

Surgical Excision of Unusual Sialolith in Floor of the Mouth: A Case Report

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DOI:10.21276/sjm.2019.4.4.10

Abstract

Sialolithiasis (also termed salivary calculi or salivary stones), is a condition where a calcified mass or sialolith forms within a salivary gland, usually in the duct of the submandibular gland (also termed "Wharton's duct"). In this paper we report a case of sialolith in a 45 year old male detected in the floor of the mouth. It was managed by surgical excision, followed by long term follow up of the patient.

Keywords: Sialolithiasis, sialolith, floor of the mouth.

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INTRODUCTION

Oral mucosa is constantly subjected to chemomechanical insults resulting in the variety of conditions and lesions [1]. A calculus (plural calculi) is a hard, stone-like concretion that forms within an organ or duct inside the body. Sialoliths are commonly seen in salivary gland ducts. They can be single or multiple with varying sizes. The usual symptoms are pain and swelling of the affected salivary gland, both of which get worse when salivary flow is stimulated, e.g. with the sight, thought, smell or taste of food, or with hunger or chewing. This is often termed "mealtime syndrome" [2]. Inflammation or infection of the gland may develop as a result. Sialolithiasis may also develop because of the presence of existing chronic infection of the glands, dehydration (e.g. use of phenothiazine), Sjögren's syndrome and/or increased local levels of calcium, but in many instances the cause is idiopathic. Obstructive salivary gland disease, or obstructive sialadenitis, may also occur due to fibromucinous plugs, duct stenosis, foreign bodies, anatomic variations, or malformations of the duct system leading to a mechanical obstruction associated with stasis of saliva in the duct [2]. Salivary stones may be divided according to which gland they form in. About 85% of stones occur in the submandibular gland [3], and between 5-10% occur in the parotid gland. In about 0-5% of cases, the sublingual gland or a minor salivary gland is affected.

[4] When minor glands are rarely involved, calculi are more likely in the minor glands of the buccal mucosa and the maxillary labial mucosa [5]. Submandibular stones are further classified as anterior or posterior in relation to an imaginary transverse line drawn between the mandibular first molar teeth. Stones may be radiopaque, i.e. they will show up on conventional radiographs, or radiolucent, where they are not visible on radiographs (although some of their effects on the gland may still be visible). They may also be symptomatic or asymptomatic, according to whether they cause any problems or not. [6] Diagnosis is usually made by characteristic history and physical examination. Diagnosis can be confirmed by x-ray (80% of salivary gland calculi are visible on x-ray), by sialogram, or by ultrasound. [7] Here we reported a rare clinical presentation of a solitary sialolith in a middle aged male patient.

Case Report

A 45 year old male patient, an existing denture wearer was referred to the Department of Oral Surgery from Department of Prosthodontics. The patient's chief complaint was an mild pain on the left side of the mandible on floor of the mouth. Patient was a controlled diabetic and hypertensive, and was under medication. Family history was insignificant. Extra orally no abnormality detected. Lymph nodes were non

palpable. The intraoral examination revealed a sessile soft nodule on the left lingual side of the mandible along the depth of lingual vestibule, which was covered by normal mucosa. On palpation, it was non-tender, oblong, multilocular, and firm in consistency, extending from distal of mandibular left canine to distal of mandibular left 1st molar on the lingual aspect of left mandibular region. On the basis of history and clinical findings a provisional diagnosis of Sialolith was given. Patient was informed about his condition and advised excision of complete lesion. Informed consent was obtained, blood samples were collected for preoperative tests. Hematological values were found to be within normal limits. Radiographic examination revealed no calcifications. Local anesthesia (lignocaine hydrochloride 2 % and 1:200000 adrenaline) was

injected; incisions were placed with scalpel blade no 15 along the anterior aspect of the lesion, reflected to expose the fibrotic growth present between the periosteum and mucosa (Figure 1 & 2). Once exposed, the anterior margin of the lesion was grasped with mosquito and tissue forceps to completely resect the growth along with the surrounding normal tissue (Figure-3 & 4). Complete hemostasis was achieved and the incision was sutured with 3-0 black silk suture. Patient was prescribed painkillers and 2% Chlorhexidine mouthwash during the post-operative period. The excised tissue measured 3.5x1.5x1.5 cm in dimensions (Figure-5). The mass was placed in a glass container with 10% formalin solution and sent for pathological examination. Post-operative follow up after 15 days showed satisfactory healing.



