Maxillary Antrolith: A Case Report

Maksiller Antrolit: Olgu Bildirimi

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ABSTRACT

Maxillary antrolith is a mineralized mass very rarely found in the maxillary sinus formed by exogenous or endogenous origin. In this report, a case of a 35-year-old male with antrolith within left maxillary sinus is presented. It was asymptomatic and diagnosed incidentally on a panoramic radiograph during routine dental examination. The etiology, clinical and radiographic aspects and differential diagnosis of antrolith are also discussed.

ÖZET


KEYWORDS

Maxillary antrolith, panoramic radiography, computed tomography

ANAHTAR KELİMELER

Maksiller antrolit, panoramik radyografi, bilgisayarlı tomografi
INTRODUCTION

Antroliths are uncommon calcified masses found in the maxillary antrum. These mineralized bodies have been variously described as rhinoliths, antral rhinoliths, antral stones, antral calculi, antroliths, sinoliths, maxillary sinus stones and antrorhinoliths. The term “maxillary antrolith” was introduced by Bowerman in 1969 to facilitate their classification and description that calculi found within the maxillary sinuses.

A maxillary antrolith is the result of complete or partial encrustation of an antral foreign body usually of endogenous but occasionally of exogenous origin. If the central core arises around body tissues, it is of endogenous origin and called true type. Tooth and tooth root, bone fragments, sequestra, dried blood clots, pus, mucus and fungi are considered endogenous. If the central core originates outside the body, it is of exogenous origin and classified as false type. Exogenous niduses include cotton cellulose, paper, bead, button, vegetable/bean pieces, fruit seeds or snuff. However, any material in the maxillary antra can act as a potential nucleus for the deposition of salts, the pathogenesis of stone formation within a paranasal sinus is still not completely understood. 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 for antrolith formation, and most authors speculate that several years are required for a foreign material to become encrusted.

The purpose of this article is to report a case of antrolith which was asymptomatic and diagnosed incidentally on a panoramic radiograph during routine dental examination. The etiology, clinical and radiographic aspects and differential diagnosis of antrolith are also discussed.

CASE REPORT

A 35-year-old male patient was referred to the Department of Oral Diagnosis and Radiology, Faculty of Dentistry, University of ... for routine dental care. His medical and family histories were unremarkable. Extraoral examination revealed no abnormality.

An intraoral examination showed that left and right mandibular first molar and right maxillary first molar teeth were absent because of previous extraction. The patient had several amalgam fillings, left maxillary second molar had recurrent caries and right lower second molar had an inadequate filling. His oral mucosa was normal. A routine panoramic radiograph revealed circumscribed, mixed lesion (radiopaque-radiolucent) a measuring approximately 1x1 cm within the left maxillary sinus antrum (Figure 1). The radiopaque mass was not associated with roots of the teeth, producing no apparent defect in the sinus walls. The provisional diagnosis after radiographic examination was antrolith. When the patient was questioned about this lesion, he denied any knowledge or symptoms. During the extraoral examination, palpation over the paranasal sinuses did not elicit pain. Intraoral examination did not reveal swelling in the maxilla or buccal sulcus. A differential diagnosis would include radiopaque bony lesion such as exostose, bony nodule, calcified polyp, osteoma, odontoma, odontogenic and osteoblastic tumor.

A CT was requested in order to reach a definitive diagnosis, determine the localization of the lesion accurately and see its relationship with the surrounding anatomical structures. The CT scan (Figure 2) revealed the image of an ovoid structure with irregular calcific rim measuring 1.0x1.0 located in the left maxillary sinus in conjunction with bilateral maxillary retention cysts, the thickened mucosa of the sinus and obliteration of the left maxillary sinus. There was neither bony destruction, nor structural deformity in the sinus walls. Final diagnosis was antrolith. The patient was referred to the otolaryngologist for surgical removal of the antrolith. Because the patient had no clinical symptoms, he declined the surgical therapy. He did not return for clinical and radiological follow-up.
The majority of 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, foul-smelling discharge, facial pain, sinusitis. However, few cases of asymptomatic antroliths discovered incidentally on routine radiographic examination have been reported, as in our case.

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, and sometimes showing alternating laminations of radiolucent and radiopaque material. The outline may be rugged or smooth, and the shape may be round, oval or irregular. They are occasionally accompanied by antral mucosal swelling, fluid, and polyps. 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 imaging. In this case report, a panoramic radiograph revealed round, hyperdense mass in the left maxillary sinus and we diagnosed an asymptomatic antrolith incidentally by examining panoramic radiographic image. CT scans were used to accurately determine the size and site of the antroliths. In addition, the
CT scan proved helpful in identifying maxillary antrolith and it also revealed bilateral maxillary retention cysts, the thickened mucosa of the sinus and obliteration of the left maxillary sinus.

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 white4,8.

Clinical differential diagnosis of antral radiopaque areas should include displaced or ectopic tooth fragments, calcified mucous retention cyst, mycoliths, antroliths, cementoma, calcified polyps, osteoma, osteoblastoma, odontoma, rhinoliths, bone cysts, primary or metastatic carcinoma, osteogenic sarcoma, fibrous dysplasia, calcifying epithelial odontogenic tumor, fungal infection with secondary calcification, and foreign bodies1,3,6,14,15. Although the accurate treatment of antroliths should be surgical removal of the stone, the patient in our case rejected the treatment and we could not perform pathologic examination and chemical analysis of the antrolith.

Panoramic dental radiographs remain one of the most frequently used radiographic methods for dental planning. Experience indicates that panoramic radiographs can be very useful in assisting the dentist with a number of specific diagnostic tasks, particularly when broad coverage of the maxilla and mandible is desirable. With the increased use of panoramic radiography in screening, there are likely to be more incidental findings of antroliths.

REFERENCES


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