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Case Report

Giant tonsillolith: A rare oropharyngeal entity

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ABSTRACT

Tonsilloliths or calculi of the tonsil are calcifications that are found in the crypts of the palatine tonsil or adjacent areas. Small concretions may be asymptomatic while large tonsilloliths may elicit symptoms such as halitosis, sore throat, tonsillitis, odynophygia, dysphagia and referred otalgia. We present a rare case of an 18-year-old female who presented with multiple decayed teeth and an asymptomatic giant tonsillolith (2.2 × 1.9 × 1.6 cm) in her right tonsil that was discovered accidently. The pertinent literature has been reviewed.

1. Introduction

Tonsilloliths, otherwise also known as tonsillar concretions or simply liths, are stones that arise as a result of calcium being deposited on desquamated cells and bacterial growth in the tonsillar or adenoidal crypts [1]. They may be observed in patients with or without a history of inflammatory disorders of either the tonsils or adenoids [2]. Small concretions in the tonsils are not rare, but a giant tonsillolith is quite uncommon. The first description of a tonsillolith was by Lang in 1560 [3]. The most common age of presentation for tonsilloliths ranges between 10 and 77 years, with a mean age of 50 years [2]. No gender predilection has been reported. The presenting symptoms in such patients usually are irritable cough, sore throat, halitosis, foul taste, tonsillitis, dysphagia, odynophagia or foreign body sensation in the throat [1].

However, patients with tonsilloliths may also be asymptomatic, with the liths discovered incidentally on pantomographic or lateral cephalometric radiographs [4]. Such radiographic images commonly are superimposed with hard and soft tissue structures, thereby creating a diagnostic challenge. This mandates the consideration of several possibilities of radiopacity in the mandibular molar-ramus region such as sialolith, tonsilith, phlebolith, calcified lymph node, carotid artery arteriosclerosis, stylohyoid ligament ossification, and dystrophic calcification in acne scars [1]. These entities can be differentiated by the radiographic features and locations.

Clinically, a superficial tonsilith may be seen as a white or yellowish hard mass within the tonsillar crypt. However, a tonsillolith may also have a deeper location and present as an enlarged or calcified mass within the tonsil [5]. Tonsilloliths can be multiple and may vary in size from small to very large.

We present a case of a giant tonsillolith in the right palatine tonsil of an 18-year-old female that was discovered incidentally during a dental visit for restoration of multiple carious teeth. The management of the tonsillolith has been described and pertinent literature reviewed.

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2. Case presentation

An eighteen year old female reported to the School of Dental sciences, Sharda University, Greater Noida, Uttar Pradesh, India with a complaint of multiple carious teeth and bad breath. Her medical history was insignificant for recurrent throat infections, dysphagia or otalgia. A panoramic radiograph was made which showed as an incidental finding of a single large radiopacity on the mid portion of right mandibular ramus, in the region where the image of the dorsal surface of the tongue crossed the ramus in the palatoglossal air spaces. Fig. 1 Oral examination revealed multiple carious teeth and an inflamed right tonsil showing a grayish white mass with a pitted rough surface embedded in the tonsillar tissue. Fig. 2 On palpation, the mass was stony hard and non-tender. The rest of the ear, nose and throat examination did not reveal any abnormality. There was no cervical lymphadenopathy. A clinical diagnosis of a palatine tonsillolith was made. An ultrasound examination of the submandibular salivary glands, gallbladder and kidneys did not reveal any evidence of lithiasis. A cone beam computerized tomography (CBCT) scan revealed the tonsillolith measuring 2.2 × 1.9 × 1.6 cm. Figs. 3 and 4 The patient was then referred to the Department of Oral and Maxillofacial Surgery for management of the tonsillolith. The patient provided written informed consent to the procedure proposed to remove the tonsillolith under local anaesthesia. An attempt was made to dislodge the stone from the right tonsil under local anaesthesia using 2 ml of lignocaine hydrochloride with 1:80000 adrenaline bitartrate solution. A curved haemostat was spread out around the tonsillolith and it was dislodged from the tonsil. The tonsillolith was delivered as multiple fragments due to its fragility. The tonsillolith was greyish white in colour with a pitted rough surface. Fig. 5 The tonsillar crypts were irrigated with 0.2% chlorhexidine solution. The patient was prescribed antibiotic cover (Cefotaxime 200 mg oral tablet, twice a day) for 5 days post operatively along with an antiseptic mouthwash (0.12% chlorhexidine mouthwash thrice a day) for 5 days and an anti inflammatory (Ibuprofen 400 mg thrice daily) for three days. Thereafter, the patient was advised to use the chlorhexidine mouthwash once a week for one year, while warm saline mouthwash was advised daily and oral prophylaxis was carried out quarterly over a year. The postoperative period was uneventful and the tonsillar inflammation disappeared in a week. The patient was then referred to a restorative dentist for further dental treatment. One year after, there was no evidence of recurrence of the tonsillolith.

