

Giant Parotid Stone Causing Mucosal Ulceration and Pus Discharge: Report of a Rare Case

Marziye Sehatpour¹, Maryam Jalili Sadrabad¹, Mahtab Kheirkhahi², Shabnam Sohanian³

¹ Assistant Professor, Oral Medicine Department, Dental School, Semnan University of Medical Sciences, Semnan, Iran.

² Assistant Professor, Oral and Maxillofacial Radiology Department, Shahid Beheshti University of Medical Sciences, School of Dentistry, Tehran, Iran.

³ Assistant Professor, Oral and Maxillofacial Pathology Department, Dental School, Semnan University of Medical Sciences, Semnan, Iran.

Received 6 February 2020 and Accepted 12 September 2020

Abstract

Introduction: Sialolith is the most common condition of the salivary gland disorders after mumps, which usually occurs in the submandibular gland. A rare case of giant parotid sialolith is described. **Case Report:** A 58-years-old man with a complaint of swelling in the buccal area referred to the Department of Oral Medicine of the Dental School of Semnan University. A mild swelling was observed in the right cheek area in front of Ramus during the extraoral examination. Intraoral evaluation revealed a 2.5 × 2 cm swelling with same color of the mucous membrane, adjacent to the maxillary first molar at the Parotid Papilla area, and with a stony-hard consistency. In the radiographic imaging, an estimated 18×6 mm homogenous opaque lesion was recognized; hence, the sialolith diagnosis was suggested. Surgical removal with electrocautery was done and no complaints were reported one month after the surgery. **Conclusion:** Since giant sialolith can lead to complications which may affect patients' quality of life, surgical treatment of such lesion is strongly recommended.

Keywords: Giant, Sialolith, Parotid, Salivary gland

Sehatpour M, Jalili Sadrabad M, Kheirkhahi M, Sohanian SH. Giant Parotid Stone Causing Mucosal Ulceration and Pus Discharge: Report of a Rare Case. *J Dent Mater Tech* 2020; 9(4): 231-234.

Introduction

Sialolith (salivary gland stones or salivary gland duct calculus) is the second most common condition of the salivary gland disorders after mumps, and classifies into idiopathic dystrophic calcifications (1, 2). It accounts for approximately 30% of all salivary gland pathologies.² The incidence of sialoliths in males is 2 times more than females (aged between 30 to 60 years old), while its prevalence is about 0.1 – 1 % of the adult population. (1,2) Only 6- 15% of salivary gland calculuses are found in parotid gland whereas more than 80% of all cases occur in the submandibular gland or duct, and less than 2% in the sublingual and the minors (1- 3). The exact etiology is still unclear but some theories have been described including salivary stasis, inflammation of ducts, tumors and some chemical and neurogenic injuries or infection (2,3). The pathogenesis of salivary gland stones may be related to pH of the saliva (pH of the parotid salivary secretion is between 6.3 and 7.4) (4). The composition of sialoliths are organic and inorganic materials. Inorganic ones (such as hydroxyl apatite, carbonate apatite, whitlockite, brushite, magnesium, potassium and ammonium) present more than organic components. The organic components are glycoproteins, lipids, mucopolysaccharides, carbohydrates, desquamated epithelial cells and bacteria (2-4). The management and treatments of sialoliths depend on the location, size, number of stones and the extension of obstruction (2). Giant sialoliths are the salivary stones measuring larger than 15mm in diameter (1). Parotid stones are usually less than 10mm (4). In the following a

case of giant parotid sialolith with dimensions of 18×6 mm is reported.

Case Report

A 58-years-old man with a complaint of swelling in the buccal area referred to the Department of Oral Medicine of the Dental School of Semnan University. In history, it was noted that the lesion existed for 7 years with slow growth; nevertheless, the patient did not present due to hesitation. He was medically healthy. A mild swelling was observed in the right cheek area in front of Ramos during the external examination. While, in the intraoral inspection a 2.5 × 2 cm swelling with similar color to the mucous membrane was found adjacent to the maxillary first molar at the parotid papilla area with a stony-hard consistency (figure 1). Moreover, a surface ulceration was detected at the top of the lesion where some pus was releasing from Stensen duct entrance. In the radiographic imaging, an estimated 19×13.5 mm homogenous opaque

lesion was recognized; hence, the sialolithiasis diagnosis was suggested (figure 2). It was decided to remove the stone surgically with electrocautery (because of minimum bleeding, proper visibility and accessibility). After informed consent was obtained, the location of incision was selected to be out of the main duct at the anterior side of Stensen entrance to prevent ductal obstruction as well as mucocele formation in healing phase. The stone was extracted by an upward pressure and the wound was subsequently sutured (figure3). It should be mentioned that the total time of surgical process was about 10 minutes and the swelling disappeared at the end of the procedure. In addition, the patient felt comfortable immediately (figure 4). An interesting observation was that the actual size of stone after removal was 19×13.5 mm, which is a rare case. One month after the surgery, the patient referred for restorative treatment and he did not have any complaints of the former surgery.



