

Tonsillolith: A report of three clinical cases

Mariela Dura Gontijo de Moura ¹, Davidson Fróis Madureira ², Luiz Cláudio Noman-Ferreira ³, Evandro Neves Abdo ³, Evandro Guimarães de Aguiar ³, Addah Regina da Silva Freire ³

- (1) Mastership student of dentistry, in the concentration area of Stomatology
 (2) Bachelor in Dentistry
 (3) Senior Lecturers, School of Dentistry, Federal University of Minas Gerais, Brazil

Correspondence:

Dr. Evandro Neves Abdo
 Faculdade de Odontologia
 Universidade Federal de Minas Gerais
 Avenida Antônio Carlos, 6.627
 Pampulha – Belo Horizonte CEP: 31.270-901.
 E-mail: enabdo@uai.com.br

Moura MDG, Madureira DF, Noman-Ferreira LC, Abdo EN, Aguiar EG, Freire ARS. Tonsillolith: A report of three clinical cases. Med Oral Patol Oral Cir Bucal 2007;12:E130-3.
 © Medicina Oral S. L. C.I.F. B 96689336 - ISSN 1698-6946

Received: 29-03-2006
 Accepted: 1-10-2006

Indexed in:
 -Index Medicus / MEDLINE / PubMed
 -EMBASE, Excerpta Medica
 -SCOPUS
 -Índice Médico Español
 -IBECs

ABSTRACT

Tonsillolith is a rare dystrophic calcification as a result of chronic inflammation of the tonsils. Three asymptomatic cases of tonsillolith are reported, incidentally discovered through panoramic radiographs, which showed different sizes of radiopaque images, varying from 2 to 5mm; cases I and III images did not overlap the mandible ramus, which led to a probable diagnosis of soft tissue calcification. Case II had radiopaque unilateral images, with osseous tissue density, overlapping the mandibular ramus, leading to a benign intra-osseous lesion, which was considered as differential diagnosis. No symptoms were reported in any case. Only case I had clinical characteristics, showing highly consistent white plaques partially visible through the mucosa. Computed tomography of the maxillofacial region/head and neck were requested to find out the exact location of these images, since most of the overlapping radiopaque images in the mandibular ramus were very similar to intra-osseous abnormalities. The computed tomography showed hyperdense images in the palatine tonsils, confirming the diagnosis of tonsillolith. The patients are currently under follow-up. No treatment is required if there is no symptom. In conclusion, tonsillolith might show images on panoramic radiographs similar to intra osseous abnormalities. The diagnosis is relatively easy when computed tomography is requested, although the images are not pathognomonic. Therefore, clinicians should consider other pathologies as differential diagnosis.

Key words: Tonsillolith, tonsil concretions, panoramic radiography.

RESUMEN

El tonsilolito es una calcificación distrófica rara que surge como consecuencia de la inflamación crónica de las amígdalas. Se relatan tres casos asintomáticos de tonsilolitos, descubiertos durante el examen radiográfico de rutina por medio de radiografías panorámicas, que mostraron distintos tamaños de imágenes radiopacas, que variaron entre 2 y 5 mm. Los casos I y III presentaron imágenes que no se superpusieron a la línea de la mandíbula, lo que condujo a un diagnóstico probable de calcificación de tejido suave. El caso II tenía una imagen radiopaca unilateral, con densidad ósea, superponiéndose a la línea de la mandíbula, conduciendo a una lesión benigna intra-ósea, que fue considerada como el diagnóstico diferencial. No se encontraron síntomas en ningún caso. Sólo el caso I tenía características clínicas, mostrando unas placas blancas, visibles a través de la mucosa. Fueron solicitadas tomografías computarizadas de la región maxilo-facial para averiguar la ubicación exacta de estas imágenes, ya que la mayor parte de la superposición de las imágenes radiopacas en la línea mandibular era muy similar a anomalías intra-óseas. Las tomografías computarizadas mostraron imágenes hiperdensas en las amígdalas palatinas, confirmando el diagnóstico de tonsilolitos. Los pacientes están actualmente en

seguimiento. No se requiere tratamiento si no existen síntomas. Concluyendo que los tonsilolitos pueden mostrar imágenes en las radiografías panorámicas similares a alteraciones intra-óseas. El diagnóstico es relativamente fácil cuando la tomografía computarizada es solicitada, a pesar de que las imágenes no son patognomónicas.

