

Sub Mandibular Sialolith – A Case Report

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Abstract

Submandibular sialolithiasis is the most common disease of salivary glands. Giant stone of more than 3 cm is extremely rare with only 18 cases reported in literature. In this short communication, we report a young gentleman, presented with an enlarged tender left submandibular gland and hard mass within Wharton duct. Neck ultrasound revealed left submandibular duct stone with an associated abscess confirmed by computed tomography scan. Medical management followed by left submandibular intraoral stone extraction with marsuplization of the duct 2 weeks later was done. The sialoliths was about 3 cm. The patient had smooth recovery with no complications in follow-up.

Keywords: Neck, Ultrasound, Marsuplization

Introduction

Sialolithiasis is the most common disease of the salivary glands. Sialolith can form in any of the salivary glands in head and neck region, with submandibular gland is the most commonly affected site (80–92%).[1] It has been reported that the stones can form in the parotid gland in 6–20% of cases and in the sublingual and minor salivary glands in 1–2%. [1] Bilateral or multiple-gland sialolithiasis is occurring in fewer than 3% of patients.

In cases with multiple stones, calculi may be located in different positions along the salivary duct and gland. Submandibular stone close to the hilum of the gland tends to become large before they become symptomatic. Male adults are more frequently affected than females, and children are rarely involved.

Sialolithiasis occurs on right and left sides equally. Several factors tend to favor submandibular gland stones that include longer submandibular duct and larger duct caliber, with slower salivary flow rate in the submandibular Giant submandibular sialolith: A case report and literature review Omimah Abdullah, Zeinab AlQudehy Natural Guard Hospital Alhasia, Resident Level 5, Dammam Medical Complex, Dammam, Eastern Province, Saudi Arabia gland compared to the other ducts.

In addition to the fact that saliva flows against gravity in the submandibular gland, the presence of more alkaline saliva in the submandibular gland, along with high mucin and calcium contents of the saliva, favor the higher incidence of sialolithiasis in the submandibular gland.

Commonly, sialoliths measure from 1 mm to <1cm. Giant salivary gland stones (GSGS) are defined in literature as those stones measuring over 1.5 cm and have been rarely reported in the medical literature.[2,3] GSGS measuring over 3 cm are extremely rare, with only few reported cases.[4] The aim of this article is to present a case of a giant sialolith in the light of the literature on GSGS.

Case Report

A 37-year-old gentleman presented to our Oral and Maxillofacial Surgery Department on May 2022. The patient was medically free and was complaining of hard swelling in the left submandibular area of about 8 months duration. He had no history of odynophagia, dysphagia, muffled voice, shortness of breath, or recent dental procedure. He gave a history of similar submandibular swelling episode one year ago and apparently the swelling resolved completely with no treatment. The swelling was not related to food intake, with no aggravating or relieving factors and no history of associated pain. On our initial evaluation, neck examination revealed asymmetry along the left submandibular area. On palpation, swollen area corresponded to the anatomic location of submandibular salivary gland.

The swollen area palpated bimanually (extra orally and through the mouth), it was hard and tender. The floor of mouth along the submandibular duct in left side was swollen, with no color changes of the surrounding mucosa. Neck ultrasound showed left submandibular duct stone.

Findings on blood and serum biochemistry were within normal limits. Medical management was started by intravenous antibiotic for 10 days, followed by left submandibular intraoral stone extraction with marsuplization of the duct two weeks later under general anesthesia. The calculus was dissected free [Figure 1]. The sialoliths was about 3.6 cm [Figure 3]. The patient had smooth recovery with no complications in follow-up. The symptoms resolved after operation.



Figure 1: Surgically Removed Sialolith



Figure 2: Radiographic Interpretation Of Sialolith

Discussion

The GSGS are rare findings in clinical oral pathology, all of them occurring in male patients.[5-9] The GSGS have been reported both in salivary glands and salivary ducts. Stones larger than 3 cm are rare.[10]

In 2002, Bodner reported that only few documented cases have been published in literature.[11] A review of literature in 2007[12] found 16 reported cases of salivary stones having a size up to 35 mm with the largest stone reported measured 55 mm.

The ability of a calculus to grow and become a giant depends mostly on the reaction of the affected duct. If the duct adjacent to the sialolith we can able to dilate it, so we allow nearly normal secretion of saliva around the stone by doing that, it might be asymptomatic for a long period till giant calculus will be created when stagnating happen ,bacteria accumulate that cause a sialo-oral fistula.

The inflammatory debris obstructs the residual narrowed duct lumen, resulting in an exacerbation of the inflammation. The resulting inflammatory process around a large stone may lead to tissue breakdown and spontaneous stone extrusion with developing complication as intraoral fistula formation.

Ultrasonography is one of the standard modalities used to diagnosis submandibular stone. On the other hand, 80.0% of long-standing giant submandibular stones are easily seen as most of them were calcified with time and became radiopaque on standard X-ray films. Only one-fifth of the submandibular stones will be missed radiologically on plain X-rays and mostly found with small stones.[13] The ultrasonography in addition of being an operator-dependent, it does not provide the surgeon with clear and direct anatomic localization of the stone.[14]

Although CT scan can pick up both small and large stones depending on the thickness of the cuts, accurate stones' localization is lacking.[15] Sialography conventionally has been considered the gold diagnostic standard and provides a good image of the ductal system.[15]

However, sialography carries an increased risk of ductal perforation and retrograde displacement of the stone with an effect of injection. Giant sialoliths of a remarkable size is a diagnostic and therapeutic challenge for the clinician; it needs careful evaluation prior management.[16] Submandibular stones are typically removed surgically by two ways either intraoral or extraoral approach.

The decision of the most appropriate mode of surgical treatment depends on multiple factors, mainly the location of the stone. Intraoral approach is often utilized when the stone is located anterior to the lingual nerve and artery because this method can lead to lingual nerve anesthesia.[16]

The anatomical location of the lingual nerve loops around the mid to distal portion of Warthin's duct before it enters the tongue, making the lingual nerves vulnerable for injury. As a general rule, for treating stones that are located entirely in the duct and close to the papillae, intraoral approach is ideal. On the other hand, for treating intraglandular stones and stones embedded within the hilum of the gland, extraoral approach is preferred with excision of the submandibular gland. Newer treatment methods are currently available such as extracorporeal short-wave lithotripsy and interventional sialendoscopy.

The newer management options are effective alternatives to conventional surgical excision, especially for smaller stone.[16] Transoral sialolithotomy with sialodochoplasty or sialadenectomy remains the gold standard management technique for giant stones.

Conclusion

Giant submandibular gland stone are rare. There are various methods available for the management of salivary stones, depending on the gland affected and stone location.

Asymptomatic giant sialolith of remarkable size may pose both diagnostic and therapeutic challenge for the clinician. Newer treatment modalities are effective alternatives to conventional surgical excision for smaller sialoliths.

However, for giant sialoliths, transoral sialolithotomy with sialodochoplasty or sialadenectomy remains the mainstay of management.

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