



SUBMANDIBULAR DUCT SIALOLITHIASIS- A CASE REPORT

Anjana Sailan *,Gowri Parvathy S R, Anusreeraj R S

Department of Pharmacy Practice, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Neyyatinkara, Thiruvananthapuram, Kerala, India

*Corresponding author E-mail: anjanasailan1010@gmail.com

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ABSTRACT

Sialolithiasis or salivary gland stone is a salivary gland disorder that occurs most commonly in the submandibular duct due to its anatomical properties. The main causes for the development of salivary gland stones include dehydration, smoking, gout, trauma etc. Sialolithiasis is most commonly identified by symptoms like swelling and pain of mouth usually while consuming food. For small stones conservative therapies like milking of ducts with palliative therapy has shown better management. But when the stones are large size surgical management should be done. In this case report, one case of sialolithiasis in the submandibular duct is discussed. A 63 year old female patient was admitted with chief complaints of pain on lower tooth region and difficulty in mastication and swallowing. Through the examination and CT scan sialolith was identified and was surgically removed after providing symptomatic treatment. The symptoms experienced by the patient and the treatment modalities used are discussed in this paper.

INTRODUCTION

Sialolithiasis is a rare condition characterised by the formation of calcified mass or sialolith in the salivary gland or ducts. Commonly they are known as salivary gland stones. Salivary gland stones is estimated to affect 1/10000- 1/30000 individuals and the incidence is higher in an age group of 30-60 years. The calculi are normally composed of calcium and may contain magnesium, phosphate, potassium, ammonium etc. Salivary stones can develop in parotid gland, submandibular gland, sublingual gland and the minor salivary glands. Of these glands sialolithiasis mostly occur in the submandibular duct. The higher incidence of submandibular duct sialolithiasis is due to several factors including:

- Due to its anatomical peculiarities like wider diameter and being long compared to other ducts.
- The salivary secretions from this gland contains more amount of mucin proteins and hence they are mucoid in

- Nature while the parotid gland produces serous secretions.
- The salivary flow in the gland is against the gravity hence slow salivary flow.
- The submandibular saliva contains large amount of calcium and phosphate than other glands and the secretions are more alkaline.

The most common causes of sialolithiasis include dehydration, smoking, trauma, medications that causes dry mouth [anticholinergics, diuretics], gout, radiation therapy of the mouth etc. Dehydration is the most common etiology for the development of sialolithiasis. Dehydration results in thickening of the saliva due to decreased water content, this can lead to accumulation and crystallization of calcium carbonate and calcium phosphate in saliva. This results in the formation of calcium-phosphorus compounds containing magnesium [whitlockite] within the organic material. This whitlockite then transform into more stable

hydroxyapatite crystallites which then grow in layered structures to form stones.

Symptoms of sialolithiasis is usually unilateral in nature. Sialolithiasis is commonly associated with symptoms like:

- Pain in face and mouth that worsen during meals.
- Difficulty in opening mouth
- Swelling in the affected area
- Difficulty in mastication and swallowing
- Dry mouth
- Gritty tasting saliva
- Redness over the affected area

Salivary gland stones are primarily diagnosed based on symptoms and more accurately it can be diagnosed using an X-ray, ultrasound, CT scan of the face. Surgical management of sialolithiasis includes extracorporeal lithotripsy, sialendoscopy and surgery. Pharmacological management consists of antibiotics and anti-inflammatory agents.

CASE REPORT

A 63 year old female patient was admitted in the Oral and Maxilla Facial Surgery department of a Tertiary Care Hospital with chief complaints of pain on lower tooth region for 2 days and difficulty in mastication and swallowing. She has no family history and social history like alcohol consumption or smoking. Her past medical history include: Diabetes mellitus (10 years), Hypertension (5 years) and Dyslipidaemia (5 years). Her past medication history suggest that she was taking Glimepiride, Amlodipine and Atorvastatin.

On examination the vitals are found to be: temperature (99.6°F), respiratory rate (30 breaths/min), pulse rate (80 beats/ min) and BP (140/80 mmHg). On physical examination she was found to be conscious, swelling and ulceration noted in the floor of the mouth. Oral examination suggest periodontally compromised anterior teeth, difficulty in mouth opening and tongue elevated on right half. Extra oral examination reveals swelling on lower right side of cheek and pain on palpitation. Her laboratory findings shows an elevated ESR [55 mm/hr] and CRP [51.3 mg/dL].

Plain CT Study of Mandible and Submandibular Gland: 2 calculi noted in right submandibular duct [1.6*1.0 cm and 1.5*0.8 cm]. Surrounding oedematous changes and inflamed fat noted in floor of mouth with mass effect over the right lower lateral aspect of tongue. Edentulism noted

- Right submandibular gland appear bulky measuring 2.5*2.3 cm.
- Mucosal thickness in B/L maxillary sinus.

Impression of CT study: Right sialadenitis with sialolithiasis and inflammatory changes in floor of the mouth.

She was treated with Amoxicillin [1.2g BD], Metronidazole [500 mg TID], Acetaminophen [1 g OD], Dexamethasone [4 mg BD], Ceftriaxone [1.5 g BD], Chymoral forte [BD]. Sialolith excision and submandibular duct exploration was carried for the surgical removal of salivary gland stone. Patient looked better with the given treatment and was discharged with following medications like, Tab Amoxicillin/clavulanate [625 mg BD], Tab Metronidazole [500 mg BD], Aceclofenac/Paracetamol [100/325 mg BD], Tab Pantoprazole [40 mg OD] and Multivitamin for 5 days. Also she was asked to continue the past medications.

DISCUSSION

Sialolithiasis is a rare salivary duct disorder that occurs mainly due to dehydration, gout, trauma, radiation etc. Sialoliths should be always considered in case of experience of pain in the facial and mouth area mainly associated with meal. In this patient the features like pain on lower tooth region and difficulty in mastication and swallowing was present. Also the CT study revealed presence of 2 calculi in the submandibular duct. Management was done using antibiotics, corticosteroids and analgesic. Surgically managed using sialolith excision and submandibular duct exploration.

CONCLUSION

This paper focuses on the clinical features, diagnostic criteria and treatment modalities of sialolithiasis with respect to a case on submandibular sialolithiasis. Also discusses the main causes, pathogenesis, main clinical features, diagnostic criteria and management of the salivary gland stone.

REFERENCES

1. Sandeep Pachisia, Gaurav Mandal, Sudipto Sahu, Sucharu Ghosh. Submandibular sialolithiasis: A series of three case reports with review of

- literature. Clinics and Practice 2019; volume 9:1119:32-37
2. Lakshmi Shetty, NileshKhandelwal, TrivinaDomah, DeepikaSeshagiri, PritiTalele, Uday Londhe. Submandibular sialolith – a case report. Journal of Oral Disease Markers (2019), 3, 1–3
 3. Rai M, Burman R. Giant submandibular sialolith of remarkable size in the comma area of Wharton’s duct: a case report. J Oral MaxillofacSurg 2009;67:1329-32.
 4. Lustmann J, Regev E, Melamed Y. Sialolithiasis. A survey on 245 patients and a review of the literature. Int J Oral MaxillofacSurg 1990;19:135-8.
 5. Boynton TT, Lieblich SE. Unusual case of a sialolith: a case report. Oral Surg Oral Med Oral Pathol Oral Radiol 2014;117:e9-e10.