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# Chronic Sialolith with Sialadenitis

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## Abstract

Sialolithiasis also called as mealtime syndrome is the second most common disease of major salivary gland. It occurs commonly in middle-aged adults with the incidence of 12 in 1000 of the adult population. It is common in males than females in the ratio of 2:1 [1]. It most commonly involves the major salivary gland, especially submandibular gland or its duct. Sialoliths occur as a result of deposition of calcium salts around an organic material such as inspissated mucous, ductal epithelial cells, salivary proteins and foreign bodies. Stasis of saliva may lead to acute and chronic infections[2]. Intraductal stones are comparatively common than intraglandular stones. Hilar stones tend to become very large and round in shape before becoming symptomatic unlike, ductal stones which show elongated form. Diagnosis of sialolithiasis is easy due to typical and obvious clinical features, but in order to establish the right treatment, various imaging studies are mandatory [3]. We report a case of right submandibular gland sialolithiasis with chronic infection in 35-years-old male with its diagnostic imaging and treatment plan.

**Keywords:** Sialolithiasis ; submandibular gland; Intraductal stones

## Case History

A 35 yr old male came with c/o swelling in the right submadibular region for past 2 weeks. Pain and swelling in th right submanibular region. White in colour discharge present in the floor of the mouth after havig meal. H/o similar complaints before 11 months and after investigation calculi found to be near frenulum and removed under LA.

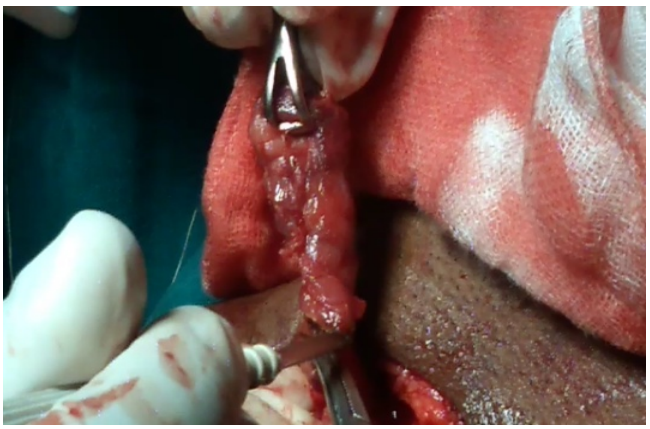
On examination Diffuse swelling on right submandibular region measuring 3 cm × 2.5 cm in size, roughly oval in shape. Surface over the swelling was normal. Swelling was firm to hard in consistency, tender on palpation, not freely mobile.

Patient was admitted and necessary investigation has been taken radiological evidence shows few calculi foci, largest measuring 7x5mm in sublingual region with dilatation of submandibular gland duct. Ct scan neck shows right submandibular gland shows multiple heterogenous echo texture with few dilated duct within the right submandibular gland. Right submandibular gland dilated and measuring 4mm. Calcified foci seen within the submandibular duct near the floor of the mouth.

**Right Submandibular Gland Swelling**

Anaesthetic fitness obtained and treated with IV antibiotics, analgesics to the acute infection. Patient was taken under GA. Right submandibular gland removal done and calculi was seen at the junction of gland and the duct. Frank pus was seen in the gland and ductal region.

The patient had smooth recovery and post operative period was uneventful with no post operative complication.



**Submandibular Gland Removed**

Histopathological report came as chronic sialadenitis.

**Discussion**

Sialolithiasis is the formation of calcific concretions within the parenchyma or the ductal system of a major or minor salivary gland. Studies indicate that 92% of sialolithiasis occur in the submandibular gland, 6% in the parotid gland, and 2% in both the sublingual and minor salivary glands. In our case, the sialolith was associated with submandibular gland.[4] Sialoliths are generally seen in small size and their sizes range from 1 mm to 1 cm. Large salivary gland sialoliths, which are larger than 7x5mm are considered rare.[5] Sialolithiasis usually presents with pain and inflammation but in few cases infection of the main gland may present. The exact etiology and pathogenesis of salivary calculi is unknown. Most accepted retrograde theory proposed for sialolithiasis suggested that, retrograde flow of substances or bacteria within the oral cavity into the salivary ducts lead to the formation of organic nidus that further shows calcification. Salivary stasis, increased alkaline nature of saliva, infection or inflammation, and physical trauma to salivary duct or gland may predispose to calculus formation.[2] The submandibular salivary glands are the most commonly related pair of glands in cases of sialolithiasis (around 80% of prevalence). It is explained by a tortuous structure of submandibular salivary duct. The most narrowed path of the referred duct is named “comma area,” which is located near to the duct’s outfall. It facilitates the deposition of minerals, such as calcium, creating a proper nidus for salivary stones. In addition, the submandibular salivary gland presents an alkaline environment with high phosphate concentration, which contributes for the formation of hydroxyapatite.[6] Common symptoms vary from a painless swelling, moderate discomfort to severe pain with large glandular swelling accompanied by trismus and usually associated with swelling while eating.[3] Patient discussed here was having most of the symptoms. The diff erential diagnosis of masses of lymph nodes or the submandibular salivary gland origin can be considered for such swelling in the submandibular region. A careful bimanual, intraoral, and extraoral palpation is the first step in diagnosing the submandibular gland enlargement [4]. Radiographs are a

practical and simple way of investigating the ductal system. The traditional diagnostic method include plain radiographs (occlusal radiograph), sialography, ultrasound, and scintigraphy. In our report the standard occlusal view did not show any sialolith because the stone was located in the posterior region, therefore, apanoramic radiograph was taken to show the sialolith of this remarkable size. Sialography or other imaging techniques may be required to locate them. Sialo-CT and magnetic resonance sialography are more recently introduced diagnostic tools.[7] The treatment methods for submandibualar duct stones are conservative care, operative removal and the minimal invasive surgery such as extracorporeal shock wave lithotripsy, sialendoscopy, etc.[8] The treatment of sialolithiasis is determined by the location and size of the sialolith. Conservative management should be considered in the cases of small stones.[3] Intraglandular sialoliths require submandibular sialoadenectomy. In the present case, submandibular sialoadenectomy was performed as the sialolith was located in the proximal part of the Wharton's duct.[9]

**Conclusion**

Sialolithiasis is very common in submandibular gland. Clinical and radiographic fi ndings are most important factors in determining the precise location and size of the sialolith. In cases of sialoliths associated with sialadenitis, a penicillinase resistant anti-staphylococcal antibiotic will be preferable with follow-up.

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