

## Otorrhea revealing a neglected parapharyngeal foreign: A case report and a literature review

Y ELKHALIFA <sup>1,\*</sup>, MA AITLHADJ <sup>1</sup>, Y LAKHDAR. <sup>1</sup>, O BENOUMAD <sup>2</sup>, Y ROCHDI <sup>1</sup> and A RAJI <sup>1</sup>

<sup>1</sup> Department of ENT and cervico-facial surgery of the university hospital Mohamed 6 of Marrakech, Morocco.

<sup>2</sup> Department of ENT and cervico-facial surgery of the university hospital Hassan 2 Agadir, Morocco.

World Journal of Advanced Research and Reviews, 2024, 21(03), 2442–2447

Publication history: Received on 05 February 2024; revised on 24 March 2024; accepted on 27 March 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.21.3.0857>

### Abstract

Foreign body removal is a common procedure in Otorhinolaryngological (ORL) practice.

It may affect adults as well as children, the nature of the Foreign body varies depending on the situation, for adult it is generally swallowed Foreign Bodies seen in the palatine, piriform sinus and vallecula but for children its due to playground accidents multiple location are possible with varying symptoms depending on the location otorrhea being an unusual symptom.

Nevertheless, the parapharyngeal space remains a rare location with the possibility of migration to deep neck spaces<sup>2</sup>, presenting a danger to the vascular and nervous structure in the region, which presents a challenge during the extraction procedure.

**Keywords:** Parapharyngeal space; Foreign body; Endoscopic approach; Neglected foreign body removal; Case study

### 1. Introduction

Foreign body removal is a common procedure in Otorhinolaryngological (ORL) practice<sup>1</sup>

It may concern adults as well as children, the nature of the Foreign body varies depending on the location, for adult it is generally swallowed Foreign Bodies seen in the palatine, piriform sinus and vallecula These foreign bodies may get stuck in tonsil, base of tongue, piriform fossae, esophagus, and sometimes even in the larynx or the lower respiratory tract, leading to emergency situation, which maybe a great challenge to otolaryngologists<sup>2,3,4</sup> but for children its due generally to playground accidents that are accompanied by a poor and confusing history.

Multiple locations are possible with varying symptoms depending on the location otorrhea being an unusual symptom, The diagnosis is based on the history, clinical, and radiological examination.

Nevertheless, the parapharyngeal space remains a rare location with the possibility of migration to deep neck spaces<sup>5</sup>, presenting a danger to the vascular and nervous structure in the region, which presents a challenge during the extraction procedure.

This confusing history about a 3-year-old child who presented with purulent ear discharge and was later diagnosed to have impacted foreign body in the parapharyngeal space. Our case is worth reporting for the rarity of site for foreign body lodgment and the atypical presentation of the case as a diagnostic and therapeutic dilemma.

\* Corresponding author: ELKHALIFA.Y

## 2. Patient et observation

A 3 year old boy presented to our department with a history of purulent ear discharge . This complaint had been first noticed 7 months ago and had a gradual onset and without any resolution even after multiple treatment including general and local antibiotics . It was noted that boy had suffered nine months ago from a fall during a playground accident after which he complained from swallowing difficulties that lasted a month, Examination of the oropharynx showed a granulomatous lesion in the junction of the soft palate retro molar triangle on the left side (figure 1) and the tonsils were normal. Ear examination noted abundant otorrhea in the left ear which after aspiration showed an inflammatory polyp originating from the posterior wall of the external auditory canal (figure 2).



