewellery, and fragments of food. Relations between the location of the foreign body and appearing clinical symptoms were examined. A usefulness of radiological examinations was analyzed. The results were analysed using SPSS software.

RESULTS

A total of 100 subjects were enrolled. Depending on location, different clinical symptoms dominated. Objects impacted in 1st narrowing caused mainly drooling, vomiting, and dysphagia. Significant statistical correlation was stated between the location of a FB and the clinical manifestations. Drooling and vomiting significantly more often have appeared when FBs were located in the 1st narrowing. Pain complaints significantly more often appeared when FBs were located in the 3rd narrowing of esophagus.

Table 1: Clinical symptoms of esophageal foreign body, depending on location

Location	Vomiting	Drooling	Dysphagia	Pain
I narrowing	12	12	10	2
II narrowing	5	6	8	4
III narrowing	1	2	3	6
Other	1	1	4	1
p- value	0.01	0.009	0.09	0.0001

DISCUSSION

The first successful attempt of retrieval of a foreign body in the upper gastrointestinal tract with a flexible scope was described almost 40 years ago.¹¹ Flexible endoscopy is considered the first choice for the management of this clinical emergency due to its efficacy, low morbidity, and reduced costs compared to surgical treatment. In addition, it offers the possibility of identifying other gastrointestinal pathologies (eg, peptic diseases, neoplasms, strictures) while retrieving the foreign body. Flexible endoscopy adequately manages foreign body ingestion in 83–99% of patients.^{12,13} The American Society for Gastrointestinal Endoscopy recommends immediate endoscopic intervention for disc batteries in the esophagus, severe esophageal obstruction, and sharp objects in the esophagus. Endoscopic intervention can be delayed 24 hours for other objects in the esophagus and for long (>5 cm) or sharp objects in the stomach.¹⁴ Hence, this study was conducted to evaluate the clinical profile of gastrointestinal foreign body in paediatric patients.

In the present study, a total of 100 subjects were enrolled. Depending on location, different clinical symptoms dominated. Objects impacted in 1st narrowing caused mainly drooling, vomiting, and dysphagia. Significant statistical correlation was stated between the location of a FB and the clinical manifestations. A study by Cheng W et al, studied that records of children admitted to a single institution who had a history of foreign body ingestion over 33 years were reviewed. Symptoms, radiological findings, and endoscopic findings were assessed. Foreign bodies were detected in 552 (43%) of the 1,265 children admitted. The age of the children ranged from 6 months to 16 years (mean, 5.2 years). The preschool toddlers (mean age, 3.8 years) were most prone to ingest inanimate objects. The most common objects were coins (49%) and nonmetallic sharp objects (NMSO; 31%). Although x-rays could detect all the metallic objects and 86% of glass objects, the sensitivity of fish bone detection is only 26%. Absence of symptoms was common (50% in metallic group and 29% in NMSO group). Forty-one percent of coins and 95% of NMSO were lodged at sites suitable for removal by direct laryngoscopy alone with success rates of 86% and 77%, respectively. There were 3 disease-related complications and 1 mortality. Two of these children were mentally retarded and presented late.¹⁵

Another study by Pokharel R et al, studied that foreign body ingestion is a common occurrence and carries

significant morbidity and mortality. Failure to treat foreign bodies immediately can lead to various serious complications. They identified the types as well as site of foreign body ingested and its complication in children. A retrospective study of 122 cases of suspected foreign body ingestion in patients. Ages less than 12 years were included. There were 64.7% male and 35.3% female children. Foreign bodies were common in 0-4 year age group. Most common foreign body were coin (64.0%) followed by meat bone (14.0%). No foreign bodies were found in 2.4% patients as they were passed in stomach. No complications were noted during the entire period. Most common foreign bodies in children were coin. Though complications with these foreign bodies are rare, these do occur due to delay in presentation and removal. No complications were noted in the series. Even though children who swallow foreign bodies are asymptomatic; we must maintain a high index of suspicion and undergo diagnostic procedure, if there is a positive history.¹⁶ Sehgal et al. analysed the case records of 75 patients suspected of FB aspiration over a 4-year period.¹⁷ Berkowitz & Lim summarised their experiences with inhaled laryngeal foreign bodies in 9 children (5 male, 4 female) treated between March 1989 and March 2002, at the Department of Otolaryngology, University of Melbourne, Australia.¹⁸ The FB was removed within 24 hours of a witnessed choking episode in 4 children, and the diagnosis was delayed in 5 children for a period ranging from 4 days to 2 months. A review of 165 paediatric cases of documented FB inhalation, treated in the Department of Paediatrics, Bapuji Hospital, India, during 1997-2000, was carried out by Shivakumar et al.¹⁹ The University of North Carolina, Department of Otolaryngology has collected foreign bodies acquired from the airways of young children since its inception in 1954.²⁰

CONCLUSION

Pain was most commonly noticed in patients in III narrowing of esophagus.