Palabras clave: Tonsilolito, amígdalas, radiografías panorámicas.

INTRODUCTION

The deposition of calcium salts, primarily calcium phosphate, usually occurs in the skeleton. When it happens in an unorganized fashion in soft tissue, it is referred to as heterotopic calcification, which is divided into three categories: metastatic, idiopathic or dystrophic. Metastatic calcification occurs when minerals precipitate into normal tissue as a result of higher than normal serum levels of calcium (hyperparathyroidism) or phosphate (chronic renal failure). This calcification generally occurs bilaterally and symmetrically. Idiopathic calcification refers to the deposition of calcium in normal tissue despite normal serum calcium and phosphate levels (chondrocalcinosis and phleboliths). Dystrophic calcification is pathologic and occurs in degenerative and dead tissue despite normal serum calcium and phosphate levels (1-10).

The aim of this paper is report three cases of tonsilloliths, a dystrophic calcification, discovered in panoramic radiograph.

CASE REPORTS

Case I

A 62-year-old man signed in for dental implant evaluation. The panoramic radiograph showed multiple bilateral radiopaque images, with average size of 5mm, overlapping the mandible ramus and ear cartilage, indicating calcification in the soft tissues (Figure 1A; 1B). Clinical intra-oral examination showed white plaques on the left tonsil, asymptomatic and with no history of recurrent tonsil inflammation. For the exact location of the images, a computed tomography scan of the maxillofacial region/head and neck was requested; with hyperdense images being seen on both palatine tonsils, confirming the diagnosis of tonsillolith (Figure 1C). The patient is currently under follow-up.

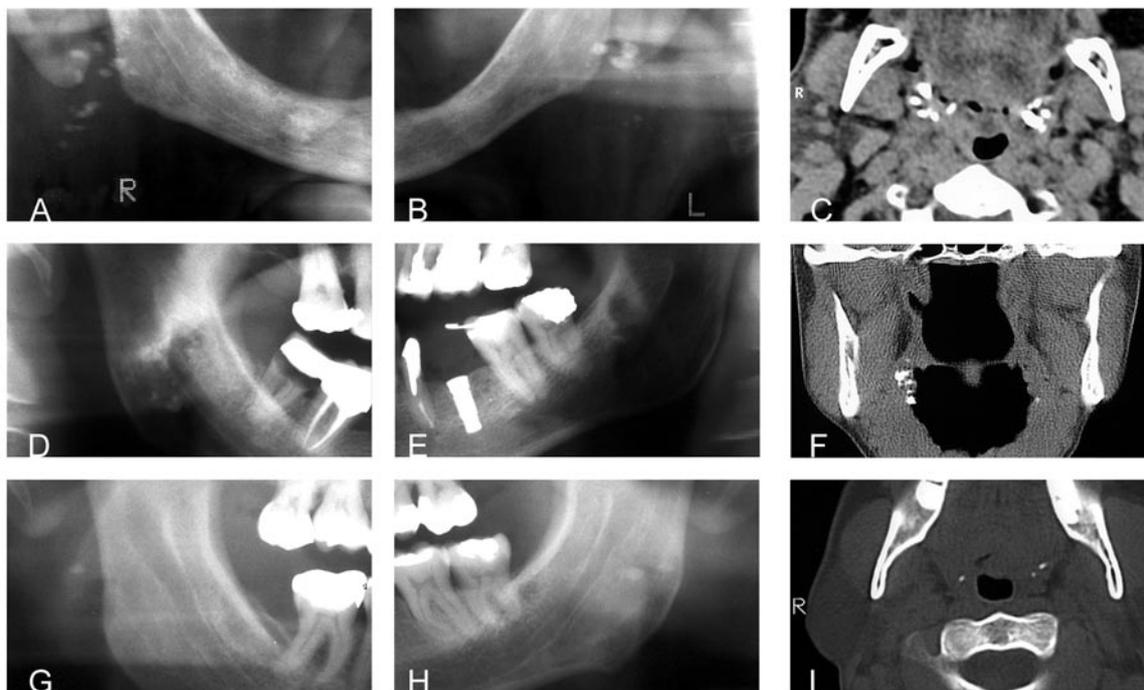


Fig. 1.

