

CASE REPORT

Maxillary antrolith: A case report

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ABSTRACT

Introduction: Formation of calcified bodies in various organs is not uncommon but their occurrence in maxillofacial region is not a routine. Maxillary antrolith refers to a mineralized mass in the maxillary sinus either of exogenous or endogenous origin. **Case Report:** A case of maxillary antrolith in a 65-year-old edentulous male is presented here who complained of nasal blockage, headache and recurrent attacks of common cold from past many years. Computed tomography revealed right maxillary antrolith formation. Surgical exploration of the maxillary sinus was done and the calcified mass was removed. Histopathological analysis revealed a calcium deposition around a necrotic mass.

Keywords: Antrolith, Sinolith, Maxillary Sinus, Supernumerary tooth

INTRODUCTION

Antroliths are uncommon calcified masses found in maxillary antrum. These mineralized bodies have been variously described as rhinoliths, antral stones, antroliths, sinoliths, maxillary sinus stones¹ and antrorhinoliths². The term “maxillary antrolith” was introduced by Bowerman³ in 1969.

A maxillary antrolith is the result of complete or partial encrustation of an antral foreign body usually of endogenous but occasionally of exogenous origin³. If the central core arises around body tissues, it is of endogenous origin and called true type². Tooth and tooth root, bone fragments, sequestra, dried blood clots, pus, mucus and fungi are considered endogenous⁴.

If the central core originates outside the body, it is of exogenous origin and classified as false type².

Exogenous nidus include cotton cellulose, paper, bead, button, vegetable/bean pieces, fruit seeds or snuff⁵. Precipitating factors besides the nidus, such as long-standing chronic inflammation associated with poor sinus drainage, deposition of salts and enzymatic activities of bacterial pathogens are needed for the formation of an antrolith. Time is another important factor needed for antrolith formation¹.

CASE REPORT

A 65-year-old edentulous male patient reported to department of Oral and Maxillofacial Surgery with chief complaint of dull, intermittent pain in upper right molar region, nasal blockade, headache and recurrent attacks of common cold from past many years. There was

no previous history of trauma to face, epistaxis or any associated ear discharge. He was a non-smoker and a farmer by occupation. Patient got his upper teeth extracted in the right posterior region because of the pain but there was no relief in symptoms.

His medical and family histories were unremarkable. On intraoral examination, no obvious swelling was seen in the maxilla, alveolus or buccal vestibule. The alveolar mucosa was normal in colour and texture. Extraoral examination revealed no abnormality. There was no associated paraesthesia of the infraorbital nerve.

Laboratory investigations revealed no alterations in calcium, phosphate and alkaline phosphatase levels. On paranasal sinus view, no relevant finding was apparent (figure 1). A clinical diagnosis of chronic maxillary sinusitis was made and a CT scan was requested in order to reach a definitive diagnosis to determine the cause of pain. (Figure 1) Paranasal sinus view The scan (figure 2) revealed a radiopaque ovoid structure with irregular calcific rim measuring 1.0×1.0 located in right maxillary sinus adjoining the posterolateral wall. There was neither bony destruction present nor structural deformity in any of the sinus walls. Final radiographic diagnosis of chronic maxillary sinusitis & antrolith was made & a case was planned for the surgical removal of antrolith. (Figure 2) CT scan showing calcified mass Under local anaesthesia, a vestibular incision was given extending from the canine to the first molar. A full thickness mucoperiosteal flap was elevated and bone window was created in thin labial wall in canine region allowing an appropriate visualization and direct access to the calcified mass. The fiberoptic light source was used to locate, identify and facilitate the removal of the antrolith from posterolateral wall where it was found lying superficially embedded in the mucosal secretions. The sinus lining was found necrotic and was removed along with the antrolith.

The specimen was placed in 10% formalin and was sent for histopathological examination. No active haemorrhage was encountered from the sinus cavity, therefore, obviating the need for the sinus packing and nasal antrostomy.

Lavage was done using normal saline and the bony sinus was carefully looked for any remains of necrotic lining which was removed thereafter. Surgical closure of the site was done using 3-0 silk suture, with simple, interrupted technique.

Patient was kept on post-operative medications that included an antimicrobial (amoxicillin+clavulanic acid 625mg twice daily), antihistaminics (cetirizine 5mg twice daily), nonsteroidal anti-inflammatory and analgesics (paracetamol thrice daily) and decongestants nasal drugs (xylometazoline twice daily) for seven days.

Specimen was sent for histopathological examination. The studies showed calcium deposition around a necrotic mass. The pathology report revealed the masses to be antroliths.

The chemical analysis revealed fragmented bits of pseudostratified ciliated columnar epithelium overlying a connective tissue with abundant inflammatory cells. On the regular follow-up visits, patient was relieved of pain & reported marked improvement in the nasal patency as there was stoppage of foul nasal discharge after the procedure. (Figure 3) vestibular incision with exposure of anterolateral wall (Figure 4) surgical window created in canine fossa (Figure 5) calcified mass removed (Figure 6) specimen placed in formalin (Figure 7) surgical closure

DISCUSSION

Antroliths are calcified bodies within the antral cavity. The term rhinolith was first coined in 1845 to describe a partially or completely encrusted foreign body in the nose⁶. The occurrence of true antroliths is very rare. The most commonly involved sinus is the maxillary sinus, followed by the frontal sinus⁷.

The majority of the patients with maxillary antroliths in the literature have symptoms or clinical signs that may include pain, nasal stuffiness and obstruction, epistaxis, foul intraoral

discharge, postnasal drip, tenderness over the involved sinus and oro-antral fistula^{1,5}, foul smelling discharge, facial pain, sinusitis⁸.

The radiographic features of antroliths vary in size, density, and outline. They can be of any size. Their consistency varies from homogenous or heterogenous density. The outline may be rugged or smooth, and the shape may be round, oval or irregular⁹. They are occasionally accompanied by antral mucosal swelling, fluid, and polyps⁵. The radiological diagnosis of antrolith has been made by using plain films of the paranasal sinuses, dental periapical films and panoramic X-rays, computed tomography and magnetic resonance imaging¹⁰.

In this case report, a paranasal sinus view revealed no relevant finding. CT scans were used to accurately determine the cause of pain, size and site of the antroliths.

Histologically, antroliths usually show concentric rings like those seen in stones found in other parts of the body. Chemical analyses show that these calculi contain various amounts of calcium phosphate, calcium carbonate, calcium oxalate, albuminous material, magnesium phosphate, organic matter and water. The consistency varies from hard and friable to soft, porous, or crumbly. Stones are frequently covered with granulation tissue with a rich blood supply. Color varies from black to gray, brown or white¹¹.

Clinical differential diagnosis of antral radiopaque areas should include displaced or ectopic tooth fragments, calcified mucous retention cyst, mycoliths, cementoma, calcified polyps, osteoma, osteoblastoma, odontoma, bone cysts, rhinoliths, primary or metastatic carcinoma, osteogenic sarcoma, fibrous dysplasia, calcifying epithelial odontogenic tumor, fungal infection with secondary calcification, and foreign bodies^{1,3,5,12}.

CONCLUSION

Although rare, maxillary sinusitis with or without antrolith should be considered in the list of differential diagnosis of pain of maxillofacial region. The advanced diagnostic aids like the CT scans cannot be overemphasized in such scenarios. The surgical removal of the antrolith is a reliable procedure which also provides drainage of sinuses, thereby attaining marked clinical improvement in signs and symptoms.

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