ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 01 | January - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

SELF INFLICTED UNUSUAL MAXILLARY SINUS FOREIGN BODY IN PATIENT OF CHRONIC SINUSITIS- A CASE REPORT

Otorhinolaryngology

Dr. Surendra Kumar Arya*	Department Otorhinolaryngology, B.R.D. Medical College Gorakhpur *Corresponding Author
Dr. A. K. Pathak	Asso. Prof., Department Otorhinolaryngology, B.R.D. Medical College Gorakhpur
Dr. P. N. Singh	Asso.Prof., Department Otorhinolaryngology, B.R.D. Medical College Gorakhpur
Dr. R. N.Yadav	Prof & HOD, Department Otorhinolaryngology, B.R.D. Medical College Gorakhpur
Dr. Devendra	Department Otorhinolaryngology, B.R.D. Medical College Gorakhpur
Dr. Vaibhav Srivastava	Department Otorhinolaryngology, B.R.D. Medical College Gorakhpur

KEYWORDS

INTRODUCTION

The maxillary sinus, a bilateral pneumatic region located inside the maxillary bone, is the largest of the paranasal sinuses. It is lined by a pseudostratified ciliated columnar epithelium composed of mucus-producing goblet cells.[1] Foreign bodies are common in ENT department, however they are rare in the paranasal sinuses. In general, women are impacted at a higher rate than men (57.7% versus 42.82%).[2] The frontal sinus (18%) is the next most often affected sinus, after the maxillary sinus (75%).[3]

The patient may voluntarily or unintentionally introduce foreign bodies. Rarely are paranasal sinus foreign bodies observed, and the majority are either inadvertently (25%) or iatrogenically (60%) introduced [4]. Dental burs, dental impression materials, dental implants, fractured teeth, endodontic tools and materials, and dental filling materials (such as amalgam) are only a few of the numerous varieties of these.

Less frequently, facial injuries from attacks or car crashes are linked to foreign bodies of non-dental origin. The alien bodies in the latter case—which could be gunshot pellets, glass fragments, bullets, wooden sticks, or piercing metal objects like a sewing needle, knife, or door handle—are put straight into an open wound in the maxillary sinus.[5]

The way a foreign body is managed depends on its size, shape, and location. The Caldwell Luc procedure, the lateral window approach, and endoscopic sinus surgery are frequently used techniques for eliminating foreign things.[6].

Case Report

A 33-year-old man arrived at the ENT outpatient department complaining of a headache and a heaviness in right cheek. He did not have a history of post-nasal drip, nasal blockage, fever, epistaxis, or discharge. Headache was mild in severity but sometimes increases and for that he has been putting some object in right nostril on and off to block the nose for reducing air entry as he thought that increased air entry caused this headache, which gave him relief sometimes. He had no sign of a mental disorder and could communicate normally.

He had already undergone FESS surgery thrice in last 10 years for chronic rhinosinusitis with bilateral blocked OMC and septoplasty for right DNS but his complaints of headache and heaviness persist.

Anterior rhinoscopy revealed no pus, foreign bodies, masses, or polyps. There were no visible issues, such as cavities or an oroantral fistula, during the oral examination. A paranasal sinus CT scan showed soft tissue densities in the right maxillary sinuses and right ethmoid air cells, along with a blocked and enlarged right osteomeatal complex that suggested sinusitis.

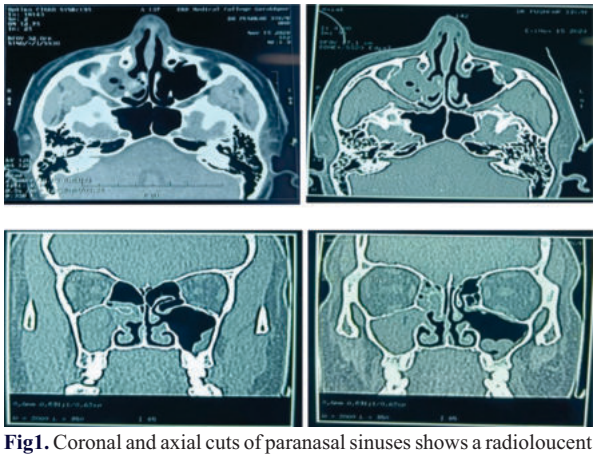
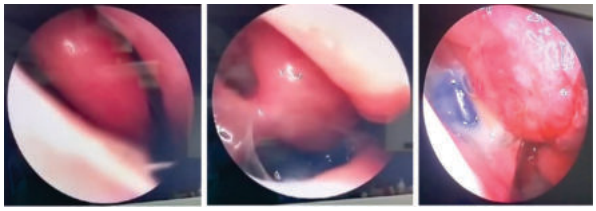