**Figure 1** Granulomatous lesion in the junction of the soft palate retro molar triangle on the left side



**Figure 2** Inflammatory polyp originating from the posterior wall of the external auditory canal

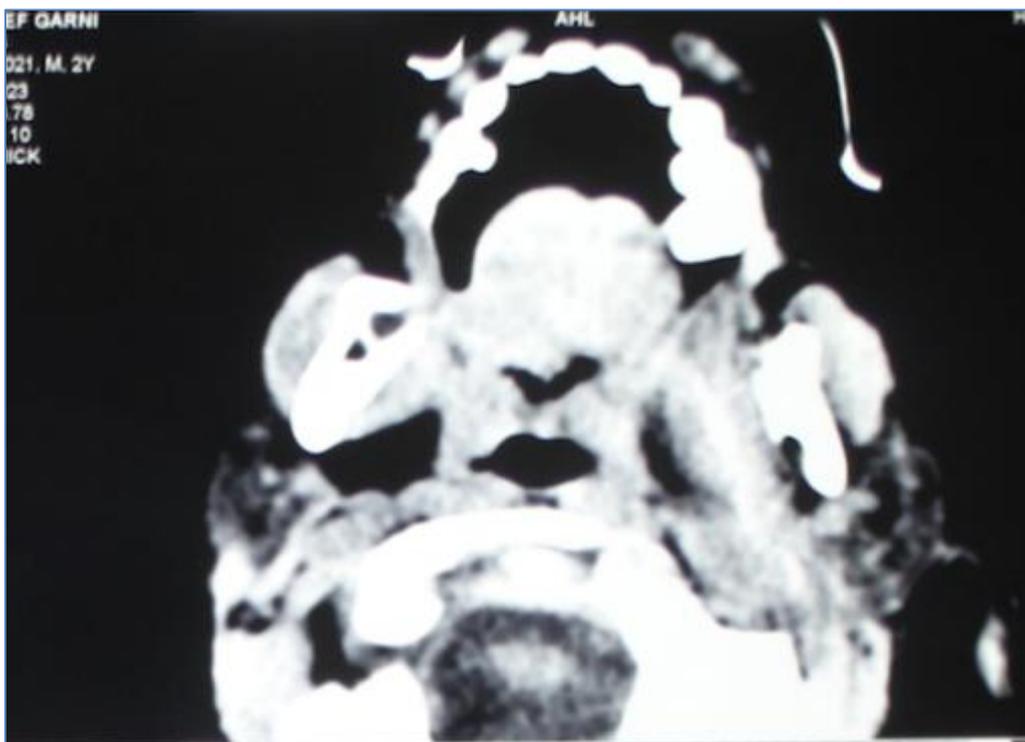
In the endoscopic examination of the pharynx was normal , Other clinical examinations were unremarkable.

An ear CT showed on the left side a tissular mass in the external auditory canal , with solution of continuity of the inferior aspect of the external auditory canal suggesting a fistula ( figure 3), the middle ear and mastoid cavities were normal , the radiologist mentioned a suspicion of a foreign body in the parapharyngeal space on the left side, a facial and cervical CT was done then revealing a foreign body with a density of 180 Hounsfield unit embedded in the left parapharyngeal

space extending to the prestyloid region and infra temporal fossa, respecting the vascular structures associated to an inflammatory reaction of surrounding tissues ( figure 4).



**Figure 3** Rupture of the inferior aspect of the auditory external canal



**Figure 4** Foreign body in the parapharyngeal space on the left side

The patient was immediately admitted and was planned for foreign body removal under general anaesthesia.

## 2.1. Surgical technique

The technique consisted of an incision of the mucosa on the granulous lesion after which a careful dissection was done revealing the distal part of the foreign body , after freeing it from the adhesences and the fibrous tissues a careful and slow extraction was done revealing a wooden stick measuring 4,5 cm in length and 0,5 cm girth ( figure 5 ) hemostasis was assured,to be noted that the monopolar cautery was not used during procedure as for not to cause damages to neighboring structures such as the lingual nerve and inferior alveolar nerve,wound repaired with vicryl 3-0 interrupting sutures .



**Figure 5** Foreign body: wooden stick

---

## 3. Discussion

Foreign bodies located in the parapharyngeal region are secondary to external trauma or following complications of oral surgery , most of the time they may be unrecognized at first and the diagnosis comes much later via compilation.<sup>6,7,8,9,10,11</sup>

Having in mind the important organs in the immediate vicinity of the space and its potential communicating portals with these organs via the anatomical foraminas, the foreign body in such a location with its potential to cause inflammatory reaction and tendency to migrate is always a potential threat for causing serious complications like proptosis with threat to vision and various intracranial complication.<sup>9,11</sup>

Removal of foreign bodies from the PPS and infra temporal fossa is surgically challenging and fraught with risks. Injury to the internal maxillary artery and pterygoid venous plexus may result untoward bleeding<sup>12</sup>.

The parapharyngeal space is an Inverted pyramid with floor at skull base, tip at hyoid, bounded by the pharyngeal wall medially and the mandible laterally Also known as-lateral pharyngeal space, pharyngomaxillary space, pterygomaxillary space, pterygopharyngeal space, the boundaries of the PPS are

- Superior: base of skull. Inferior: greater cornu of the hyoid bone.
- Medial: middle layer of the deep cervical fascia covering the superior pharyngeal constrictor levator ,tensor veli palatini muscles.
- lateral: superficial layer of the deep cervical fascia extending between styloid process and mandibular ramus,
- anterior: pterygomandibular raphe and superficial layer of the deep cervical fascia covering the medial pterygoid muscle,
- posterior: an extension of tensor veli palatini muscle fascia termed the tensor-vascular-styloid fascia ; or an extension of the fascia of the stylopharyngeus, styloglossus , and levator veli palatini muscles.

