

# Giant tonsillolith – a rare cause of dysphagia

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## ABSTRACT

Tonsilloliths are calcified concretions that originate within the palatal tonsil crypts. Moreover, development of these concretions into giant tonsilloliths is exceptionally uncommon. We present a 17-year-old female with a two-year history of increasing dysphagia, persistent oral cavity swelling and speech alteration. Clinical examination of the oral cavity revealed a large solid left tonsil with no obvious neck masses. Computer tomography demonstrated a well-defined, large calcified left tonsillar fossa mass of uncertain underlying cause. This patient subsequently underwent surgical excision for histology.

## INTRODUCTION

Tonsilloliths are white or yellowish calcified structures of bacteria and organic debris that commonly develop in enlarged tonsillar crypts. Giant tonsillar or peritonsillar calculi are rare (1). The mechanism of formation is a subject for debate. Tonsilloliths exhibit a biofilm structure in which aerobic and anaerobic bacteria colonise an epithelial or mucosal surface in the presence of an extracellular matrix that envelopes the bacteria. Tonsilloliths act as a localised concentration of bacteria that ultimately calcifies by progressing from a soft gel to hard concretions (2). Tonsilloliths are composed of calcium hydroxyapatite and calcium carbonate with other minerals including phosphorus, ammonia and magnesium (1). Alternative mechanisms have been proposed that include ectopic tonsillar tissue, minor salivary gland duct stasis leading to formation of calculi or peritonsillar abscess calcification (3).

## CASE REPORT

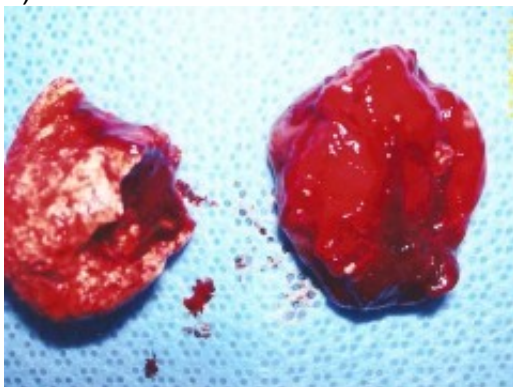
A 17-year-old female presented with a two-year history recurrent tonsillitis of three episodes per year. Over a two-year period between episodes there remained a persistent left sided oral cavity swelling that increased in size. This swelling caused dysphagia, foreign body sensation and “hot potato” speech with progressively worsening dysphagia over the preceding two months prior to clinical review. The past medical history included an emergency appendicectomy and asthma. There is no allergy history and the medications included terbutaline inhaler (500mcg) and budesonide inhaler (200mcg). The patient is a non-smoker. Clinical examination revealed a very large solid left tonsillar mass protruding at the level of the soft palate. The lesion appeared as a white mass with overlying erythematous mucosa and a small ulcerated area superiorly in the left palatoglossal fold (Figure 1a & 1b). The left tonsil felt solid to palpation. There was no palpable neck lymphadenopathy. Haematological investigations were within normal parameters.



Computer tomography (CT) scan of the neck was performed to exclude any underlying parapharyngeal space mass. CT scan reported the presence of a large lobulated, well-defined, calcified left tonsillar mass measuring 1.8 x 2.4 x 2.6cm (Figure 2). There was enlargement of the right tonsil and nasopharynx lymph node hypertrophy. There was no significant adenopathy in the neck or upper mediastinum.



Surgical removal was by tonsillectomy. Pathological analysis confirmed the presence of a chronically inflamed tonsil and a large tonsillolith (Figure 3).



## DISCUSSION

The earliest known recorded description of oropharyngeal concretions is 1560 (1). Small concretions are common however larger tonsilloliths relatively infrequent with a low incidence (4). The age range has been documented from 20 to 68 years with no gender predilection (1,5). Tonsilloliths act as localised concentration of bacteria, which calcify progressively from a soft gel to hard calculi. They appear to have characteristics in common with biofilms (2), which are colonies of bacteria enveloped by an extracellular matrix. Bacteria in biofilms are difficult to treat with antibiotic chemotherapy because they are localised and act as a nidus for acute infection (4). This is associated with a high recurrence rate and chronicity of otorhinolaryngology infections (6). Thus as in this patient case report, tonsilloliths are associated with recurrent inflammation i.e. tonsillitis. This explanation offers an alternate aetiopathogenesis to tonsillolith formation by salivary stasis in accessory salivary glands secondary to mechanical obstruction by post tonsillectomy scarring or chronic inflammation or lithogenic diathesis (5). Tonsilloliths can be asymptomatic, even when large (1), and can be found incidentally on dental or soft tissue radiography. However, if large they usually present symptomatically. Symptoms include dysphagia, recurrent sore throat, foreign body sensation, or referred otalgia. Halitosis is thought to be due to anaerobic bacterial metabolic release of sulphur containing compounds. Clinical examination can reveal a hard mass in the tonsillar fossa. This will raise the suspicion of malignancy or calcified granulomatous disease. Panoramic radiograph images can incidentally identify tonsilloliths. These radio-opaque masses need to be distinguished from other anatomical structures or pathological calcifications. Anatomical structures include a prominent pterygoid hamulus, large maxillary tuberosity, displaced third molar tooth or an elongated styloid process due to calcification of the stylohyoid ligament (Eagle's syndrome) (3). Pathological radio-opaque calcifications simulating tonsilloliths are of vasculature (atherosclerosis or phleboliths), lymph node calcification, calcified peritonsillar abscess, salivary gland sialolith or an intraosseous abnormality within the mandibular ramus. As in this case, computer tomography is the investigation of choice as it allows assessment of any anatomical aberration or to establish the location and extent of a pathological lesion, which in this case was the exclusion of any parapharyngeal masses. Management of tonsilloliths is dependant on size, symptoms and informed patient discussion. Small tonsilloliths within tonsillar crypts may require nothing more than patient reassurance and may be manually expressed from the tonsil crypt. Larger tonsilloliths may require removal by curettage under topical or local anaesthesia infiltration. Giant tonsilloliths as in this case report patient or large calculi associated with recurrent tonsillitis, or if there is a suspicion of malignancy, requires surgical excision and tonsillectomy.

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