

## An unusual case of nasal foreign body presenting as recurrent otitis media

Sujeet Agrawal<sup>1</sup>, Sushil Natthuji Panbude<sup>2</sup>, Shailendra Gupta<sup>3</sup>

From <sup>1</sup>Director and Consultant Radiologist, Shri Shyam Diagnostics, Ambikapur, Chhattisgarh, India, <sup>2</sup>Consultant Radiologist, Department of Radiology, Ruby Hall Clinic, Pune, Maharashtra, India, <sup>3</sup>Associate Professor, Department of ENT, RSDKS Government Medical College, Ambikapur, Chhattisgarh, India

### ABSTRACT

Otitis media (OM) is a common problem involving children. In the majority, the cause is related to dysfunction of the Eustachian tube due to bacterial or viral rhinitis and less commonly due to nasopharyngeal tumors. We present a case of recurrent OM which was evaluated and incidentally found a nasal foreign body for which the patient was asymptomatic. This nasal body was the cause of recurrent OM which is very unusual.

**Key words:** Adenoids, Eustachian tube, Foreign body, Nasal, Otitis media

Otitis media (OM) is the inflammation of the middle ear cavity which primarily affects children and young adults. It can result from bacterial or viral infection or due to blockage of the Eustachian tube due to adenoids, nasopharyngeal tumors, cysts, polyposis, etc. [1,2]. Imaging is required to rule out definitive causes of OM in cases that do not resolve with medical management. Furthermore, there can be unusual and rare causes of OM that requires comprehensive imaging with computed tomography (CT) scan or magnetic resonance imaging [2-4].

In this case report, we described a case that presented with symptoms of OM at presentation and incidentally detected with a nasal foreign body on CT scan, after removal of which, the patient was completely cured of OM with no relapse of symptoms.

### CASE REPORT

A 10-year-old boy presented with right ear pain and right hearing loss for 2 years. He also has a history of recurrent cough and cold for 5 years.


On general examination, the general condition was fair with a normal build. On chest auscultation, the chest was clear with normal heart sounds. No abnormality was seen on the per-abdomen examination. There was no pallor, icterus, cyanosis, or edema. On local examination, right the tympanic membrane was dull and intact, there was no ear discharge. The left tympanic membrane was normal. The nose was congested on both sides and mucoid secretions were seen on both sides (right > left).

Throat was congested and tonsils were grade 2 on both sides. No palpable cervical lymph nodes were seen.

On tuning fork test, Weber was lateralized to the right side. Rinne's test was negative on the right side and positive on the left side. The absolute bone conduction test was equal on both sides. On pure-tone audiometry, the right hearing threshold was 35 dB and the left hearing threshold was 15 dB. On impedance audiometry, the tympanogram was type B on the right side and type A on the left side which suggested right middle ear pathology. All these test results suggest a conductive hearing loss in the right ear [5,6].

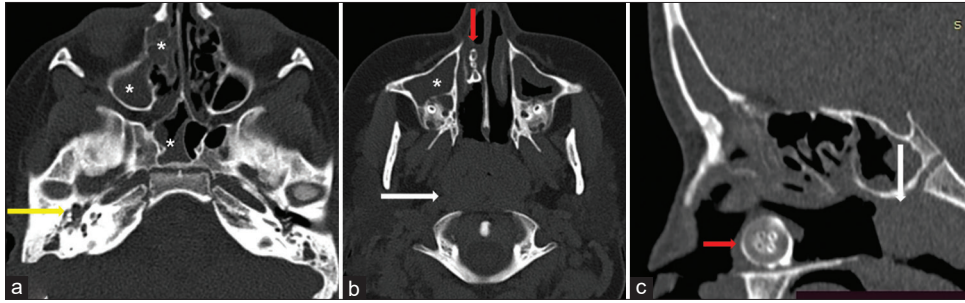
Hence, the clinical diagnosis was recurrent secretory OM and the patient was referred for a CT scan. CT revealed fluid in the right middle ear suggestive of effusion. There was no erosion of the ossicular chain, tegmen tympani, or bony covering of the semi-circular canal or facial canal. CT also showed a hyperdense structure in the right nasal cavity which resembled a shirt button on reformatted images. There was also fluid and mucosal thickening in the right maxillary, ethmoid, and frontal sinuses, suggestive of sinusitis. Nasopharyngeal adenoids were enlarged (Fig. 1). The patient did not give any history of nasal foreign body insertion or it was possible that the patient wanted to hide that history from his parents due to fear.