Fig-1: Incision And Reflection



Fig-2: Separating the Sialolith from the Periosteum



Fig-3: Removal of The Sialolith



Fig-4: Surgical Site after the Excision



Fig-5: Excised Sialolith

DISCUSSION

Sialolithiasis refers to the formation of calculi within a salivary gland. If a calculus forms in the duct that drains the saliva from a salivary gland into the mouth, then saliva will be trapped in the gland. This may cause painful swelling and inflammation of the gland. Inflammation of a salivary gland is termed sialadenitis. Inflammation associated with blockage of the duct is sometimes termed "obstructive sialadenitis". Because saliva is stimulated to flow more with the thought, sight or smell of food, or with chewing, pain and swelling will often get suddenly worse just before and during a meal and then slowly decrease after eating, this is termed meal time syndrome. Signs and symptoms are variable and depend largely upon whether the obstruction of the duct is complete or partial, and how much resultant pressure is created within the gland [8]. Pain, which is intermittent, and may suddenly get worse before mealtimes, and then slowly get better (partial obstruction) [9]. Swelling of the gland, also usually intermittent, often suddenly appearing or increasing before mealtimes, and then slowly going down (partial obstruction) [10]. Tenderness of the involved gland. Palpable hard lump, if the stone is located near the end of the duct. If the stone is near the submandibular duct orifice, the lump may be felt under the tongue. Lack of saliva coming from the duct. Erythema (redness) of the floor of the mouth. Pus discharging from the duct. Cervical lymphadenitis. Bad Breath [11]. Rarely, when stones form in the minor salivary glands, there is usually only slight local swelling in the form of a small nodule and tenderness [12]. There are thought to be a series of stages that lead to the formation of a calculus (lithogenesis). Initially, factors such as abnormalities in calcium metabolism [13], dehydration, reduced salivary flow rate, altered acidity (pH) of saliva caused by oropharyngeal infections, and altered solubility of crystalloids, leading to precipitation of mineral salts, are involved. Other sources state that no systemic abnormality of calcium or phosphate metabolism is responsible [14]. The next stage involves the formation of a nidus which is successively layered with organic and inorganic material, eventually forming a calcified mass [15]. In about 15-20% of cases the sialolith will not be sufficiently calcified to appear radiopaque on a radiograph, and therefore be difficult to detect. Salivary calculi sometimes are associated with other salivary diseases, e.g. sialoliths occur in two thirds of cases of chronic sialadenitis, although obstructive sialadenitis is often a consequence of Sialolithiasis. Gout may also cause salivary stones, although in this case they are composed of uric acid crystals rather than the normal composition of salivary stones. Some current treatment options are: Non-invasive for small stones, hydration, moist heat therapy, NSAIDs occasionally, and having the patient take any food or beverage that is bitter and/or sour. Sucking on citrus fruits, such as a lemon or orange, may increase salivation and promote spontaneous expulsion of the stone [16]. Some stones may be massaged out by a specialist. Other minimally

invasive are Sialendoscopy. Surgical excision is last option. Supporting treatment includes prevention of infection while the stone is lodged in the duct, antibiotics are sometimes used [17].

CONCLUSION

Sialolith are common lesions of the salivary glands which can be managed by correlating clinical history, surgical excisional biopsy and histological evaluation. The prognosis of the lesion after treatment depends on the treatment performed and also a periodic follow up to minimize the chances of recurrences.

REFERENCES

1. Seifert, G. (2000). *Diseases of the Salivary Glands. Berlin, Springer-Verlag.*
2. Ledesma-Montes, C., Garcés-Ortíz, M., Salcido-García, J. F., Hernández-Flores, F., & Hernández-Guerrero, J. C. (2007). Giant sialolith: case report and review of the literature. *Journal of oral and maxillofacial surgery*, 65(1), 128-130.
3. Rai, M., & Burman, R. (2009). Giant submandibular sialolith of remarkable size in the comma area of Wharton's duct: a case report. *Journal of Oral and Maxillofacial Surgery*, 67(6), 1329-1332.
4. Paul, D., & Chauhan, S. R. (1995). Salivary megalith with a sialo-cutaneous and a sialo-oral fistula: a case report. *The Journal of Laryngology & Otology*, 109(8), 767-769.
5. Graziani, F., Vano, M., Cei, S., Tartaro, G., & Mario, G. (2006). Unusual asymptomatic giant sialolith of the submandibular gland: a clinical report. *Journal of Craniofacial Surgery*, 17(3), 549-552.
6. Bodner, L. (2002). Giant salivary gland calculi: diagnostic imaging and surgical management. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, 94(3), 320-323.
7. Wallace, E., Tauzin, M., Hagan, J., Schaitkin, B., & Walvekar, R. R. (2010). Management of giant sialoliths: review of the literature and preliminary experience with interventional sialendoscopy. *The Laryngoscope*, 120(10), 1974-1978.
8. McGurk, M., Makdissi, J., & Brown, J. E. (2004). Intra-oral removal of stones from the hilum of the submandibular gland: report of technique and morbidity. *International journal of oral and maxillofacial surgery*, 33(7), 683-686.
9. Nahlieli, O., Eliav, E., Hasson, O., Zagury, A., & Baruchin, A. M. (2000). Pediatric sialolithiasis. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, 90(6), 709-712.
10. Harrill, J. A., King Jr, J. S., & Boyce, W. H. (1959). Structure and composition of salivary calculi. *The Laryngoscope*, 69(5), 481-492.
11. Capaccio, P., Torretta, S., Ottaviani, F., Sambataro, G., & Pignataro, L. (2007). Modern management of

- obstructive salivary diseases. *Acta otorhinolaryngologica italica*, 27(4), 161-72.
12. Williams, M. F. (1999). Sialolithiasis. *Otolaryngol Clin of North Am*, 32:819-834.
 13. Work, W. P., & Hecht, D. W. (1980). Inflammatory diseases of the major salivary glands. In: Papperalla MM, Shumrick, D. F, editors. *Otolaryngology*. Vol. 3. Philadelphia: W.B Saunders, 2235-2243.
 14. Flores, P. (2015). Giant sialoliths: literature review and report of one case with mouth floor perforation. *Journal of Surgical and Clinical Dentistry*, 5(1), 5-11.
 15. Walvekar, R. R., Carrau, R. L., & Schaitkin, B. (2009). Endoscopic sialolith removal: orientation and shape as predictors of success. *American journal of otolaryngology*, 30(3), 153-156.
 16. Regezi, J. A., Sciubba, J. J., Jordan, R. C., Abrahams, P. H. (2003). *Oral pathology: Clinical pathologic correlations*. 5th ed. St Louis: WB Saunders, 165-166.
 17. El Gehani, R., Krishnan, B., & Shehouni, M. I. (2010). Submandibular giant sialoliths: report of two cases and review of the literature. *ENT: Ear, Nose & Throat Journal*, 89(6).