

Penetrating foreign body in the maxillary sinus and pterygopalatine fossa: Report of a rare case.

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Citation

A M., A B., S Tandon, O Souza. *Penetrating foreign body in the maxillary sinus and pterygopalatine fossa: Report of a rare case.* The Internet Journal of Head and Neck Surgery. 2009 Volume 4 Number 1.

Abstract

Foreign bodies may present in the paranasal sinuses through a variety of traumatic and iatrogenic events. Endoscopic and open approaches have been described in literature for retrieval of the foreign bodies. We describe a case where a high velocity blunt foreign body penetrated anterior and posterior wall of maxillary sinus lying close to the internal maxillary artery. We also reviewed the two surgical approaches, endoscopic and open, for the removal of sinus foreign bodies.

INTRODUCTION

Foreign bodies in the para nasal sinuses are not common.¹ Maxillary sinus foreign bodies account for about 50% of the foreign bodies in the paranasal sinuses. They can be classified as either traumatic or iatrogenic.² Traumatic foreign bodies include air gun pellets, pieces of glass, stones, wood, while iatrogenic foreign bodies include whole teeth, roots of teeth, dental cement, pieces of broken forceps, impression paste, gutta percha, etc. The routes of entry are usually a) the lower eyelid, b) the lateral wall of the nose, c)

the cheek, and d) the mouth. Occasionally the site of entry may be quite inconspicuous.³ We present a case of penetrating foreign body in the maxillary sinus and pterygopalatine fossa.

CASE REPORT

A 38-yr-old man, a watchmaker by occupation, came to the emergency medicine department with a history of having sustained an injury to his face at his workplace. He claimed that, the base of the wristwatch he was working on with a pick, bounced off the table at high speed toward his cheek.

Figure 1

Figure 1: Clinical picture of the patient showing entry wound after suturing.



On examination, an oblique lacerated wound, about 4cm in length, was seen on the left cheek just above the nasolabial fold and in line with the canine fossa. The external wound on the left cheek had been sutured at another hospital. Diagnostic nasal endoscopy and oral cavity examination were normal.

Paranasal sinus X-Ray revealed an oval radio opaque foreign body in the left maxillary sinus. Computerized Tomography scan of the sinuses showed the foreign body had penetrated the posterior wall of the left maxillary sinus and was partially lying in the pterygopalatine fossa.

Figure 2

Figure 2: Lateral scout computed tomogram showing the foreign body



Figure 3

Figure 3: X ray Waters view showing the foreign body



Under general anesthesia a left sided Caldwell Luc approach was done. After removal of clots, a foreign body, a metallic

watch base was found to be impacted in the posterior wall of the left maxillary sinus. Removal was difficult as the foreign body was tightly impacted and was not easy to grasp with regular surgical instruments due to its smooth circular edge. Only repeated rocking movements and the use of leverage around the edges finally allowed the foreign body to come through into the sinus. Following removal, the hemorrhage in the pterygopalatine fossa was controlled with pressure. Intra nasal antrostomy was done and the sinus was packed with a medicated ribbon gauze pack. The Caldwell Luc incision was closed in layers. The postoperative period was uneventful and patient was discharged after 2 days on antibiotics. No post operative complications have been observed with a follow up of 3 years.

DISCUSSION

The natural history of foreign bodies in the paranasal sinuses is only anecdotal and is truly unknown.⁴ Introduction of foreign bodies to the paranasal sinuses may occur through a variety of traumatic or iatrogenic events.² Foreign bodies in the paranasal sinuses must be removed surgically, even when they are asymptomatic.⁵ Mladina believes that metal foreign bodies should always be removed from the paranasal sinuses in order to prevent any theoretical or practical possibility of the development of chronic irritation or even malignant mucosal alteration.⁶ Reported sequelae include chronic sinusitis, cutaneous fistula, rhinolith formation and chronic pain.⁴ Metallic foreign bodies have been associated with malignancies, and when the metal is lead there is an increase risk of lead poisoning, particularly in children.⁷

Orthopantomogram together with the Waters and lateral skull views are useful imaging tools in diagnosing a foreign body. Computed tomography is used to detect the presence of foreign body, whereas MRI scanning may be necessary in the detection of organic foreign bodies since MRI is superior to CT in soft tissue imaging.^{3, 8}

The classical surgical technique for removal of foreign bodies in the maxillary sinus is the Caldwell-Luc procedure.⁵ Open approaches are better suited in case of large foreign

bodies or when it is impacted as in our case. The endoscopic transnasal approach has been successfully used for retrieval of a variety of foreign bodies in the paranasal sinuses.⁹ Reported advantage of the endoscopic approach, when compared to Caldwell-Luc procedure includes decreased morbidity, non invasiveness, decreased risk of injury to tooth root and the ability to visualize the sinus.^{4, 5} However, depending on the nature and location of the foreign body combined approach may be necessary for removal of all the fragments².

CONCLUSION

Sinus foreign bodies are rare findings. When they are discovered, even if asymptomatic, there is an indication for their removal. Foreign bodies in the paranasal sinuses vary in their size and location. Hence the surgeon must be familiar with the different approaches for removing them.

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