SIALOLITHIASIS OF SUBMANDIBULAR GLAND WITH ACUTE SUPPURATIVE SIALADENITIS: A CASE REPORT

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ABSTRACT

Sialoliths are most common non-neoplastic salivary gland disease and the main cause is obstructive submandibular sialadenitis. Sialolithiasis causes recurrent painful swelling of the involved gland, which increases in size during meals. Sialoliths most commonly occur in the submandibular gland in 80% of the cases. Pathogenesis of sialolithiasis is based on anatomical location of the salivary duct and gland. This article reports a case sialolithiasis of submandibular gland with Acute Suppurative sialadenitis of the right side in 22-year-old male patient with recurrent symptoms of pain and swelling during meal. Consideration of patient history, Clinical examination and radiographic investigations are important in determining the precise location and size of the sialoliths for complete treatment plan for the patient.

KEYWORDS: Sialoliths, Pathogenesis.

INTRODUCTION

Sialolithiasis is one of the commonest disorders affecting salivary glands and cause of sialoadenitis.[1] Sialolithiasis usually affects submandibular salivary gland because of its anatomical location as saliva has to flow against the gravity, its tortuous duct with narrow orifice and alkaline saliva with high mucin content.[2] Bacterial and viral infections are among the most common causes of Sialoadenitis. Bacterial infections commonly ascend from the
oral cavity because of decreased salivary flow.\textsuperscript{[3]} Here we are reporting a case of acute suppurative sialadenitis secondary to Sialolithiasis.

**CASE REPORT**

A 23 years old male, patient reported to the department of Oral Medicine and Radiology with the chief complaint of pain and swelling in lower right back region of mouth below the tongue since 3 months. Patient started experiencing pain associated with the swelling which was mild initially, but has increased in its intensity since 6 days. Intensity of pain and size of the swelling increased during meal and decreases gradually on its own after an hour. Patient also complains of pus discharge from the swelling behind the lower front teeth below the tongue. The patient was advised to take medications from the general physician for the same. Patient is not suffering from any of the medical ailment. On general examination, all the vital signs were within normal limits. On extra-oral examination, there was a solitary diffuse swelling on right side of face in submandibular region, measuring approximately 4cm x 2 cm in dimensions, oval in shape, extending anterio-posteriorly from right parasympyseal region to right side of angle of mandible (Figure 1). The overlying skin appeared to be normal and there was no pus discharge from the swelling. On palpation, the swelling was tender, soft to firm in consistency and non fluctuant. There was local rise in temperature in the same region. On examination of right submandibular salivary gland there was an obvious swelling associated with the gland and intra-orally white viscous ropy salivary discharge was seen on milking of gland from orifice of right Wharton’s duct. Intra-orally there was a solitary diffuse swelling in floor of mouth on right side which was hard in consistency, fluctuant and tender on palpation. The overlying mucosa was erythematus (Figure 2). On the basis of history and clinical findings the provisional diagnosis of acute suppurative sialadenitis was made. A true mandibular occlusal radiograph was advised which revealed a solitary homogenous cigar shaped radiopacity measuring approximately 1.8 cm x 1cm in dimensions with distinct borders (Figure 3). This was suggestive of sialolithiasis of right Wharton’s duct. To examine the possibility of presence of other calculi in submandibular salivary gland, the ultrasonography of right and left submandibular glands was done. On ultra-sonographic examination, right submandibular gland appeared heterogeneous and hyper echoic with mildly raised vascularity (Figure 4); whereas, left submandibular gland appeared normal in echo pattern. Right submandibular duct was dilated measuring 5.6 mm and showed an impacted large calculus of size 16.5 mm in the distal part just near the opening in the floor of mouth. Debris was also seen in the duct. Ultrasonographic impression of right submandibular
sialolithiasis with right submandibular sialadenitis with submental and submandibular lymphadenopathy was made. Sialolith was removed from the duct surgically and loose sutures were placed (Figure 5). Patient was kept on antibiotics and anti-inflammatory for a week and recalled after two weeks and followed for 1 month.