The major contents of the PPS include

- Fat
- Retromandibular parotid
- Lymph node
- Internal maxillary artery
- Inferior alveolar nerve
- Lingual nerve

These foreign bodies can manifest in various way ranging from discomfort to cellulitis, abscess formation, discharging sinus granulomas and reactions and migration with erosion of vessel walls<sup>12</sup>.

In our case the ear discharge could be explained by the erosion of the inferior wall of the external auditory canal causing inflammation resulting in the fistula that we discovered in the CT.

Multiple surgical approaches are described in literature on how access the PPS transoral and transpalatal, transzygomatic and lateral infratemporal transmandibular these later requiring considerable dissection that may be viewed by some as too aggressive balanced by the fact that a more aggressive approached is associated with a wider and better exposition during surgery resulting in easier extraction.

the extraction of foreign bodies in a very rich and complex region does not require nor implies a systematic large and bloody approach but a mini-invasive one using endoscopy, image guidance, and the transoral approach in combination. Allowing for optimal visualization throughout the procedure, while image guidance confirms the appropriate dissection trajectory<sup>14</sup>.

---

#### 4. Conclusion

The surgical approach must in all cases be as conservative as possible in order to avoid damages while extracting the foreign body, endoscopic should be the main surgical technique associated with image guiding systems for a better surgical planning.

---

#### Compliance with ethical standards

##### *Disclosure of conflict of interest*

The author reports no conflicts of interest. The author alone are responsible for the content and writing of the paper.

##### *Authors Contributions*

Designed the study, Collected the datas, Analysed the datas, and wrote the manuscript.

##### *Statement of informed consent*

Verbal informed consent was obtained from patients for their anonymized information to be published in this article

---

#### References

- [1] Barzilai G., Braverman I., Karmeli R., Greenberg E. How did it get there? A coiled metal foreign body in an unusual cervical position. *Otolaryngol Head Neck Surg.* 2001; 124:590–591. [PubMed] [Google Scholar]
- [2] Sekhar P, El-Jassar P, Ell SR. Recurrent unilateral tonsillitis secondary to a penetrating foreign body in the tonsil. *J Laryngol Otol* 1998; 112: 584. Lee FP.
- [3] Removal of fish bones in the oropharynx and hypopharynx under video laryngeal telescope guidance. *Otolaryngol Head Neck Surg* 2004; 131: 50-53.
- [4] Abdullah BJ, Teong LK, Mahadevan J, Jalaludin A. Dental prosthesis ingested and impacted in the esophagus and orolaryngopharynx. *J Otolaryngol* 1998, 27: 190-194

- [5] Aydogan B., Soylu L., Tuncer U., Akçali A. Parapharyngeal foreign body. *Otolaryngol Head Neck Surg.* 2001, 125:424–425. [PubMed] [Google Scholar]
- [6] Goswami S. A bullet in the maxillary antrum and infratemporal fossa. *Indian J Dent Res.* 2013, 24:149. [PubMed] [Google Scholar]
- [7] Hamdoon Z, Jerjes W, Al-Delayme RM, Upile T, Hopper C. Glass displaced into the infratemporal region from submandibular injury: A case report. *Hard Tissue.* 2012, 10:6. [Google Scholar]
- [8] Baig MH, Punjabi SK, Khan M. Displacement of maxillary third molar in the infratemporal fossa. *Pak Oral Dent J.* 2012, 32:39–41. [Google Scholar]
- [9] Sajad M, Kirmani MA, Patigaroo AR. Neglected foreign body infratemporal fossa, a typical presentation: A case report. *Indian J Otolaryngol Head Neck Surg.* 2011, 63(Suppl 1):96–8. [PMC free article] [PubMed] [Google Scholar]
- [10] Ziade M, Mallek A, Delaval C, Goudot P, Yachouh J. Vegetable foreign body of the infratemporal fossa: A case report. *Rev Stomatol Chir Maxillofac.* 2009, 110:236–8. [PubMed] [Google Scholar]
- [11] Grant CA, Rubin PA. An infratemporal fossa foreign body presents as an infraorbital mass. *Arch Ophthalmol.* 2000, 118:993–5. [PubMed] [Google Scholar]
- [12] Battisti A, Priore P, Giovannetti F, Barbera G, D'Alessandro F, Valentini V. Rare complication in third maxillary molar extraction: dislocation in infratemporal fossa. *J Craniofac Surg.* 2017, 28(7):1784-1785.
- [13] Lahiri S, Ghosh S, Sengupta G, Bakshi U. An unusual presentation of foreign body in the common carotid artery. *Indian J Surg.* 2011, 73:460–2.
- [14] Ashton E. Lehmann, Endoscopic Transoral Image-Guided Retrieval of foreign body in the Infratemporal Fossa.