

Submandibular Gland Sialolith of Unusual Size: A Case Report

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ABSTRACT:

Introduction: Sialolithiasis is the most common disease of the salivary glands. Majority of sialoliths occur in the submandibular gland and is a common cause of acute and chronic infections of the gland. The size varies from one mm to one cm. Size greater than 15 mm are considered unusual or giant sialolith. **Case report:** We present a case of an unusual size sialolith of 16 mm in submandibular gland duct which was removed via transoral incision. The aim of presenting this case report is to understand etio-pathogenesis, clinical presentation and management of submandibular sialolithiasis. **Conclusion:** Submandibular sialolithiasis of more than 15 mm in size though rare are not uncommon. They can be managed intraorally if situated at or near the orifice.

Keywords: local anesthesia • radiography • salivary calculi • salivary duct calculi • submandibular gland

INTRODUCTION:

Sialolithiasis is one of the common disease of the salivary glands in middle aged individuals.[1] Approximately 12 per 1,000 patients are affected by this condition, with a slight male predominance.[2] Majority of sialoliths occur in the submandibular gland or its duct. According to Levy et al., prevalence of sialolithiasis in submandibular glands is 80%, in parotid is 19%, and in sublingual glands is 1% and sialolithiasis is a common cause of acute and chronic infections of the glands.[1]

Sialoliths are clinically round or ovoid, rough or smooth, usually unilateral and yellow in color.[3] They are generally small in size ranging from one mm to one cm. Large salivary gland calculi greater

than 15 mm are considered rare. Only a few cases of large sialolith of the submandibular or parotid glands have been reported in literature.[4]

The purpose of this paper is to present a case of unusual size of submandibular duct calculi.

CASE REPORT:

A 72 years old female reported to department of dental surgery, Lumbini Medical College, following referral by department of Ear Nose and Throat. She presented with swelling in left floor of mouth and submandibular region lasting for many days. Swelling was associated with pain but it did not increase during meals. She also complained of pus discharge from left side of floor of the mouth.

Extraoral examination revealed firm and tender swelling of left submandibular gland. Multiple submandibular nodes were palpable and tender. Intraorally, there was a firm, erythematous, and suppurative swelling on left floor of mouth. Bimanual palpation revealed firm and tender swelling of left submandibular gland.

Posteroanterior view of X-ray mandible showed radiopacity at left lower canine region (Figure 1). Lower occlusal radiograph showed a radiopacity in left floor of mouth (Figure 2).

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Fig 1: X-ray mandible (PA view) showing radioopacity at left lower canine region



Fig 2: Occlusal X-ray showing radio-opacity in left floor of mouth

Ultrasonography revealed a solid mass with distal acoustic shadow measuring 16 mm along its greatest length located near the orifice of Wharton duct.

On basis of history, clinical, and radiological examination a diagnosis of left submandibular sialadenitis due to sialolith was made.

Routine blood investigations including total and differential counts, plasma glucose level and HIV and hepatitis B and C status were carried out. They were normal or non-reactive. The calculus was removed by transoral approach with sharp dissection under local anesthesia (2% lignocaine with 1:100,000 adrenaline). Cut opened duct was marsupialized with the mucosa of floor of mouth. The stone measured 16 mm along its greatest length (Figure 3). The postoperative period was uneventful. The patient was advised analgesics, antibiotics, and warm saline mouth rinses.

Patient was reviewed at one month. She was asymptomatic and had no complains. The submandibular gland was no longer palpable and



Fig 3: Picture showing size of the calculus removed from left submandibular duct.

clear saliva could be expressed from the duct on massage of the gland.

DISCUSSION:

Sialoliths are the most widespread illnesses of the salivary glands. Salivary calculi can vary in size, shape, texture, and consistency; they may be solitary or multiple. One of the main inflammatory disorders of the major salivary glands is obstructive sialadenitis with or without sialolithiasis.

Salivary calculi are commonly found in submandibular gland or its duct. Submandibular sialolithiasis occurs as a result of a hampered flow due to inflammatory stenosis of Wharton duct. Some of the anatomical factors associated with the formation of sialoliths in the submandibular gland are:[1,5]

1. Wharton duct is the longest and tortuous among the salivary gland ducts
2. Path of the duct ascends against gravity and the main portion of the duct is wider than the orifice
3. Saliva of submandibular gland is alkaline and rich in mucin, and favors initiation of formation of sialolith.

Sialolith develop from calcified concretions, when minerals form around organic matrix in salivary ducts or gland. There are many theories put forwarded to explain sialolith, such as calcification around foreign bodies, desquamated epithelial cells, and presence of microorganisms in the duct. Alkaline pH, mucin content of saliva, and high calcium concentration in submandibular gland can describe the pathogenesis of sialolith formation.[6]

Mean size of sialolith is reported as six to nine mm and they infrequently measure more than 1.5 cm.[3,4,7] On basis of review of the literature,

most sialoliths are usually five mm in maximum diameter and all the stones more than 10 mm should be reported as unusual size.[4] Eighty eight percent of salivary calculi are smaller than 10 mm in size.[4] Our experience was of a single Wharton duct stone measuring 16 mm in length and seven mm in width. The age in the cases reviewed ranged from 21 to 75 years with average 51.4 years.[8] In our case, age of the patient was 72 years which was in the upper range of those findings.

The diagnosis of sialolith can be made by history, clinical, and radiological examinations. Pain and swelling of involved gland during meal times are generally associated with sialolithiasis. A palpable stone may be revealed during bimanual examination in most of the cases. A uniformly solid and hard gland during bimanual palpation indicates a hypo-functional or non-functional gland.[4] The case, in this study, had a history of swelling and pain in the floor of mouth with no relation between pain and meal. Occlusal radiography, sialography, orthopantomogram, ultrasonogram, CT scan, and MRI Neck have been advocated as investigation to

confirm or rule out sialolithiasis. In our case occlusal radiograph and ultrasonogram was done.

The mode of treatment depends upon the size of stone, its location, number of stone, and whether the stone is impacted or mobile. Submandibular duct catheterization and dilatation or removal by manipulation becomes first choice for small sialoliths located near the orifice of the submandibular duct. When located up to the anterior half of the duct, they are generally treated by conservative surgery, preferably via an intraoral approach.[9] If the stones are located more posterior in the intraglandular portion of the duct, the entire gland must be removed. [9,10] In our case surgical removal of the stone via transoral incision was done since the stone was near to the orifice.

CONCLUSION:

Occurrence of submandibular sialolith greater than 10 mm, though rare, is not uncommon. They can be managed via oral route if located in the anterior part of Wharton duct.

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