

## Submandibular sialolith in a geriatric patient: A case report

Sumana Devadiga<sup>1</sup>, Joel D'Silva<sup>2</sup>, Mahabaleshwara Chalataadka<sup>3</sup>, Rakesh Nair<sup>4,\*</sup>

<sup>1,2,3</sup>PG Student, Dept. of Oral & Maxillofacial Surgery, <sup>4</sup>PG Student, Dept. of Conservative Dentistry & Endodontics, KVG Institute of Dental Science

**\*Corresponding Author:**  
Email: rakeshendo@gmail.com

### Abstract

Calcifications found in the salivary ducts or glands are called sialolithiasis or salivary gland stones. Submandibular gland is most commonly affected followed by parotid. The treatment options include its surgical removal via dissection into the duct or the gland. We present a case of an 81 years male patient having large submandibular duct sialolithiasis which was treated by an intraoral surgical approach with a little overlook on to the literature.

**Keywords:** Sialolith, Calcifications, Submandibular

### Introduction

Salivary calculi is the most common disease of salivary glands. The salivary calculi are calcified structures also known as sialoliths, which consist of minerals like calcium phosphate, hydroxyapatite, magnesium, potassium and ammonia.<sup>(1)</sup> It is estimated that 12 in 1000 adult population are affected by sialolithiasis. Males are affected more than females. Children are affected least but on reviewing literature 100 cases of submandibular calculi were found in children aged 3 weeks to 15 year old.<sup>(2)</sup> According to Levy, et al,<sup>(1)</sup> the prevalence of submandibular gland sialolithiasis is 80%, 19% in the parotid and 1% in the sublingual glands.<sup>(2)</sup> Submandibular salivary calculi are the most common, this is due to more viscous nature of the saliva, longer duct and antigravity flow and high mineral content in saliva.<sup>(3)</sup> Clinically they appear yellow in colour with round or ovoid, rough or smooth surface anatomy and the minerals present within themselves are evenly distributed throughout.<sup>(2)</sup> Small sialoliths can be expelled out by milking the gland by local massaging or by the means of sialagogues like paraffin, citrus fruits and chewing gums.<sup>(1)</sup>

### Case Report

Mr. Lakshmayya, aged 81 years came to K.V.G Dental College with a chief complaint of pain in the left side of the floor of the mouth for the past three weeks. Pain is severe and intermittent. Pain is seen during mealtime and reduces after half an hour by itself. Patient was not having any relevant systemic diseases nor allergy to any medication.

On clinical examination, at the left floor of the mouth, at submandibular gland, at the level of first molar, there is a presence of a mass, measuring 1 × 1 cm in size and round in shape with well-defined borders. The mass was hard in consistency, mobile and tender on palpation.

Patient was advised for mandibular occlusal radiograph. X-ray revealed presence of radio-opaque

mass seen in the left body of the mandible at submandibular fossa, measuring around 2 × 3 cm in size, oval in shape.

Surgical excision of the salivary was planned under local anaesthesia via intra oral approach. Under all aseptic standard protocols patient was prepared. Lidocaine with adrenalin (1:100,000) was infiltrated locally around the swelling. Incision was placed over the floor of the mouth and dissected carefully and duct was incised and opened. Sialolith was retrieved out in a single piece which measured 1.9 x 1 cm in diameter. Wound toiletting was done with providone iodine 1% and normal saline. Haemostasis was achieved and duct was sutured to the floor of the mouth.

Post-surgical antibiotic regimen was given and healing was satisfactory. Patient is under regular follow up and surgical site is uneventful.





### Discussion

Majority of cases of submandibular sialolithiasis is non-symptomatic. Presenting complaint will be pain

