

A Large Size Sialolith in the Wharton's Duct: A Rare Case Report

Aditi Rapriya , Jitender Kumar

Faculty of Dental Sciences, SGT University, Gurugram 122505, Haryana, India.

 **Corresponding author:**

Aditi Rapriya, Faculty of Dental Sciences, SGT University, Gurugram 122505, Haryana, India.

rapriyaaditi3006@gmail.com

Article History

Received: 30 July 2023

Accepted: 30 Dec 2023

Abstract

Background and Aim: Sialolithiasis is the second most frequent salivary gland disorder. However, giant submandibular sialoliths are uncommon. Herein, a case of an almond-shaped giant sialolith in the left submandibular duct measuring 3 cm x 2 cm is reported.

Case Presentation: A patient was presented complaining of pain, difficult chewing, and swelling of the floor of the mouth with purulent intraoral discharge. The ipsilateral submandibular gland was tender and enlarged, resulting in acute neck swelling. Submandibular sialolithiasis of the left Wharton's duct was primarily diagnosed. After blood testing and imaging, the sialolith was surgically removed in toto via an intraoral approach under local anesthesia. The symptoms receded postoperatively.

Conclusion: Sialoliths must be suspected in patients complaining of submandibular and facial pain. A careful history must be taken and imaging should be performed to confirm the diagnosis and precisely locate the calcifications.

Key Words: Submandibular Gland; Salivary Gland Calculi; Salivary Ducts

Cite this article as: Rapriya A, Kumar J. A Large Size Sialolith in the Wharton's Duct: A Rare Case Report. *J Res Dent Maxillofac Sci.* 2024; 9(2):129-131.

Introduction

Sialolithiasis is a common disorder of the salivary glands [1]. It has an incidence of 1 in 10,000 individuals, and the patients are in the age range of 30-60 years. It is more common in males. Approximately 85% of sialoliths occur in the submandibular glands; 34% of which, are localized in the Wharton's duct. Sialolithiasis occurs due to the presence of concretions in the salivary glands or ducts. Salivary stones are thought to be formed by deposits of mineral salts around the lesion which may be associated with disease recurrence. The size of sialoliths may

vary from less than 1 mm to a few centimeters. Salivary stones larger than 15 mm in diameter are known as giant salivary stones. Herein, a case of an almond-shaped giant sialolith measuring 3 cm x 2 cm in the left submandibular duct is reported according to the SCARE guideline [2].

Case Presentation

A 60-year-old male patient presented to the Department of Oral and Maxillofacial Surgery with a chief complaint of pain, difficult chewing, and swelling of the floor of the mouth with a

purulent discharge into the oral cavity. There was associated tenderness and enlargement of the ipsilateral submandibular salivary gland, causing acute swelling of the neck. The patient's medical history was irrelevant. No abnormalities were noted on extraoral examination. Intraoral examination showed a pale-yellowish stony hard structure protruding from the right Wharton's duct orifice (Figure 1). An orthopantomogram was requested which revealed a 2 cm x 3 cm calcification at the anterior portion of the submandibular duct near its orifice in the floor of the mouth and medial to the lower left canine up to the first molar. The orthopantomogram and occlusal radiograph were both suggestive of submandibular duct sialolith (Figures 2 and 3).



Figure 1. Left Wharton's duct stone at the floor of the mouth



Figure 2. Orthopantomogram showing left submandibular calculus



Figure 3. Occlusal radiograph showing the position of sialolith

Lidocaine with 1:200,000 epinephrine was administered to surgically excise the sialolith. A mucosal incision was made over the stone, medial to the sublingual fold. Blunt dissection was done. The stone was identified by bimanual palpation (Figures 4 and 5). To avoid slipping, a 3-0 silk suture was placed posterior to the stone, and on the tongue for retraction. An almond-shaped stone measuring 2 x 3 cm was removed in toto using forceps, followed by suturing of the mucosal layer. The symptoms receded postoperatively. Recanalization was observed after a few weeks. The patient is on regular follow-up with no complaints.



