

Unilateral Tonsillolith: A Serendipitous Finding

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ABSTRACT

Background: Tonsilloliths are calcified structures which develop in enlarged tonsillar crypts. Large tonsilloliths are related with various signs and symptoms and are frequently asymptomatic. Panoramic radiographs and axial computed tomography (CT) scans reveal unexpected signs of calcifications.

Summary: A 62 years old male patient with no underlying medical problem had been referred to the Department of Oral and maxillofacial surgery for extraction of periodontally compromised posterior teeth for patient preparation to receive a complete denture. Investigation with an orthopantomogram revealed a large calcified mass which upon biopsy revealed calcifications composed of phosphate, calcium, carbonate, magnesium, mixtures of organic matter, epithelial debris and bacteria. The exact etiology and pathogenesis of such concretions is unknown. Radiographically, tonsilloliths appear as multiple, small, ill-defined radiopacities. Differential diagnosis may be Phleboliths, Lymph node calcifications, Scrofula, tuberculous lymphadenitis, and anatomical structures like elongated styloid process. Associated complications are uncommon. The clinical need of the patient in this case had lead to the surgical removal of the same. Single large tonsilloliths are removed surgically even if they are asymptomatic.

Conclusion: Unilateral or bilateral tonsilloliths are an extremely uncommon finding. Abscessified peritonsillar accumulations may be a cause of ectopic calcifications. When in doubt, advanced imaging techniques may prove valuable in establishing a definitive diagnosis.

Keywords: Tonsilloliths, Radiographs, Calcifications

INTRODUCTION

Tonsilloliths are calcified structures which develop in enlarged tonsillar crypts and are packed with bacteria, fungi such as *Leptothrix buccalis*^{1,2} along with organic debris. Such structures are relatively uncommon.³ Large tonsilloliths can cause bouts of sore throat, dysphagia, bad taste and odour, otalgia and a foreign body sensation upon swallowing. Frequently, they are totally asymptomatic.⁴

Since these are asymptomatic, it is often during routine radiographic investigations like panoramic radiographs that their existence is discovered. The axial computed tomography (CT) scan, in the head and neck region, serves as another source for unexpected signs of calcifications in the palatine tonsil.⁵

Present article presents a case report of serendipitous finding of a unilateral tonsillolith.

CASE REPORT

A 62 years old male patient with non-contributory systemic history reported to the Department of Prosthodontics, A.B. Shetty Institute of Dental Sciences, Mangalore, India for getting "artificial" teeth in the form of denture. On gross intra-oral examination it was found that the patient was edentulous as related to the mandibular arch but had three upper right posterior teeth with weak periodontal support. Therefore, the patient was referred to the Department of Oral and Maxillofacial Surgery, ABSIDS, for extraction of the same. There was no underlying medical problem.

It was there that a methodical examination of the oral cavity revealed a white "hard" mass related to the lower left alveolar region (Fig. 1). Investigation with an orthopantomogram also revealed a large calcified mass (Fig. 2). The patient was otherwise absolutely normal with no history of dysphagia or halitosis. Such a massive calcification was suspected to be a tonsillolith as the chances of a tumour in this region were



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Figure 1: Examination of the lower left alveolar region revealing a white “hard” mass.

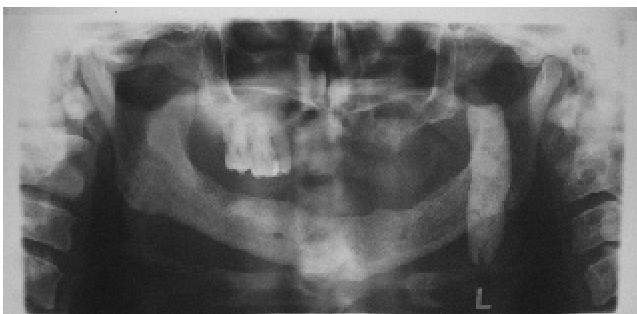


Figure 2: Orthopantomogram revealing a large calcified mass.



Figure 3: Exposure of the mass under Inferior Alveolar Nerve block.

rare. Since the alveolar ridge had to be prepared to receive an acrylic denture and the calcified mass would be an obstruction it was decided to remove the mass and send for biopsy (Fig. 3 to 4).

In order to remove the mass, an inferior alveolar nerve block (IANB) was given in the area of concern. The incision was placed over the mass as determined radiographically as well as clinically and was extended to the anterior border of the ramus. After the exposure of the mass with the dissecting



Figure 4: En-masse removal of the calcification to be sent for biopsy.

scissors, it was removed from its position. Since it was a “single” piece of calcification, it came out without any undue trauma to the surrounding area. Simple interrupted sutures were placed at the surgical site for closure of the same. The excised mass was of 5.5 X 1.5 cm in dimensions (Fig. 6 and 7), a rather large tonsillolith than reported by clinicians.² Such a large mass is a very uncommon finding.



Figure 5: Observation after four days of the excision. Sutures are present without any complications.



Figure 6: The excised mass was of 5.5 X 1.5 cm in dimensions, an uncommonly large calcification.



Figure 7: The excised mass in transverse section.

The microscopic examination revealed calcifications composed of phosphate, calcium, carbonate, magnesium, mixtures of organic matter, epithelial debris and bacteria. The radiographic and biopsy report along with the specific location of the concretion lead us to diagnosing it as tonsillolith. The patient was recalled for observation four days after the excision of the mass was done and the presence of tonsillolith was confirmed (Fig. 5). Unfortunately, the patient did not report in person for a post-operative check-up per se. The patient had to move out of the town for personal reasons.

