Epidemiological and Clinical Profile of Upper Aerodigestive Tract Foreign Bodies: A Two-Year Retrospective Study at a Tertiary Hospital

Deradj Salah Eddine [1*], Benyahia Samir[2]

[1]Faculty of Medicine, Ferhat Abbas University, Sétif, Algeria.

[2]Faculty of Medicine, Youcef Al Khatib University, Algiers, Algeria.

***Corresponding Author**

DOI: https://dx.doi.org/10.47772/IJRISS.2026.10100368

Received: 20 January 2026; Accepted: 26 January 2026; Published: 07 February 2026

ABSTRACT

Background: Foreign bodies (FBs) of the ear, nose, and upper digestive tract represent a frequent cause of consultation in otorhinolaryngology, particularly in pediatric populations.

Objective: To describe the epidemiological, clinical, and therapeutic characteristics of ENT foreign bodies and to analyze their distribution according to age, sex, and anatomical location.

Methods: A retrospective, descriptive, and analytical study was conducted over a two-year period (December 2023–December 2025) at the Department of Otorhinolaryngology, University Hospital of Sétif. All patients managed for intra-auricular, intra-nasal, or esophageal foreign bodies were included. Intrabronchial foreign bodies were excluded, as their management is performed outside the ENT department in our institution.

Results: 110 patients were included, with a male predominance (56.4%). Children under 10 years represented 78.3% of cases. Esophageal foreign bodies were the most frequent (75.5%), followed by nasal foreign bodies (14.5%) and auricular foreign bodies (10%). Coins were the most common esophageal foreign bodies (81.9%). Button batteries were rare (3.6%) but potentially severe.

Conclusion: Foreign bodies in ENT practice predominantly affect children. Esophageal foreign bodies constitute true medico-surgical emergencies requiring early diagnosis and specialized management.

Keywords: Foreign bodies, Otorhinolaryngology, Pediatrics, Esophagus, Ear, Nose.

INTRODUCTION

Foreign bodies of the ear, nose, and upper digestive tract are among the most common emergencies encountered in otorhinolaryngology, particularly in children [1,2]. Their occurrence is mainly related to exploratory behavior, immature swallowing mechanisms, and insufficient supervision in early childhood [3].

While many auricular and nasal foreign bodies are benign, esophageal foreign bodies represent true medico-surgical emergencies due to the risk of obstruction, perforation, and severe complications [4,5]. Coins remain the most frequently ingested foreign bodies in children worldwide, whereas button batteries, although less common, are associated with severe mucosal injuries and potentially fatal outcomes [6,7].

Several national and international studies have described the epidemiological characteristics of ENT foreign bodies, highlighting a predominance in young male children and significant geographic variability [8–10]. In Algeria, hospital-based studies have reported similar patterns, with esophageal foreign bodies being the most frequent localization [11–13].

The aim of this study was to describe the epidemiological, clinical, and therapeutic characteristics of ENT foreign bodies managed at Sétif university hospital in Algeria and to compare local findings with data from the literature.

This study focused exclusively on foreign bodies of the upper aerodigestive tract managed in the ENT department; intrabronchial foreign bodies were deliberately excluded, as they are not managed in our institution.

MATERIALS AND METHODS

A retrospective, descriptive and analytical study was conducted at the Department of Otorhinolaryngology of the University Hospital of Sétif over a two-year period, from December 2023 to December 2025.

All patients managed for intra-auricular, intra-nasal, or esophageal foreign bodies during the study period were included. Data were collected retrospectively from medical records, consultation registers, and available operative and endoscopic reports.

Cases of intrabronchial foreign bodies were excluded from this study, as their management is performed outside the ENT department in our center.

The variables studied included epidemiological data (age, sex), clinical characteristics (location and nature of the foreign body, circumstances of occurrence), therapeutic management, and outcomes. A descriptive analysis was performed to determine frequencies and distributions, followed by an analytical analysis exploring relationships between age, foreign body location, and management modalities.

RESULTS

A total of 110 patients were included in this retrospective study. The age distribution showed a clear predominance of pediatric cases. Children under 10 years of age accounted for 78.3% of patients, with the highest proportion observed in the 0–5-year age group (44.6%), followed by the 6–10-year group (33.7%). Patients older than 10 years represented 21.7% of cases (Figure 1).

