

Submandibular Sialolithiasis

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Abstract

Salivary gland stone is the most common disease of salivary glands. Submandibular gland or its duct is a major site of sialolithiasis and a common cause of acute and chronic infections. This case report presents a patient with submandibular gland sialolith, subsequent patient management, diagnosis and various treatment modalities available for the management of salivary gland calculi depending on their site and size.

Keywords: Submandibular salivary gland, Sialolithiasis, Sialolith

Introduction

Sialolithiasis is the most common disease of salivary glands and is characterized by obstruction of salivary secretion by calculation inside the duct or even in the glandular parenchyma [1]. It's more common in males with a male to female ratio of 2:1 and the incidence is high in the third to sixth decade of life [2,3]. Sialoliths causes obstruction of salivary flow and episodes of local pain and edema, especially during meals [4].

Calcium phosphate with a smaller amount of carbonates in the form of hydroxyl apatite, potassium, magnesium, and ammonia are the components of salivary stone. Sialoliths is more common in the Submandibular salivary gland, which contain more (82%) of inorganic material than other salivary gland stones [5]. The clinical symptoms are obstruction manifested by pain and swelling of the involved gland during eating when salivary flow is stimulated against a fixed obstruction [6].

Case Report

A 22 year-old male patient presented with a chief complaint of pain and swelling in the lower right side of face since three years. The pain is mild and intermittent with small swelling in the beginning and starts to increase in the size of swelling and pain on intake of food. There was a recurrent swelling during meals and subsides by itself after meal.

The patient also complains of dry mouth since 1 year with difficulty in swallowing and speaking. He has no family /personal history of other chronic medical cases.

Extra-oral examination revealed 2.2x3 cm firm, palpable, tender, and oval shaped swelling on right lower jaw. Intra-oral examination revealed a large, firm, and tender swelling in the right anterior floor of mouth in the region of the submandibular duct with inflamed and ulcerated orifice. On milking the gland, pus discharge was seen through the orifice and the orifice was ulcerated. The swelling was found 1 centimeter posterior from Wharton's duct orifice. As the calculus is near to the orifice of the duct I planned non surgical removal of the stone by milking from posterior to anterior direction pushing the calculi towards the orifice and the calculi was easily removed from the duct and a course of analgesics and antibiotics were prescribed and recalled after a week for checkup.

Diagnosis

Diagnosis of salivary gland stone deserves careful history taking and physical examination. Pain and swelling of the concerned gland at mealtimes and in response to other salivary stimuli are especially important. Complete obstruction causes constant pain, swelling, xerostomia (dry mouth) and pus may be seen draining from the duct and signs of systemic infection may be present [7].

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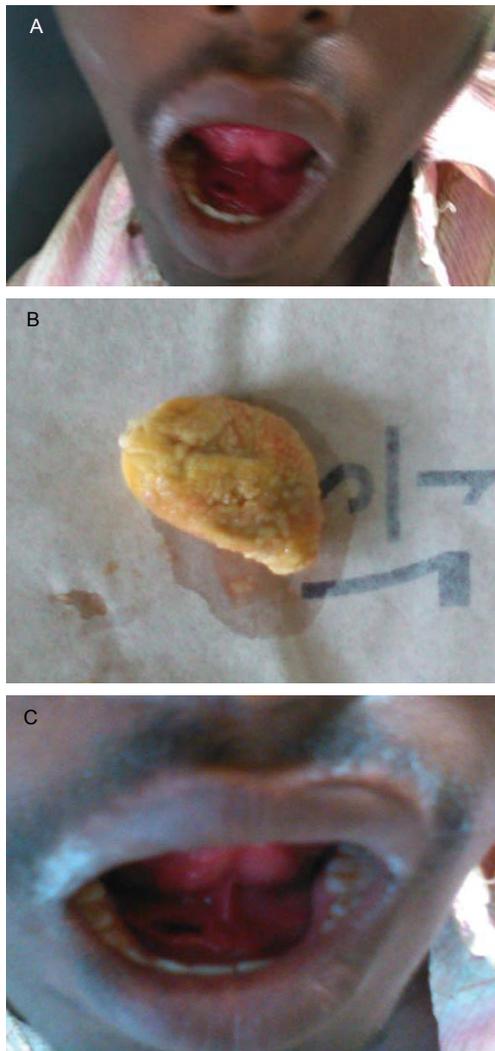


Figure 1: A: Submandibular duct orifice, showing the presence of ulceration before the removal of the stone. B: submandibular salivary gland stone. C: The orifice of the duct after the removal of the sialolith

In this case, the patient complained of continuous and intermittent pain and unilateral swelling during mealtime in the region of right submandibular salivary gland. On clinical examination there is pus discharge through the orifice and swelling 1cm from the orifice of the duct. The diagnosis was done by taking history and clinical examination (Figure 1).

Discussion

The sialolith was a single stone of 21 mm in length and 14 mm in diameter which is large relative to the cases found by Dr. M. BATORI [8] (13 mm x 7 mm) and by Leung et al. [2] (14 mm x 9 mm). Giant sialolithiasis usually locates in the submandibular gland since its excretory duct is longer and wider; saliva in the submandibular gland flows against gravity; its secretion is more alkaline; and it contains a higher quantity of mucin proteins, calcium, and phosphate [9].

The incidence of sialolithiasis is shown to be high in males and in the third to sixth decade of life which supports the case of this report (22 years, male) [2,3].

Duration of symptoms before patients present in a clinic varies considerably. The mean duration of symptoms is approximately five years and four months for sub- mandibular stones and four years and ten months for parotid stones [10]. In this case the patient presents to dental clinic after three years when he had frequent episodes of pain and swelling in the submandibular area. Submandibular stones slowly increase in size, remaining asymptomatic for a long time.

Treatment objective of the salivary stones, as for the standard stones, is to restore function of the affected salivary gland. Conventional treatment depends on the location of the sialolith and can be intra- or extra-oral. Small Sialoliths located near the orifice of the submandibular duct can be removed by manipulation or by submandibular duct catheterization and dilatation. Sialoliths located up to the anterior half of the duct are generally treated by conservative surgery, preferably via an intra-oral approach [11]. In this case non surgical removal of the stone with milking the duct is done since the stone is near to the orifice of the duct.

Conclusion

Sialoliths with long duration of pain and swelling can be easily diagnosed by careful history and clinical examination. Sialoliths which occurred near to the orifice of the duct are better to be done by manual manipulation to avoid the damage of the gland.

Consent

The study subject was briefed for the aim of this case report and asked for consent. After the patient agrees and signs the consent, relevant information was collected.

Acknowledgement

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Conflict of Interest

There is no conflict of interest.

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