3. Discussion

Tonsilloliths or tonsil stones are calcified bodies that are packed with bacteria and organic debris [4]. Chronic inflammation of the tonsils results in dystrophic calcification in the crypts of the palatine tonsils. They are usually single and unilateral, but occasionally they may be multiple or bilateral. They are composed of saliva or inflammatory exudate derived calcium salts such as hydroxyapatite or calcium carbonate apatite, magnesium salts, oxalates and occasionally ammonium radicals.

They are usually small in size, measuring a few millimetres. Large tonsilloliths are usually discovered in routine panoramic radiographs, where they may appear as radiopaque masses that overlap the mandibular ramus. However, large tonsilloliths measuring more than 3 cm have also been reported [6]. However, the definitive diagnosis of a tonsillolith is made by computed tomography (CT),

Fig. 1. Orthopantograph showing a right mid ramus level large radio-opacity.

as ghost images of unilateral tonsilloliths may appear on panoramic radiographs owing to natural rotation of the panoramic radiographs. In this case, a CBCT provided hyperdense images in the oropharyngeal space and precisely located the tonsillolith. The tonsillolith was dislodged from the tonsil and no further treatment was carried out as the tonsil remained asymptomatic.

Differential diagnoses that must be considered in case of a tonsillolith may be prominent pterygoid hamulus, large maxillary tuberosity, intraosseous abnormalities of the mandibular ramus, phleboliths, lymph node calcifications, foreign bodies, displaced tooth, osteoma, calcified granulomas, calcified malignancies scrofulas, tuberculosis, isolated bone/cartilage derived from embryonic rests and an elongated styloid process [7].

The exact pathogenesis of tonsilloliths is not clear. It has been proposed that they originate as a result repeated tonsillitis which leads to fibrosis of ducts of crypts followed by retention of epithelial debris [7]. This epithelial debris forms the ideal media for the growth of microbes such as bacteria, actinomyces and fungi [8]. Finally, dystrophic calcification results from deposition of inorganic salts from the saliva secreted in the mouth by major and minor salivary glands.

In about 3% of cases, tonsilloliths are associated with kidney stones, gall stones and wharton's duct stones, suggesting that tonsillolithiasis could be a part of the lithogenic diathesis [9]. In this case ultrasound of the kidney, gall bladder and submandibular salivary glands ruled out the possibility of lithogenic diathesis.

Tonsilloliths have the potential to cause worrisome oral halitosis. Foul smelling compounds such as volatile sulfur compounds and sulfur derived gases are produced as a result of bacterial metabolism within the tonsillolith biofilm [10]. In this case, halitosis was one of the reasons to seek oral healthcare. The halitosis promptly disappeared after removal of the tonsillolith and restoration of teeth.

A literature review on the recurrence rate of treated tonsilloliths revealed only one case of recurrent palatine tonsillolith [11], although the cause for recurrence was not clear. Our case did not have a recurrence probably due to maintenance of oral hygiene through the daily warm saline mouthwash and quarterly oral prophylaxis regimen. Such a strategy must be part of the post operative care in such cases considering the bacterial aetiology in the causation of tonsilloliths.