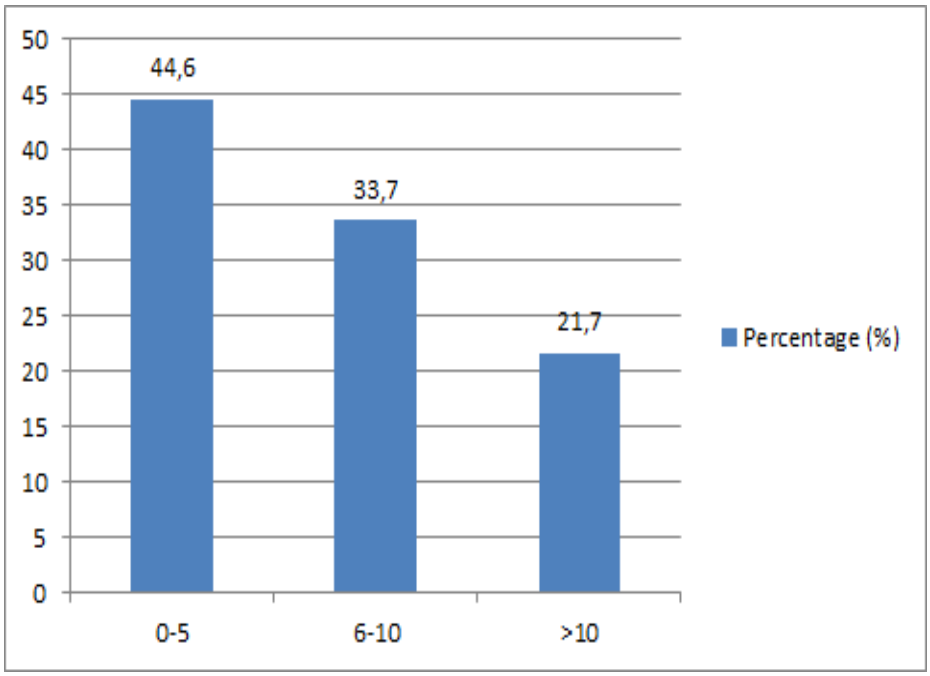

Figure 1. Sex distribution of patients with ENT foreign bodies.

Analysis of foreign body localization revealed that esophageal foreign bodies were by far the most frequent, representing 75.5% of all cases. Nasal foreign bodies accounted for 14.5%, while aural foreign bodies represented 10% of cases (Figure 2).

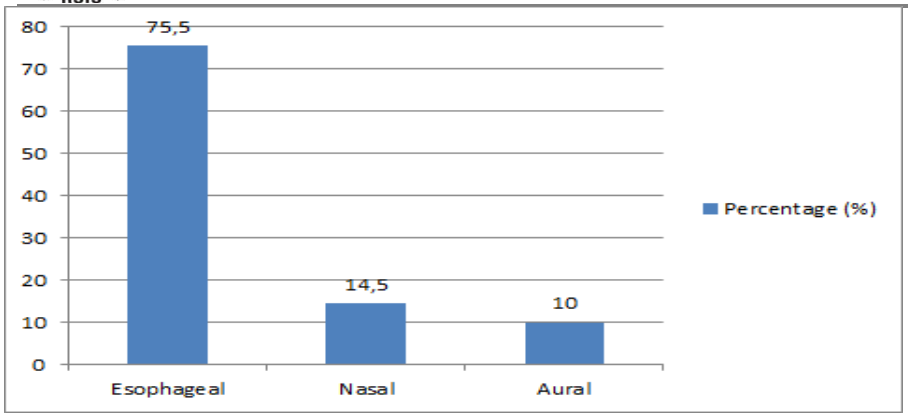

Figure 2. Distribution of foreign bodies according to anatomical location.

Regarding gender distribution, a slight male predominance was observed. Males accounted for 56.4% of the cases, while females represented 43.6% (Figure 3).

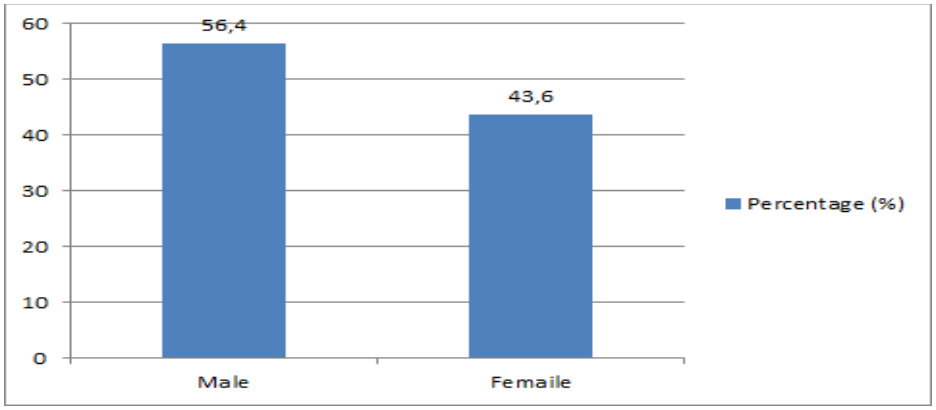

Figure 3. Sex distribution of patients with ENT foreign bodies.

Most patients originated from the Sétif province, which accounted for 72.8% of cases, followed by Bordj Bou Arréridj (17.5%) and M'Sila (7.8%), reflecting the hospital's main catchment area.

Among esophageal foreign bodies, coins were the most commonly ingested objects (81.9%), followed by meat boluses (10.84%). Button batteries were less frequent (3.6%) but were identified as potentially hazardous. Nasal foreign bodies were mainly beads and plastic toys (each accounting for approximately one-third of cases), while aural foreign bodies showed a heterogeneous distribution, including beads, polystyrene, plastic toys, organic material, and electronic devices.