After the CT scan, referring ENT surgeon then performed a nasal scopy and found a foreign body lodged in the right nasal cavity between the septum and inferior turbinate which was then successfully removed. On inspection, it corresponded to the shirt button (Fig. 2). There were no complications in the procedure. The patient was then successfully treated with no relapse of symptoms on follow-up.

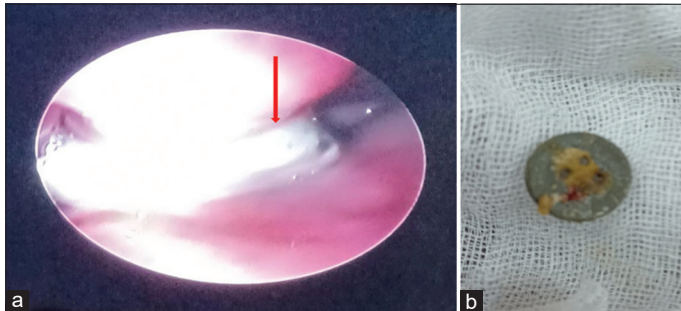
Access this article online	
Received - 16 February 2023 Initial Review - 01 March 2023 Accepted - 02 May 2023	Quick Response code 
DOI: 10.32677/ijcr.v9i4.3878	

**Correspondence to:** Dr. Sujeet Agrawal, Shri Shyam Diagnostic, Jail Road, Ambikapur, Chhattisgarh, India. E-mail: sujeet.agrawal@yahoo.com

© 2023 Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC-ND 4.0).



**Figure 1:** CT scans in bone window. Axial image (a) shows fluid in right middle ear suggestive of effusion. Axial and reformatted sagittal images (b and c) show hyperdense structure in right nasal cavity which resembled a shirt button on reformatted images (red arrow). There was also fluid and mucosal thickening in right maxillary, ethmoid and frontal sinuses (asterisks in a and b). Nasopharyngeal adenoids were enlarged which are due to associated infection (white arrow in b and c).



**Figure 2:** Endoscopy image (a) shows white foreign body which on removal correspond to shirt button (b)

## DISCUSSION

OM refers to the inflammation of the middle ear cavity which is classified as acute or chronic depending on the duration of symptoms. OM is one of the most common diseases in young children. OM could be infective resulting from bacterial or viral infections or could be non-infective due to blockage of the Eustachian tube due to adenoids, nasopharyngeal tumors, cysts, polyposis, etc. [1,2]. If symptoms of OM last for more than 6 weeks, it is termed chronic OM.

Diagnosis is usually clinical with the local examination. Imaging is usually required to look for the cause of OM if symptoms are not resolved by medical management and also to look for the complications of OM, such as cholesteatoma, bony erosion, venous thrombosis, abscess formation, etc. [7].

Secretory OM usually resolves with watchful waiting. However, if persistent, myringotomy with tympanostomy tube insertion is effective. If the Eustachian tube is blocked, underlying obstructive pathology should be removed (such as adenoidectomy and tumor/cyst/polyp resection) [8]. Acute OM due to infective etiology is usually treated with NSAIDs and antibiotics (ototopical or systemic antibiotics) [9].

Nasal foreign bodies are frequently encountered in children, more common in children less than 5 years of age when they start playing, and more commonly in the nose [10,11]. They are usually benign and do not require any urgent intervention. However, some object causes severe damage and need to be removed urgently; these objects include batteries and magnets, etc. The most likely objects to be found are pebbles, beads, nuts, chalk, button batteries,

and other small objects. Unilateral mucopurulent nasal discharge is the most consistent symptom in a nasal foreign body; unusually, it can be blood stained. Nasal occlusion, headache, epistaxis, and pain are other symptoms of a nasal foreign body. Nasal foreign bodies can be missed and may remain for several weeks, months, or years without any symptoms [12,13]. Diagnosis of the nasal foreign body requires a high index of suspicion, in the absence of relevant history. The nasal foreign body should be removed once diagnosed. Furthermore, careful evaluation of the patient to look for complications of the foreign body is essential, if a foreign body is present for a long time.