Figure 1: in the intraoral inspection a 2.5 × 2 cm, same color of the mucous membrane swelling was seen



Figure 2: In the radiographic imaging, an estimated 19×13.5 mm homogenous opaque lesion was recognized



Figure 3: Picture of stone by excisional biopsy



Figure 4: Picture of closure and suturing after excision

Discussion

Commonly, sialolith is ovoid or round in shape, with yellowish color and smooth to rough texture (1). While sialoliths may be identified accidentally during imaging of the jaw without any symptoms, most of them have a series of signs and symptoms including swelling, pain (sometimes an acute lacerating pain, especially during meal time which disappears after 15 to 20 minutes), warm and erythematous skin, bad breath, foul taste, xerostomia and occasionally sand like foreign body in their mouth or the sensation of gritty (2-4, 7). Acute suppurative sialadenitis or abscess may be found in these patients (3). Predisposing factors for sialolith formation are local trauma, head and neck radiotherapy, some anatomic variations, foreign bodies, duct system malformation, systemic diseases (Sjogren, gout), medications (anti cholinergic or anti sialagogues), being elderly and renal impairment. (2, 6). Hence, taking comprehensive medical history and clinical examination has an important role in diagnosis of sialoliths (1). Bimanual palpation may reveal a reduced salivary flow and stone in most of the cases. Uncommonly giant sialoliths of parotid may expand or perforate mucosa of the oral cavity causing erosion or ulceration mimicking malignancy (3, 4).

The most common diagnostic imaging techniques are plain radiography (occlusal, panoramic, lateral oblique view), sialography, ultra-sonography, and high-resolution non-contrast CT (1, 2). Around 40% of parotid gland sialoliths and 20% of submandibular ones are not completely calcified. So they may be radiolucent in conventional radiographs due to the low mineral content, especially in parotid. Therefore, other imaging modalities like sialography need to be used (2).

The incidence of the salivary stone in sub mandibular gland is higher than the others due to several factors including longer duct, larger caliber, angulation against gravity that courses around the posterior aspect of the mylohyoid muscle, higher viscous saliva content, more alkaline, calcium, and phosphate, and slower salivary flow rate (3). Parotid stones consist of 49% inorganic and 51% organic material whereas submandibular sialoliths are composed of 82% inorganic and 18% organic materials (1). Sub mandibular sialoliths develop in the duct while parotid ones are commonly found in the parenchyma or hilum (3). There are several treatment modalities for sialoliths, based on the size and location. Some conservative management that is used for small calculi are increased hydration, moist heat, medication like sialagogues and gentle massage to stimulate milking of the duct. Small calculi can be managed by sialo endoscopy which is located more proximally. If there

was any infection, suitable antibiotic coverage should be prescribed (7).

Alternative treatment option of stones larger than 5 mm in diameter is extra or intra corporeal shock wave lithotripsy (ESWL/ ISWL). These methods utilize piezoelectric lithotripter to deliver a shock wave to break the stone to small parts. The fragments are then flushed out of the duct using secretagogues or spontaneous salivation. If the size of stone would be larger, distally positioned, or be intra parenchymal, invasive methods such as open surgical approach will be used (2, 3, 5, 8). There are some complications associated with surgery including infection, hemorrhage, post-operative hematoma, and possible facial nerve paralysis (especially in parotid surgery) that resulting in Frey's syndrome (2, 4). A new alternative for the traditional surgery is using of the 810 nm Diode laser that is safe for surgical removal of sialoliths (1). We used open surgery method because of the large size of the stone and the ideal intraoral access. After following up the patient, no complications were found.

Conclusion

Since, giant sialolith can lead to complications such as ruptured ducts, infection, decreased salivary flow, and xerostomia, which may affect patients' quality of life, surgical removal of such stones is strongly recommended.

Conflict of Interest

There is no conflict of interest.

Acknowledgment

There is no Acknowledgment.

References

1. Kayalvizhi E, Baliah J, Rangdhol V, Lakshman V. Giant Sialolithiasis-A Case Report and Review. *JSD*. 2014;4(2):30-33.
2. Gadipelly S, Srilatha T, Sheraz B, Vijaykumar N. Parotid Sialolith-A Case Report and Review of Literature. *IJCMR*. 2016;3(4):1211-1213.
3. Lim EH, Nadarajah S, Mohamad I. Giant Submandibular Calculus Eroding Oral Cavity Mucosa. *Oman Med J*. 2017;32(5):432-435.
4. Mustafa AB, Syed KB, Bhat S, Yunis M, Basheer SA, Elnager M, et al. Sialolithiasis Involving Parotid Gland: A Case Report and Literature Review. *Indian J stomatol*. 2015;6(3):76-78.

5. Sreetharan SS, Philip R. Unusual foreign body of parotid gland presenting as sialolithiasis: Case report and literature review. *Case Rep Otolaryngol.* 2012;2012.
6. Brown K, Cheah T, Ha JF. Spontaneous cutaneous extrusion of a parotid gland sialolith. *BMJ Case Rep.* 2016;10(5):1-3.
7. Foletti JM, Graillon N, Avignon S, Guyot L, Chossegros C. Salivary calculi removal by minimally invasive techniques: a decision tree based on the diameter of the calculi and their position in the excretory duct. *J Oral Maxillofac Surg.* 2018;76(1):112-118.
8. Kim JH, Kim MB, Chang SW, Kang JW. Sialolithiasis of an accessory parotid gland causing mid-cheek pain. *J Craniofac Surg.* 2017;28(3):216-217.

Corresponding Author

Shabnam Sohanian

Assistant Professor, Oral and Maxillofacial Pathology Department, Dental School, Semnan University of Medical Sciences, Semnan, Iran

Tell: (+98)9125572614.

Email: dr.sh.sohanian@gmail.com