Figure 4. Surgical removal of the sialolith



Figure 5. Giant sialolith measuring 2 x 3 cm

Discussion

Sialolithiasis is the most frequent disorder of the salivary glands accounting for about 1.2% of ipsilateral major salivary gland swellings. The submandibular glands are most susceptible to sialolithiasis with 80% occurrence rate, followed by the parotid glands (19%) and the sublingual

glands (1%) [1]. This condition may occur at any age, but more frequently in the third to sixth decades of life. Salivary gland stones are usually small measuring from 1 mm to less than 1 cm, with a mean size of 6-9 mm. Giant sialoliths are rare and are considered large if they exceed 1.5 cm in size [3]. The etiopathogenesis of the submandibular salivary gland calculi may include the followings:

- 1) The submandibular excretory duct is wider in diameter and longer than the Stenson's duct.
- 2) The salivary flow is against the gravity in the submandibular glands.
- 3) The salivary secretion of the submandibular glands is more alkaline in nature as compared to the pH of the parotid saliva.
- 4) Presence of mucin proteins in the submandibular saliva, while the parotid saliva is entirely serous.
- 5) Calcium and phosphate contents of the submandibular saliva are higher than other salivary glands [4].

The differential diagnosis includes dystrophic calcification of the lymph nodes (with a cauliflower-like appearance), a radiolucent phlebolith, palatine tonsiloliths (multiple and punctuate), and hemangiomas with calcification [5]. The treatment options for salivary gland stones generally depend on the location of the stone [5]. If the stone is small, warm, moist compresses, massage of the gland, etc. can be opted to remove them. Also, sialogogues can be used to promote salivary secretion to evacuate the stones out of the duct [6].

If the gland is damaged by recurrent infections and fibrosis or stones have formed in the gland, then the gland may need to be removed [6,7]. Salivary gland resection is the mainstay of surgical management for most intraglandular calculi [6,8]. New alternative treatment options include shock wave lithotripsy, salivary gland endoscopy, interventional radiology, endoscopic video-assisted oral lithotripsy [9], and intraductal laser fragmentation [10].

Conclusion

Giant sialoliths larger than 3 cm are rare, and are among the causes of submandibular gland dysfunction.

Patient Consent

Written informed consent was obtained from the patient for the publication of clinical data and images.

Financial support and sponsorship

None.

Conflicts of Interest

No conflict of interests to declare.

References

1. Pachisia S, Mandal G, Sahu S, Ghosh S. Submandibular sialolithiasis: A series of three case reports with review of literature. *Clin Pract*. 2019 Mar 20;9(1):1119.
2. Agha RA, Borrelli MR, Farwana R, Koshy K, Fowler AJ, Orgill DP; SCARE Group. The SCARE 2018 statement: Updating consensus Surgical CAse REport (SCARE) guidelines. *Int J Surg*. 2018 Dec; 60:132-6.
3. Ledesma-Montes C, Garcés-Ortíz M, Salcido-García JF, Hernández-Flores F, Hernández-Guerrero JC. Giant sialolith: case report and review of the literature. *J Oral Maxillofac Surg*. 2007 Jan;65(1):128-30.
4. Arifa SP, Christopher PJ, Kumar S, Kengasubbiah S, Shenoy V. Sialolithiasis of the Submandibular Gland: Report of Cases. *Cureus*. 2019 Mar 6;11(3): e4180.
5. Raksin SZ, Gould SM, Williams AC. Submandibular duct sialolith of unusual size and shape. *J Oral Surg*. 1975 Feb;33(2):142-5.
6. Drage NA, Brown JE, Escudier MP, McGurk M. Interventional radiology in the removal of salivary calculi. *Radiology*. 2000 Jan;214(1):139-42.
7. Siddiqui SJ. Sialolithiasis: an unusually large submandibular salivary stone. *Br Dent J*. 2002 Jul 27;193(2):89-91.
8. Bodner L. Giant salivary gland calculi: diagnostic imaging and surgical management. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2002 Sep;94(3):320-3.
9. Rai M, Burman R. Giant submandibular sialolith of remarkable size in the comma area of Wharton's duct: a case report. *J Oral Maxillofac Surg*. 2009 Jun;67(6):1329-32.
10. Walvekar RR, Bomeli SR, Carrau RL, Schaitkin B. Combined approach technique for the management of large salivary stones. *Laryngoscope*. 2009 Jun;119(6):1125-9.