REFERENCES

1. Winter HS, Madara JL, Stafford RJ. Intraepithelial eosinophils: A new diagnostic criterion for reflux esophagitis. *Gastroenterology* 1982; 83:818–23.
2. Lee RG. Marked eosinophilia in esophageal mucosal biopsies. *Am J Surg Pathol* 1985; 10:75–86.
3. Attwood SEA, Smyrk TC, DeMeester TR et al. Esophageal eosinophilia with dysphagia: A clinico pathologic syndrome. *Dig Dis Sci* 1993; 38:109–16.

4. Kelly KJ, Lazenby AJ, Rowe PC, et al. Eosinophilic esophagitis attributed to gastroesophageal reflux: Improvement with an amino acid-based formula. *Gastroenterology* 1995; 109:1503–12.
5. Liacouras CA, Wenner WJ, Brown K, et al. Primary eosinophilic esophagitis in children: successful treatment with oral corticosteroids. *J Pediatr Gastroenterol Nutr* 1998; 26:380–5.
6. Lam PY, Marks MK, Fink AM, Oliver MR, Woodward A. Delayed presentation of an ingested foreign body causing gastric perforation. *J Pediatr Child Health*. 2001;37(3):303–304
7. Velitchkov NG, Grigorov GI, Losanoff JE, Kjossev KT. Ingested foreign bodies of the gastrointestinal tract: retrospective analysis of 542 cases. *World J Surg*. 1996;(20):1001–1005
8. Steenvoorde P, Moues CM, Viersma JH. Gastric perforation due to the ingestion of a hollow toothpick: report of a case. *Surg Today*. 2002;32(8):731–733
9. Dugger K, Lebby T, Brus M, Sahgal S, Leikin JB. Hepatic abscess resulting from gastric perforation of a foreign object. *Am J Emerg Med*. 1990;8(4):323–325
10. Porcu A, Dessanti A, Feo CF, Dettori G. Asymptomatic gastric perforation by a toothpick. *Dig Surg*. 1999;16(5):437–438
11. McKechnie JC. Gastroscopic removal of a phytobezoar. *Gastroenterology*. 1972;62:1047–1051
12. Webb WA. Management of foreign bodies of the upper gastrointestinal tract: update. *Gastrointest Endosc*. 1995;41:39–51.
13. Chaves DM, Ishioka S, Félix VN, Sakai P, Gama-Rodrigues JJ. Removal of a foreign body from the upper gastrointestinal tract with a flexible endoscope: a prospective study. *Endoscopy*. 2004;36:887–892
14. Eisen GM, Baron TH, Dominitz JA, et al. Guideline for the management of ingested foreign bodies. *Gastrointest Endosc*. 2002;55:802–806.
15. Cheng W, Tam PK. Foreign-body ingestion in children: experience with 1,265 cases. *J Pediatr Surg*. 1999 Oct;34(10):1472–6
16. Pokharel R, Adhikari P, Bhusal CL, Guragain RP. Oesophageal foreign bodies in children. *JNMA J Nepal Med Assoc*. 2008 Oct-Dec;47(172):186–8.
17. Sehgal A, Singh V, Chandra J, et al. Foreign body aspiration. *Indian Pediatr* 2002;39:1006–10.
18. Berkowitz RG, Lim WK. Laryngeal foreign bodies in children revisited. *Ann Otol Rhinol Laryngol* 2003;112:866–8.
19. Shivakumar AM, Naik AS, Prashanth KB, et al. Tracheobronchial foreign bodies. *Indian J Pediatr* 2003;70:793–7.
20. White DR, Zdanski CJ, Drake AF. Comparison of pediatric airway foreign bodies over fifty years. *South Med J* 2004;97:434–6