DISCUSSION

Anatomically, three principal groups of tonsils surrounding the upper end of the pharynx have been mentioned in the literature. They are the palatine tonsils, located on the lateral pharyngeal wall, the pharyngeal tonsils popularly called adenoids, found in the posterior pharyngeal wall, and the lingual tonsils present in the base of the tongue.⁶ These tonsils comprise the 'Waldeyer's ring'.

In the present clinical case, the conventionally used term 'tonsil' refers to the palatine or faucial tonsils. These structures are located on either side of the oropharynx, typically between the palatoglossal fold and the palatopharyngeal fold. When seen histologically, a tonsil consists of a lymphoid tissue mass containing follicles with germinal centers.⁷ Stratified squamous epithelium lines the crypts present on the surfaces of the tonsils. The occasional presences of foci of ciliated epithelium are sometimes appreciated.

Lang in 1560, has been credited for describing the concretions in the oropharynx.⁸ Although the exact etiology and pathogenesis of such concretions is unknown, recurrent tonsillar inflammation and / chronic infection leading to calcification of the contents of follicular cysts, or from calcification of food debris has been proposed to be major factors in the development of the same. Dislodgement of foreign bodies in the tonsillar crypts like tablets or capsules has also been associated as possible etiologic factors. The

occurrence of tonsillar concretions is unusual in children. Pruet and Duplan⁹ have reported an equal sex distribution. Based upon various published cases, the mean age of occurrence is 46.2 years with an age range of 16 to 77 years.¹⁰⁻¹³ Tonsilloliths have also been shown to occur twice as commonly in males than in females and more often affect the right tonsil than the left.

Patients with tonsilloliths may be asymptomatic and their tonsilloliths discovered incidentally on dental or soft tissue radiographs as was in the present case. Clinical examination shows a white or yellowish hard object within the tonsillar crypt. Tonsilloliths are composed primarily of calcium and other minerals such as phosphorus, ammonia, carbonate and magnesium. The calcium salts are calcium hydroxyapatite ($\text{Ca}_{10}[\text{PO}_4]_6\text{OH}_2$) and calcium carbonate apatite ($\text{Ca}_{10}[\text{PO}_4\text{CO}_3\text{OH}_6]_6[\text{OH}]_2$).⁹

On the panoramic radiograph, tonsilloliths commonly appear as multiple, small, ill-defined radiopacities. The image of single or multiple radiopacities tends to overlap the mid-portion of the mandibular ramus in the region where the image of the dorsal surface of the tongue crosses the ramus.¹⁴ The patient's need for alveolar ridge preparation and the excisional biopsy in the present case had itself ruled out the need for advanced radiographic Computed Tomography (CT) scan.

Radiographically, tonsilloliths should be distinguished from pathological calcifications of arteries, lymph nodes and salivary glands; anatomical structures of the pharyngeal region such as a prominent hamulus of pterygoid, an elongated styloid process and a large maxillary tuberosity. A displaced mandibular third molar may radiographically mimic a tonsillolith.⁷

The differential diagnosis considered in the present case other than specified above were *Phleboliths* which are calcified thrombi and are often found in association with hemangiomas. Phleboliths can be seen in the anatomic area occupied by the masseter muscle and mandibular ramus. However, no swellings marking the existence of a hemangioma were observed in the present case. *Lymph node calcifications* represent another process that entered into the differential diagnosis. *Scrofula, tuberculous lymphadenitis*, is often hallmarked by multiple calcifications that involve the cervical chain of lymph nodes. Tuberculosis and other granulomatous diseases that may involve the cervical nodes were eliminated by the absence of any medical history or symptomatology indicating their existence. In addition, the calcifications seen in this case do not follow the anatomic configuration of a cervical node chain.

The differential diagnosis also must include the presence of anatomic structures such as an elongated styloid process, calcification of the stylohyoid apparatus or even a prominent hamular process. Arterial calcifications and foreign bodies also must be brought into consideration. A granulomatous

disease of the tonsil, which has progressed to calcification, stands another chance.⁸

Complications in association with tonsilloliths are uncommon. Occasionally, a tonsillolith may penetrate through the tonsillar capsule causing a peritonsillar abscess and subsequently trismus. In elderly patients, large tonsilloliths can be aspirated and produce significant secondary pulmonary complications. Superficial tonsilloliths may be enucleated whereas deep tonsilloliths require tonsillectomy as a definitive form of therapy. In the present case, the presence of a unilateral tonsillolith could not be established initially but the location, size and radio-opaque features on the roentgenogram provided us with the concluding diagnosis of a tonsillolith as mentioned earlier. The clinical need of the patient leads us to proceed with the surgical removal of the same. A careful CT scan analysis also shows the true nature of the structure.

Single large tonsilloliths are removed surgically even if they are asymptomatic because recurrent episodes of tonsillitis can be anticipated.⁸ Removal can be accomplished with manual compression, curettage or a simple incision to release the calcified body. When tonsillitis is present, a tonsillectomy with the contained tonsillolith is carried out. In this reported case the patient had no subjective symptoms. Individual removal of these numerous tonsilloliths is not a feasible approach.

Thus, it can be concluded that unilateral or bilateral tonsilloliths are relatively uncommon findings, which may be detected on routine radiographic examination. It should be considered in the differential diagnosis of radiopaque lesions involving the mandible. The absence of symptoms often delays diagnosis as in the present case its presence was observed as a result of clinical examination the presence of an unexpected mass. Abscessified peritonsillar accumulations may be a cause of ectopic calcifications. In the present case it was more of an incidental finding.

A lesson to be learned from this finding is that oral cavity examination should include the tonsil and pharyngeal regions.

The clinical implications include a range that starts from the absence of any symptoms, induced halitosis to recurrent tonsillitis. It can be, therefore, be deemed mandatory, to remove a tonsillolith, especially if it of such a massive dimension as in our case.

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