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CASE STUDY

MANAGEMENT OF LARGE SUBMANDIBULAR SIALOLITH BY BIMANUAL PALPATION

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ABSTRACT

Sialolith is one of the most common disorders of salivary glands. It may occur in all salivary glands but is most common in the parotid. This case report presents clinical and radiological diagnosis and uniquely rare management of a Sialolith in the Wharton's duct by bimanual palpation.

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INTRODUCTION

Sialolithiasis has been reported as one of the most common diseases of the salivary glands. Studies have shown that as much as 12 in 1000 adults have been affected with sialolithiasis (Leung *et al*., 1999). Literature also suggests that the male and female predisposition to being affected by sialolithiasis is twice more common in males than in females (Steiner *et al*., 1997). It is the submandibular gland in which most sialoliths occur and sialolithiasis itself is 2nd most common disorder affecting the salivary glands next to mumps (Ledesma-Montes *et al*., 2007). The frequency of occurrence in the major salivary glands ranges from 80% to 4-10% to rarely 1-7% in the submandibular, parotid and the sublingual glands respectively (Goaz *et al*., 1994). The reason for maximum incidence in the submandibular gland is greater salivary mineral content, relatively greater length of the wharton's duct and thick viscous saliva. Most of the sialoliths that have been reported measure from 1 – 10 mm. As little as only 7.6% of sialoliths have a size that exceeds 15 mm (Rontal and Rontal, 1987).

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Case report

A 58 year old female patient presented to Department of Oral Medicine and Radiology of JN Kapoor DAV ©Dental College Yamunanagar with complaint of swelling and pain at the base of the tongue since last 1 month. These symptoms persisted throughout the day. Pain aggravated during meals. On systemic review the patient was hypertensive for the past 6 years and was underregular medication for the same. Extraoral examination revealed no swelling or asymmetry. All vital signs were normal. Intraoral examination showed the presence of a firm, bimanually palpable swelling of approximately 1.5 X 1.5 cm on the floor of the mouth. The swelling was only present along the right submandibular duct.The oral mucosa overlying the swelling was ulcerated and extremely tender. The milking of the left Wharton's duct revealed a normal salivary flow but that of right Wharton's duct did not. The radiographic investigations included a mandibular occlusal radiograph that revealed a calcified structure posterior to the premolars. The radiopacity was homogenous. Based on clinical and radiological findings sialadenitis secondary to right submandibular duct sialolithiasis was diagnosed.

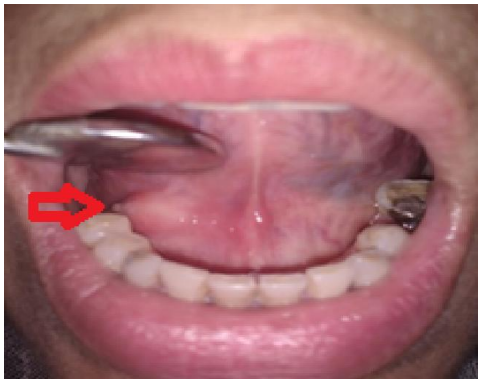

Figure 1. Large intraoral swelling on clinical examination

Figure 2. Mandibular Occlusal Radiograph showing Sialolith

The giant swelling when palpated even though was tender but the bimanual palpation of the swelling caused the removal of the sialolith leaving a unhealed patch of tissue that did not bleed but was open. The patient was prescribed adequate antibiotics in order to minimise the risk for any secondary infection and the wound was left open.

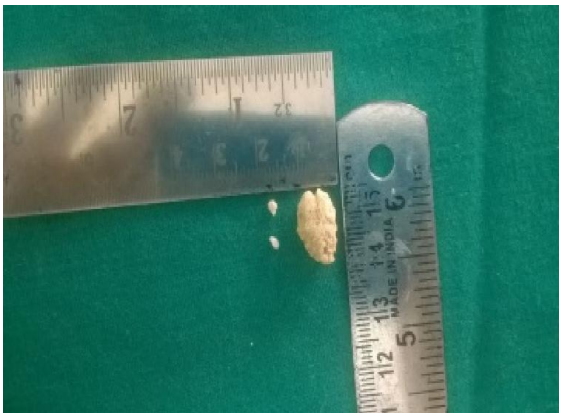

Figure 3. Sialolith after removal from the duct

DISCUSSION

The average size of the salivary gland calculi is reported to be between 6mm to 9mm. (McGurk *et al*., 2005) Still the calcified masses that are formed within the salivary glands or their ducts usually measure 1mm to 1 cm. This case had a sialolith of size of 15 mm. It is quite rare to find a giant sialolith and defined as the size of 1.6 cm or larger. (Meryem Toraman Alkurt and Ilkay Peker, 2009) The commonest etiology of production of a sialolith may be directly or indirectly related to an acute or a long standing chronic bacterial infection involving the gland causing salivary stasis. Metabolic diseases except gout may rarely predispose to formation of sialolith.Medications that decrease the salivary production, like anti-histamines, anti-hypertensives and antidepressants maybe related to a decrease in salivary flow. (Valdez and Fox, 1993) Along with these the parenchyma associated with the gland may undergo atrophy that may frequently be associated with interstitial fibrosis as well. All of these associated abnormalities depend on various aspects such as the size of the sialolith, the duration of its presence in the gland duct and the opposing and the retrograde pressure that it applies to the salivary flow. Even the position of the calculus in the duct decides the kind of atrophic changes that it would induce. Most of the cases reveal easy diagnostic criteria based on clinicaland radiological findings. The most important aspect in diagnosing a sialolith is appropriate clinical examination and careful evaluation of patient's history. Occlusal radiographs have been the most successful radiographic techniques to diagnose a sialolith. These can be adjuncted with panoramic radiography to confirm the diagnosis. In recent times the involvement of Computerised tomography, magnetic resonance sialography and other specialised radiographic techniques like scintigraphy (sialography), ultrasound have proved to quite useful in diagnosing sialoliths (McGurk *et al*.). It is very important to keep the patient hydrated and then milk the duct hat may reveal the sialolith (Mason and Chisholm, 1975). If the stones are large in size dilatation of the duct or an incision would have to be placed to expose the sialolith. The main objective of the treatment irrespective of the size of the salivary stones is to restore salivary secretion and relieve pain.

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