and swelling which will aggravate while having food due to the obstruction in the salivary flow.<sup>(4)</sup> The treatment option for the salivary calculi depends on the position and size of stone, if the calculi is in the proximity in the duct or orifice it can be removed by application of moist heat, massage or by stimulating salivary flow by the means of sialagogues.<sup>(5)</sup> On reviewing the literatures sialoliths are usually 5 mm in diameter. Sialoliths more than 10 mm is considered as calculi of unusual size.<sup>(6)</sup> Our case had a single calculi of 1.9 cm in diameter in the duct and the patient was not having any co-morbidities so the surgery was planned accordingly. Diagnosis of sialolithiasis is mainly based on the clinical presentation. Sharp shooting pain which aggravates during meals is a typical clinical behaviour of sialolithiasis. This same clinical behaviour may occur even without any mechanical obstruction but literatures proves that 50% of the individuals showing this clinical presentation suffers from lithiasis. Along with the standard diagnostic aids for detection of sialolithiasis high resolution ultrasonography can be considered as optional diagnostic aid which will help in the detection of calcific deposits as well as exclusion of any growth.<sup>(7)</sup> The sensitivity of the conventional sialography for the detection of sialolith ranges from 64-100% whereas the specificity ranges from 88-100%. Now with the advent of digital sialography and digital subtraction sialography sensitivity increased to 96-100% whereas specificity remained same.<sup>(8)</sup> On reviewing the literatures, Reuter and Hausamen 1976 pointed out two findings 1) most of the sialolith found were in the posterior and middle portion of the duct. 2) Treatment done was sialolithotomy (removal of stone from the duct) and sialoadenectomy.<sup>(9)</sup> Submandibular sialolith is most common. Submandibular sialolith is most commonly found in the Wharton's duct (90%) whereas parotid calculi are mostly found in the gland itself.<sup>(10)</sup> Most of the submandibular calculi is found on the distal 3<sup>rd</sup> of the duct and can be taken out by simple surgical incision on the floor of the mouth and if the position is in close proximity to the duct it can be milked and manipulated through the duct orifice with the help of lacrimal probes and dilators.<sup>(2)</sup> If the size of the stone is too large and located in the proximal duct piezoelectric extracorporeal shock wave lithotripsy or surgical removal of either stone or duct is advised. Sialoendoscopy is the advanced treatment option and is minimally invasive procedure used to treat obstructions of the salivary ductal architecture.<sup>(3)</sup>

### Conclusion

The clinician should thoroughly evaluate swellings in the submandibular area as submandibular sialolith is the most common disease of the submandibular gland and ductal architecture.<sup>(3)</sup> There are various diagnostic measures as well as treatment options for salivary gland calculi depending upon the site size and location of the stone.<sup>(2)</sup> Even though numerous advances in the

treatment modalities have come up the conventional technique still holds the popularity and it is being done for treating most of the cases.<sup>(4)</sup> Giant asymptomatic salivary calculi may pose challenge to the therapeutic concerns. It is usually seen in males in the 4<sup>th</sup> to 5<sup>th</sup> decades of life with more predilection for the submandibular salivary gland.<sup>(5)</sup> Our case it was a male patient in his 8<sup>th</sup> decade of life. Trans-oral sialolithotomy, sialodochoplasty and sialadenectomy remains the standard treatment in sialolithiasis.<sup>(5)</sup>

## References

1. Franco A et al Massive Submandibular Sialolith: Complete Radiographic Registration and Biochemical Analysis through X-Ray Diffraction Case Reports in Surgery. Volume 2014, Article ID 659270, 4 pages.
2. M. Batori, G. Mariotta, H. Chatelou, G. Casella, M.C. Casella. Diagnostic and surgical management of submandibular gland sialolithiasis: report of a stone of unusual size. *European Review for Medical and Pharmacological Sciences* 2005;9:67-68.
3. Alkurt MT, Perker I. Unusually Large Submandibular Sialoliths: Report of Two Cases. *Eur J Dent* 2009;3:135-139.
4. Siddiqui S.J. Sialolithiasis: an unusually large submandibular salivary stone. *Br Dent J* 2002;193:89-91.
5. Santosh R. Patil. Large Sialolith of Left Submandibular Salivary Gland: A Case Report and Literature Review *Universal Research Journal of Dentistry*. 2015;Jan-Apr;5(1).
6. Babu L KT, Jain MK. Giant Submandibular Sialolith: A Case Report and Review of Literature. *International Journal of Head and Neck Surgery*. 2011;2(3):154-157.
7. Kopec T, Wierzbicka MSzyfter W, Leszczyn´ska M. Algorithm changes in treatment of submandibular gland Sialolithiasis. *Eur Arch Otorhinolaryngol* (2013)270:2089-2093.
8. Jäger L, Menauer F, Holzknrecht N et-al. Sialolithiasis: MR sialography of the submandibular duct--an alternative to conventional sialography and US? *Radiology*. 2000;216(3):665-71.
9. McCullom C, Lee C YS, Blaustein D I. Sialolithiasis in an 8-year-old child: case report. *Pediatr Dent* 1991;13:231-33.
10. Kraaij S, Karagozoglu KH, Forouzanfar T et-al. Salivary stones: symptoms, aetiology, biochemical composition and treatment. *Br Dent J*. 2014;217(11):E23.