Fig1. Coronal and axial cuts of paranasal sinuses shows a radioloucent shadow at the posterior part of anterolateral wall of right maxillary sinus with sinusitis.

Nasal endoscopy was done which showed right middle turbinate hypertrophy, opening of right maxillary sinus, right frontal sinus, right enlarged ethmoid bulla and a foreign body (plastic bottle cap) in right maxillary antrum with polypoidal tissue.



Nasal endoscopy (0° endoscope) showing right middle turbinate hypertrophy fig2a. Widened maxillary ostium, enlarged bulla, opening of maxillary antrum and frontal sinus fig2b. Foreign body (plastic bottle cap) in right maxillary antrum fig2c.

Endoscopic surgery under GA was planned to remove the foreign body. Since antrum was already opened so widening of maxillary ostium by bullectomy and removal of polypoidal tissue was done but bottle cap was large and can not be taken out endoscopically through natural ostium. For a better visual representation and approach to the bottle cap, we therefore chose to use the Caldwell-Luc technique in an external approach. In the Caldwell-Luc approach, the plastic bottle cap that had been embedded in the posterior part of the anterolateral wall of the maxillary antrum was removed by creating a surgical window in the anterior wall of the maxillary sinus. After surgery, the patient was treated with antibiotics for a week. His symptoms significantly improved, and he was released from the hospital. There were no complications following surgery.

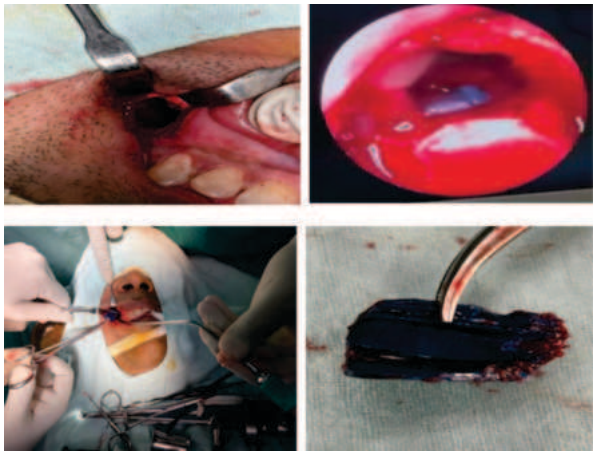


Fig3. Removal of foreign body via caldwell luc approach.

DISCUSSION

In the case of unilateral rhinosinusitis, foreign bodies in the paranasal sinuses are a crucial component of the differential diagnosis. The most common problems, when they manifest later, are suggestive of chronic rhinosinusitis.[7]. In adults, however, they are extremely uncommon and are primarily brought on by trauma, accident injuries, or associated mental disease. There have been very few reports of unusual foreign objects, such as buttons, in adults. [8]

In terms of management, maxillary sinus foreign bodies usually have a dental origin, though they can also arise from an oroantral fistula. It is typically recommended to remove any foreign bodies, even if they don't produce any symptoms, because they might irritate the mucosa and lead to sinusitis. [9] The foreign body might present in a variety of clinical ways, making it difficult for the surgeon to diagnose and perform surgery.

When selecting the most appropriate surgical technique, consideration should be given to the foreign body's size, accessibility, and anatomical proximity to neighboring critical tissues.[10] Imaging is essential to aid plan the removal of the foreign body from the facial tissues. These include of CT, ultrasound (US), planar radiography, and magnetic resonance imaging (MRI), and their application is contingent upon the foreign body's composition and location.[11]

The Caldwell-Luc treatment is the traditional surgical method for removing foreign bodies from maxillary sinuses. It entails opening the maxillary sinus's anterior wall.[12] When it comes to treating maxillary sinus pathology, endoscopic sinus surgery (ESS) has been displacing the aggressive Caldwell-Luc approach in recent decades.