Ethical Considerations

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Given the retrospective nature of the study, informed consent was waived. Patient confidentiality and anonymity were strictly respected, and all data were collected and analyzed in an anonymized manner. Approval was obtained from the local institutional ethics committee of the University Hospital of Sétif.

DISCUSSION

This retrospective study confirms that ENT foreign bodies predominantly affect the pediatric population, with a clear male predominance, findings consistent with previous national and international reports [8,9,14]. Boys are more frequently affected due to exploratory behavior and increased exposure to risk-taking activities [15].

Esophageal foreign bodies were the most frequent localization in our series, with coins accounting for the majority of cases. This observation is consistent with studies from Algeria, Europe, and North America, where coins represent 70–85% of esophageal foreign bodies in children [11,16,17]. International guidelines emphasize the need for prompt endoscopic extraction to prevent complications [5,18].

Although button batteries were relatively uncommon in our study, their potential severity is well documented. Several authors have reported rapid esophageal injury, necrosis, and perforation following button battery ingestion, sometimes within a few hours [6,19,20]. The lower incidence observed in our setting may reflect differences in exposure rather than reduced risk.

Nasal and auricular foreign bodies were less frequent and were mainly related to play activities in young children. Beads, plastic toys, and organic materials were the most commonly reported objects, in agreement with findings from Africa, Asia, and Europe [21–23].

Overall, the epidemiological profile observed in our hospital converges with published data, underscoring the universality of this pathology while highlighting the importance of adapting preventive strategies to local contexts [10,14].

This study has certain limitations. Its retrospective and single-center design may introduce selection bias and limit the generalizability of the findings. In addition, the analysis was mainly descriptive, without inferential statistical testing, which restricts the ability to establish significant associations between variables. Nevertheless, the study provides valuable epidemiological data on upper aerodigestive tract foreign bodies in a tertiary hospital setting.

The exclusion of intrabronchial foreign bodies reflects the organizational structure of care in our institution and should be considered when interpreting the findings.

CONCLUSION

Foreign bodies in the ENT field remain a frequent pathology, particularly among children. While nasal and auricular foreign bodies are usually benign, esophageal foreign bodies constitute true medico-surgical emergencies requiring early diagnosis and specialized management [5,18].

Preventive education, early referral, and standardized extraction protocols are essential to reduce morbidity and potentially severe complications, particularly those related to button battery ingestion [6,20].

Conflict of Interest

The authors declare no conflict of interest.

REFERENCES

1. DiMuzio J, Deschler DG. Foreign bodies of the airway and Esophagus. Otolaryngol Clin North Am. 2002;35(4):589-96.
2. Gregori D, et al. Foreign bodies in the upper airways. Int J Pediatr Otorhinolaryngol. 2007;71(6):923-9.
3. Ibekwe TS, et al. Foreign bodies in the ear, nose and throat. Niger J Med. 2007;16(4):301-4.
4. Webb WA. Management of foreign bodies of the upper gastrointestinal tract. Gastroenterology. 1988;94:204-16.
5. ESGE Standards of Practice Committee. Management of ingested foreign bodies. Endoscopy. 2020.
6. Litovitz T, et al. Button battery injuries. Pediatrics. 2010;125(6):1168-77.
7. Brumbaugh DE, et al. Button battery ingestion. Curr Opin Pediatr. 2011;23:560-5.
8. Jin Y, et al. Epidemiology of pediatric foreign bodies. China. 2021.
9. American Academy of Pediatrics. Foreign body ingestion in children. 2019.
10. SFORL. Corps étrangers ORL chez l'enfant. 2020.
11. Merdjana S, Benchaooui M. Corps étrangers de l'œsophage. Rev Alg ORL. 2018.
12. CHU Constantine. Profil épidémiologique des corps étrangers ORL chez l'enfant. 2020.
13. CHU Blida. Analyse des corps étrangers œsophagiens. 2018.
14. Cohen J, et al. Esophageal foreign bodies in children. J Pediatr Surg. 2017.
15. Thompson SK, et al. External auditory canal foreign bodies. Laryngoscope. 2003;113:1912-5.
16. Athanassiadi K, et al. Management of esophageal foreign bodies. Eur J Cardiothorac Surg. 2002;21:653-6.

17. Cheng W, Tam PKH. Foreign-body ingestion in children. J Pediatr Surg. 1999;34:1472-6.
18. ASGE Standards of Practice Committee. Gastrointest Endosc. 2011;73:1085-91.
19. Wu WT, et al. Complications of esophageal foreign bodies. World J Gastroenterol. 2011;17:4545-9.
20. Schulze SL, et al. Ear foreign bodies. Pediatr Emerg Care. 2002;18:67-9.
21. Figueiredo RR, et al. Nasal foreign bodies. Int Arch Otorhinolaryngol. 2012;16:8-13.
22. Kadish HA, et al. Nasal foreign bodies in children. Pediatr Emerg Care. 1997;13:115-7.
23. Ansley JF, Cunningham MJ. Treatment of aural foreign bodies. Pediatrics. 1998;101:638-41.