Case 1. 1A and 1B: Panoramic radiograph showing radiopaque masses superimposed over the ascending ramus and ear cartilage.

1C: Axial CT section (soft tissue window) showing hyperdense areas on both palatine tonsils.

Case 2. 1D and 1E: Panoramic radiograph showing radiopaque masses overlapping the foramen of the right mandible ramus.

1F: Coronal CT section (soft tissue window) showing hyperdense areas on both palatine tonsils.

Case 3. 1G and 1H: Panoramic radiograph showing radiopaque images superimposed over the soft palate and ascending ramus.

1I: Axial CT section (bone window) showing hyperdense areas on both palatine tonsils.

Case II

A 71-year-old woman signed in for dental implant evaluation. The panoramic radiograph taken showed radiopaque images, with an average size of 3mm, overlapping the foramen of the right mandible ramus. Probable diagnosis was calcification in the soft tissues, although the possibility of intra-osseous abnormality was not ignored (Figure 1D). Suggestive images of calcification in the left mandibular ramus could not be observed (Figure 1E). Clinical intra-oral examination showed no alterations. Computed tomography was requested to verify the exact location of the radiopaque images, in which calcifications were seen bilaterally in both palatine tonsils (Figure 1F). The patient is currently under follow-up.

Case III

A 42-year-old man signed in for treatment of a recurrent ameloblastoma. There was no alteration in medical history or intra-oral examination. Panoramic radiograph revealed bilateral radiopaque images, with an average size of 2mm, overlapping the soft palate and ascending ramus (Figure 1G; 1H). No symptoms were observed. The computed tomography scan showed bilateral hyperdense images in both palatine tonsils (Figure 1I). The patient is currently under follow-up.

DISCUSSION

Sites of heterotopic calcification may not cause significant signs or symptoms; most being detected incidentally during radiographic examination, with panoramic radiograph best evidencing this alteration. The following important criteria might be considered in the diagnosis: anatomic localization, distribution, number and shape of the calcifications (1-10).

The exact etiology and pathogenesis is unknown. Repeated episodes of inflammation may produce fibrosis at the openings of the tonsillar crypts. Bacterial and epithelial debris then accumulates within these crypts and contributes to the formation of retention cysts. Calcification occurs subsequent to the deposition of inorganic salts and the enlargement of the formed concretion takes place gradually. The tonsilloliths derive their phosphate and carbonate of lime and magnesia from saliva secreted by three major salivary glands and about 400 to 500 minor salivary glands. Tonsillolith consistency ranges from soft and friable to hard as stone. Consequently, they occur most commonly in young adults with long histories of recurrent sore throats (1,4,6,10,11).

Tonsillolith is a rare dystrophic calcification as a result of chronic inflammation of the tonsils. In general, it is asymptomatic, more often in older age groups, displaying several shapes and no sex preference (1-10). The three cases described have similar calcifications and the past history did not identify the possible etiology. The clinical characteristics may vary from white to yellow plaques, highly consistent and partially visible through the mucosa (1-6, 9,10). It could be seen clinically in only one of the cases reported. The absence of clinical signs and symptoms is probably

due to the small size of the calcifications; thus, the lesions were incidentally detected during panoramic radiographic examination. The radiograph images overlapped the middle portion of the mandibular ramus, being very similar to intra osseous abnormalities (1-4, 6-8, 10). The second case had unilateral images, with osseous tissue density, overlapping the mandibular ramus; these characteristics might lead to the diagnosis of a benign intra-osseous lesion, which was considered as differential diagnosis. Cases I and III images did not overlap the mandible ramus, which led to a probable diagnosis of soft tissue calcification.