Diffuse swelling on right side of face in submandibular region with asymmetry.

Swelling on floor of mouth and inflamed orifice of duct with pus discharge.

Occlusal radiograph showed well defined solitary cigar shaped radiopacity seen on right side.
Ultrasonography reveals hyper echoic areas and dilated right submandibular duct with impacted large calculus and mildly raised vascularity.

Intra-operative picture showing surgical removal of sialoliths with suturing done.

DISCUSSION
Multiple sialoliths in same gland and simultaneous occurrence of sialoliths is rarely seen. 40% of parotid stones and 20% of submandibular stone are not radio-opaque and need sialography for its diagnosis. In present case, sialoliths was present on right submandibular duct. Males are commonly affected more than females, the ratio being 2:1 and peak incidence being between 30 to 60 years of age. In present case, patient was male with 22 years of age which is consistent with literature. Clinically sialoliths are round or oval in shape with smooth or rough surface. In present case, it was oval in shape. A wide variety of entities can decrease salivary flow. These include trauma, surgery, radiation, and Sjogren’s syndrome. Diseases that obstruct the salivary duct, such as tumors and sialolithiasis, may cause sialoadenitis. An incomplete obstruction by a sialolith may be associated with secondary infection of the gland, and when a complete obstruction continues, glandular atrophy
eventually occurs. The pathogenesis advocate that, there is an initial formation of organic nidus which leads to deposition of inorganic and organic substances or In some cases, the existence of mucosal plugs facilitates as a nidus in the ductal system. A possibility of debris or bacteria migrates in the salivary ducts from oral cavity has also been suggested. Submandibular sialoliths contain 82% of inorganic content and 18% of organic content. The organic material is composed of various carbohydrates and amino acids. The nidus is composed of calcium phosphates with small amount of carbonates in the form of hydroxyapatite and traces of magnesium, potassium, and ammonium.

Imaging modalities, both conventional and advanced are very useful in diagnosing sialolithiasis. The sub- mandibular radiopaque sialoliths can be diagnosed by Occlusal or Orthopantomogram but radio-luscent are very difficult to diagnose and locate only on routine radiologic examination and therefore more elaborate diagnostic modalities such as ultrasonography or sialography may be needed for proper diagnosis and treatment. In present case, Occlusal radiograph was taken which showed a homogenous cigar shaped radio-opaque structure in right submandibular duct measuring about 1.8x1cm with distinct borders. Sialography was not done as patient had bacterial infection. The patient was subjected for further investigations to rule out any pathology related to lymph nodes and associated structures. Ultra-sonography was performed, which revealed Submandibular gland appeared heterogeneous and hyper echoic with mildly raised vascularity with dilation of duct. An impacted large calculus was observed in the distal part which revealed right submandibular sialolithiasis with right submandibular sialadenitis and submental and submandibular lymphadenopathy.

The treatment of sialolithiasis solely depends upon the location and size of the sialolith. Patients presenting with sialolithiasis may benefit from a trial of conservative management, especially if the stone is small. The patient must be well hydrated and application of moist warm heat with milking of gland, while sialogogues are used to promote saliva production and flush the stone out of the duct. Sialolithiasis with infection must be treated with antibiotics. Most stones will respond to such a regimen, combined with simple sialolithotomy when required. Sialadenoscopy, which is a non invasive technique, can be used to manage large sialoliths as well as ductal obliteration. CO2 laser, because of its advantages of minimal bleeding, less scarring, clear vision and minimal post operative complications, is gaining its popularity in the treatment of sialolithiasis. In present case, Sialolith was removed from the
duct surgically by simple incision and loose sutures were placed. Patient was prescribed antibiotics for 1 week and followed for 1 month.

REFERENCES