Patient's with a nasal foreign body most commonly present with unilateral mucopurulent discharge, usually blood-stained and nasal blockage which raises suspicion of a foreign body. However, our patient did not have any of these symptoms at the presentation at our clinic, indeed had recurrent right ear discharge and pain. The right nasal foreign body might have caused recurrent infection/inflammation such as sinusitis as in our case which resulted in an enlarged nasopharyngeal adenoid. Enlarged adenoids obstructed the Eustachian tube with resultant effusion in the right middle ear which is the main symptom to seek medical advice as in our case. Although the child or parents did not give a history of foreign body insertion, the child might have accidentally inserted it during playing and might not have informed parents due to fear.

## CONCLUSION

In this case report, we presented an unusual case of nasal foreign body with a predominant presentation with recurrent right ear discharge, ear pain, and hearing loss. There was no history of insertion of a foreign body in the nose and predominant nasal symptoms related to a nasal foreign body. On CT scan for evaluation of OM, a foreign body was incidentally found in the right nasal cavity which was the cause of recurrent OM. On removal of foreign body and medical management of the present OM, there was no relapse on follow-up.

## REFERENCES

- Schilder AG, Chonmaitree T, Cripps AW, Rosenfeld RM, Casselbrant ML, Haggard MP, *et al.* Otitis media. *Nat Rev Dis Primers* 2016;2:16063.

2. Keereweer S, Metselaar RM, Dammers R, Hardillo JA. Chronic serous otitis media as a manifestation of temporal meningioma. *ORL J Otorhinolaryngol Relat Spec* 2011;73:287-90.
3. Kawamoto A, Katori Y, Honkura Y, Ogura M, Oshima T, Kobayashi T. Osseous hamartoma arising from the eustachian tube. *Clin Pract* 2013;3:e25.
4. Facer GW, Piegras DG, Weiland LH, Mokri B. Unusual causes of unilateral serous otitis media. *Laryngoscope* 1980;90:1305-12.
5. Brandt JP, Winters R. Bone conduction evaluation. In: *StatPearls*. Treasure Island, FL: StatPearls Publishing; 2023. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK578177> [Last accessed on 2023 Feb 19].
6. Common Types of Tympanograms. Available from: <https://www.audiologyonline.com/ask-the-experts/common-types-of-tympanograms-361> [Last accessed on 2023 Jan 28].
7. Trojanowska A, Drop A, Trojanowski P, Rosińska-Bogusiewicz K, Klatka J, Bobek-Billewicz B. External and middle ear diseases: radiological diagnosis based on clinical signs and symptoms. *Insights Imaging* 2012;3:33-48.
8. Searight FT, Singh R, Peterson DC. Otitis media with effusion. In: *StatPearls*. Treasure Island, FL: StatPearls Publishing; 2023. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK538293> [Last accessed on 2023 Jan 23].
9. Acharya A, Reid A. Acute Otitis Media. *Logan Turner's Dis Nose, Throat Ear Head Neck Surgery*. 11<sup>th</sup> ed. United States: CRC Press; 2022. p. 403-9. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK470332> [Last accessed on 2023 Jan 07].
10. Regonne PE, Ndiaye M, Sy A, Diandy Y, Diop AD, Diallo BK. Nasal foreign bodies in children in a pediatric hospital in Senegal: A three-year assessment. *Eur Ann Otorhinolaryngol Head Neck Dis* 2017;134:361-4.
11. Memiş M, İlhan E, Ulucanlı S, Yaman H, Güçlü E. Nasal foreign bodies: An analysis of 130 patients. *Kulak Burun Bogaz İhtis Derg* 2015;25:109-12.
12. Baranowski K, Al Aaraj MS, Sinha V. Nasal foreign body. *Fleisher Ludwig's 5-Minute Pediatr Emergency Med Consult*. Netherlands: Wolters Kluwer; 2021.
13. Kalan A, Tariq M. Foreign bodies in the nasal cavities: A comprehensive review of the aetiology, diagnostic pointers, and therapeutic measures. *Postgr Med J* 2000;76:484-7.

*Funding: Nil; Conflicts of interest: Nil.*

**How to cite this article:** Agrawal S, Panbude SN, Gupta S. An unusual case of nasal foreign body presenting as recurrent otitis media. *Indian J Case Reports*. 2023;9(4):113-115.