When the soft tissue calcification is adjacent to bone, it is sometimes difficult to determine whether the calcification is within bone or soft tissue. The essential differential diagnosis is a radiopaque lesion within the mandibular ramus, such as a dense bone island. Calcifications in the carotid arterial, lymph nodes, salivary gland and stylohyoid ligament are some of the differential diagnosis that might be considered. Calcifications within the carotid artery are located in the soft tissue below the angle of the mandible and between the hyoid bone and the image of the cervical spine as seen in panoramic images. The most common location of calcified lymph node is the submandibular region, near or below the mandibular angle. Sialoliths are most common in the submandibular glands (83% to 94%), than the parotid gland (4% to 10%) or sublingual gland (1% to 7%), visualized on standard occlusal projections and panoramic radiographs. In a panoramic image the ossification of the stylohyoid ligament extends from the mastoid process and crosses the posteroinferior aspect of the ramus toward the hyoid bone (8,12-15).

Definite diagnosis is obtained through panoramic radiograph and computed tomography scan with contrast, mainly due to the special location revealed by this exam. The images display the same calcifications are located between the palatopharyngeus and palatoglossus muscles and show no alteration in the mandibular ramus (4-6,10). In the three cases reported here, the final diagnosis was only clarifying with computed tomography examination.

No treatment is required for most tonsilloliths. However, large calcifications with associated symptoms (pain, swelling and dysphagia) are removed surgically (8-10).

In conclusion, tonsillolith might show images on panoramic radiographs. Although the diagnosis is relatively easy, especially when computed tomography is used, the images are not pathognomonic. Therefore, clinicians should consider other pathologies as differential diagnosis.

REFERENCES

1. Cooper MM, Steinberg JJ, Lastra M, Antopol S. Tonsillar calculi. Report of a case and review of the literature. *Oral Surg Oral Med Oral Pathol* 1983;55:239-43.
2. Gadgil RM. An unusually large tonsillolith. *Oral Surg Oral Med Oral Pathol* 1984;58:237.
3. Jones JW. A tonsillolith. *Br Dent J* 1996;180:128.
4. Neshat K, Penna JK, Shah DH. Tonsillolith: A case report. *J Oral Maxillofac Surg* 2001;59:692-3.
5. Samant HC, Gupta OP. Peritonsillolith. *Oral Surg Oral Med Oral Pathol* 1975;40:56-60.

6. Sezer B, Tugsel Z, Bilgen C. An unusual tonsillolith. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2003; 95:471-3.
7. Westmore B, Hupp J. Tonsillolith. *Oral Surg Oral Med Oral Pathol* 1988;65:783.
8. White SC, Pharoah ML. Soft tissue calcification and ossification. In: *Oral Radiology: Principles and Interpretation*. St. Louis: Mosby; 2000. p. 552-65.
9. Silvestre-Donat FJ, Pla-Mocholi A, Estelles-Ferriol E, Martinez-Mihi V. Giant tonsillolith: Report of a case. *Med Oral Patol Oral Cir Bucal* 2005;10:239-42.
10. Ram S, Siar CH, Ismail SM, Prepageran N. Pseudo bilateral tonsilloliths. A case report and a review of literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2004;98:110-4.
11. Giudice M, Cristofaro MG, Fava MG, Giudice A. An unusual tonsillolithiasis in a patient with chronic obstructive sialoadenitis. *Dentomaxillofacial Radiology* 2005;34: 247-50.
12. Almog DM, Horev T, Illig KA, Green RM, Carter LC. Correlating carotid artery stenosis detected by panoramic radiography with clinically relevant carotid artery stenosis determined by duplex ultrasound. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2002;94:768-73.
13. Fanibunda K, Lovelock DJ. Calcified stylohyoid ligament: unusual pressure symptoms. *Dentomaxillofac Radiol* 1997;26:249-51.
14. Ravon NA, Hollender LG, McDonald V, Persson GR. Signs of carotid calcification from dental panoramic radiographs are in agreement with Doppler sonography results. *J Clin Periodont* 2003;30:1084-90.
15. Roldan-Chicano R, Onate-Sanchez RE, Lopez-Castano F, Cabrerizo-Merino MC, Martinez-Lopez F. Panoramic radiograph as a method for detecting calcified atheroma plaques. Review of literature. *Med Oral Patol Oral Cir Bucal* 2006;11:E261-6.