4. Conclusion

It is important to carefully observe the panoramic radiographs to detect dystrophic calcifications and further confirm the diagnosis with a CBCT scan to precisely locate and diagnose a tonsillolith. Management must involve stone removal with the involved soft tissue treated on the basis of symptoms and related pathologies. Failure to identify and treat a tonsillolith may lead to failure of the oral

Fig. 2. Intra oral view showing a whitish-grey solid mass at the right palatine tonsil.

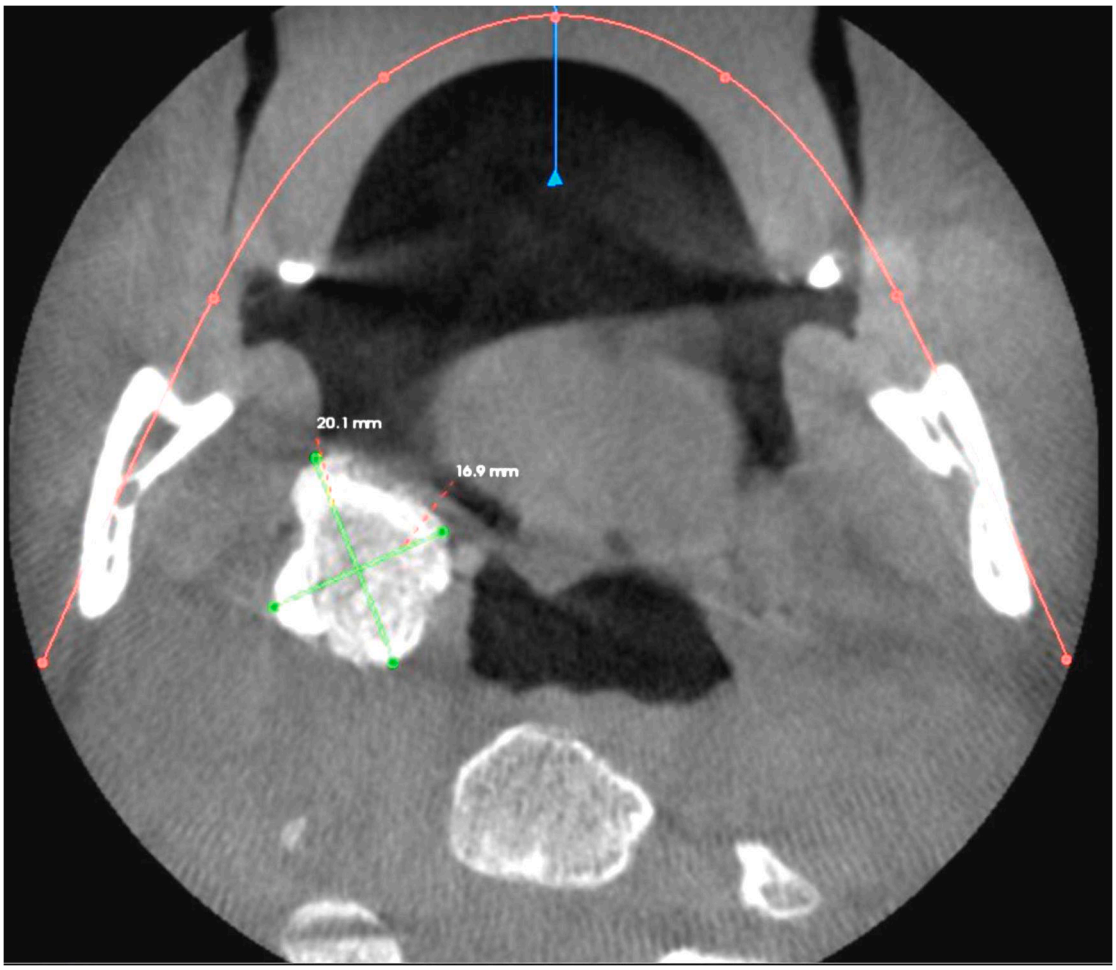

Fig. 3. Axial section of CBCT showing the position and dimensions of the tonsillolith.