Less invasive and non-traumatic, it offers the following benefits: reduced morbidity, a lower chance of tooth root damage, complete maxillary sinus visualization, a quick recovery period, and little to no chance of infraorbital nerve damage. When removing foreign bodies from the maxillary sinus anteriorly, this technique works better. Endoscopic surgery has its benefits, however, it is ineffective for removing larger foreign entities or those that are inferior or posterior. The Caldwell-Luc approach is better appropriate in these situations. To eliminate all the pieces, however, a Caldwell-Luc method in conjunction with ESS may be employed, contingent on the foreign body's position and characteristics.[5]

CONCLUSION

In the maxillary sinus, foreign bodies are uncommon. As a result of dental procedures, oroantral fistulas are the most common inocculation channel. Many diseases of the maxillary sinus, including foreign bodies, can be diagnosed and treated via radiologic imaging, particularly computed tomography. No matter what the foreign body is, even if it is asymptomatic, it must be removed to avoid a chronic infection. For treating foreign bodies and disorders of the maxillary sinuses, the endoscopic method in conjunction with the Caldwell-Luc procedure is the gold standard.

REFERENCES

1. Miloro M, Ghali GE, Larsen PE, Waite PD. Principles of Peterson's oral Maxillofacial surgery. 2th ed. São Paulo: Santos; 2009.
2. Omezli MM, Torul D, Sivrikaya EC. The prevalence of foreign bodies in jaw bones on panormaic adiography. Indian J Dent. 2015;6(4):185-9. DOI: 10.4103/0975-962X.170371
3. Liston PN, Walters RF. Foreign bodies in the maxillary antrum: a case report. Aust Dent J. 2002;47(4):344-6. DOI: 10.1111/j.1834-7819.2002.tb00549.x
4. Krause HR, Rustemeyer J, Grunert RR. Foreign body in paranasal sinuses. Mund Kiefer Gesichtschir 2002;6(1):40-4.
5. Preda, Mihai, and Codrut Sarafoleanu. "Foreign body of endodontic origin in the maxillary sinus" Romanian Journal of Rhinology, vol. 11, no. 43, Sciendo, 2021, pp. 111-117.
6. Alrasheed MA, Alhaddad MS, Almuhainy NA, Almohammedali AA. An Unusual Maxillary Sinus Foreign Body: A Case Report. Am J Case Rep. 2021 Feb 17;22:e928534. doi: 10.12659/AJCR.928534. PMID: 33596185; PMCID: PMC 7899954.
7. Tingsgaard PK, Larsen PL. Chronic unilateral maxillary sinusitis caused by foreign bodies in the maxillary sinus. Ugeskr Laeger 1997;7(28):4402-4.
8. Tay AB. Long-standing intranasal foreign body: an incidental finding on dental radiograph: a case report and literature review. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2000 Oct;90(4):546-549.
9. Sahin YF, Muderris T, Bercin S, Sevil E, Kırıs M. Chronic maxillary sinusitis associated with an unusual foreign body: a case report. Case Rep Otolaryngol. 2012;2012:903714. doi:10.1155/2012/903714. Epub 2011 Oct 13. PMID: 22953127; PMCID: PMC 3420515.
10. Morais HHA, Rocha NS, Gondim DGA, Melo AR. Foreign body in maxillary sinus: atypical case report. Rev Cir Traumatol Buco-Maxilo-Fac. 2007;7(1):65-70.
11. Casanova FHC, Mello Filho PAA, Nakanami DM, Manso PG. Intra-orbital organic foreign body: tomographic evaluation and conduct. Arq Bras Oftalmol. 2001; 64: 297-301. https:// doi.org/10.1590/S0004-27492001000400005
12. Pagella F, Emanuelli E, Castelnuovo P (1999) Endoscopic extraction of a metal foreign body from the maxillary sinus. Laryngoscope 109: 339-342.