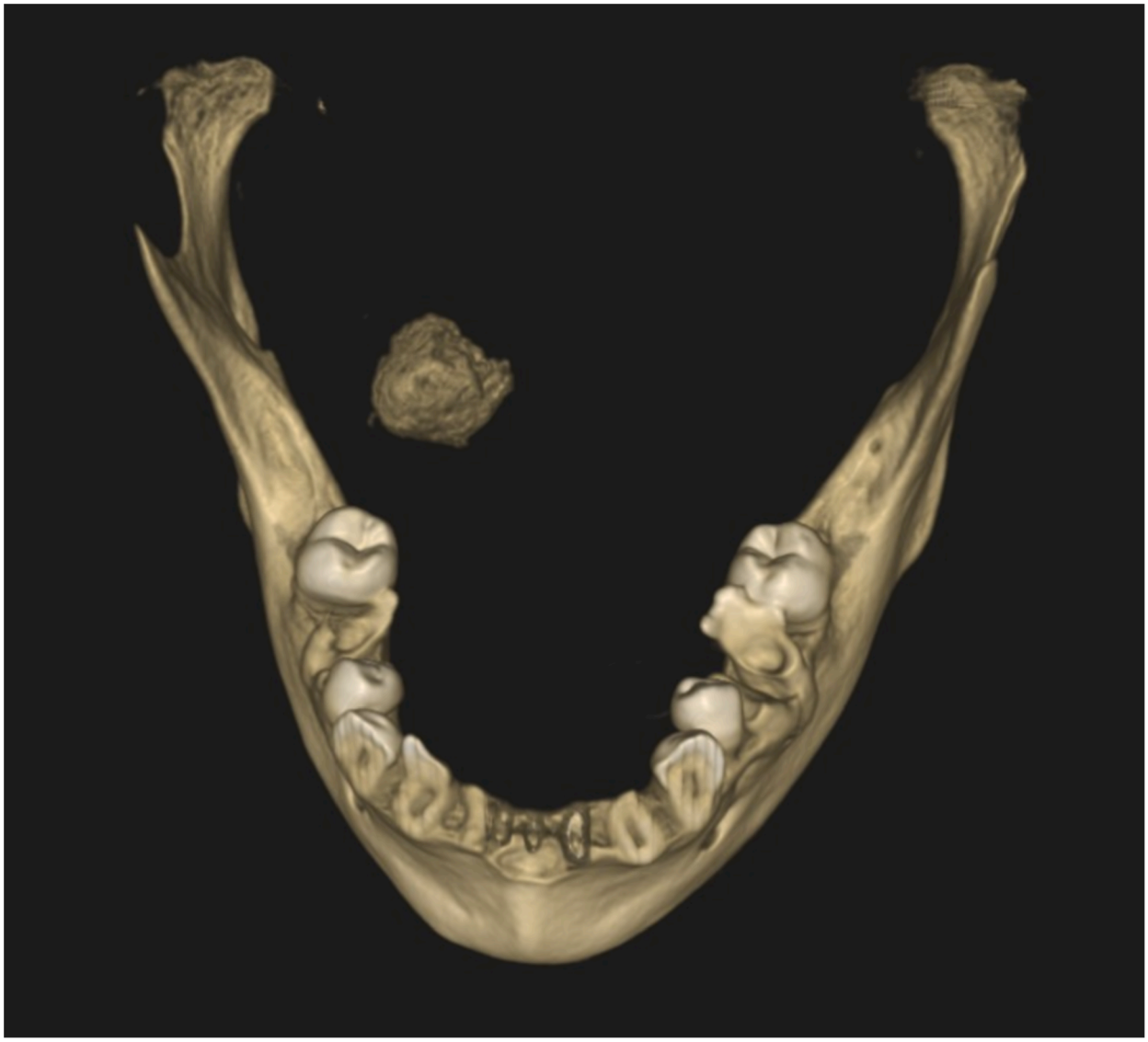

Fig. 4. 3-Dimensional image reconstruction of CBCT showing the tonsillolith.

healthcare provider in treating problems such as halitosis or other complications related to the continued presence of the tonsillolith, in spite of restorative treatment of teeth.

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Article approval

All authors approve.

Declaration of competing interest

None.

Fig. 5. Tonsillolith removed in fragments.

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