

Salivary gland calculus A painless and self- regressing swelling - A case report

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Citation of this Article: Dr. Arpan Manna, Dr. Tanha Khan, Dr. M. K. Sunil, Dr. Upender Malik, “Salivary gland calculus A painless and self- regressing swelling - A case report”, IJDSIR- April - 2022, Vol. – 5, Issue - 2, P. No. 355 – 358.

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Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Salivary gland disorder occurs commonly because of salivary calculi, which may occur at any age and involve any of the salivary glands. Most of the cases of sialolithiasis occurs in submandibular salivary gland as its duct are most prone and common for acute and chronic infections. The symptoms include decreased or obstructed salivary flow. This case report presents a case of patient with sialolithiasis of submandibular gland and its treatment. It also includes etiology, signs and symptoms, diagnosis and various treatment modalities.

Keywords: Submandibular salivary gland, sialolith, occlusal radiograph

Introduction

Sialolithiasis is common for large salivary glands and it accounts for more than 50% of salivary gland diseases. Submandibular gland and its duct accounts for majority of the cases constituting for 80% of cases, parotid gland accounts for 6% of the cases and sublingual and other minor salivary glands accounts for 2% of the cases. Males are more commonly affected as compared to females.³ Bilateral or multiple sialolithiasis is not much common and may occur in 3% of total reported cases. Salivary calculi does not cause dry mouth and are found usually unilaterally. These stones consist of organic and inorganic materials. Submandibular calculi are composed of approximately 18% of organic and 82% of

inorganic constituents. On the other hand, parotid calculi are composed of 51% of organic and 49% of inorganic constituents.^{1,2,3,4,5}

Case Report

A 32-year-old male patient reported to the department of Oral Medicine and Radiology with the chief complaint of recurrent swelling in left lower jaw since 5 months. As per the patient, he had taken antibiotics for the same. The patient mentioned that the swelling used to appear just before meal times and get subsided gradually over 1-2 hours. He also mentioned that pain used to occur during that time.

On extraoral examination, right submandibular gland was palpable. On intraoral examination, no such odontogenic cause was located. On palpation, small firm nodular, non-tender mass was palpable in left floor of the mouth in the region of the submandibular duct. Bimanual palpation of gland showed mild tenderness and enlargement. On milking of the gland, the salivary flow was seen to be reduced on left side. Radiographic examination confirmed a radiopaque structure in the duct of the submandibular gland. After correlating the clinical and radiographical findings, final diagnosis of "Sialolithiasis of Submandibular gland" was made.

Discussion

Salivary gland calculi most commonly appears as yellowish white to brown in colour. They do not have a regular shape. Submandibular sialolith constitutes of 18% of organic and 82% of inorganic substances. The inorganic material includes mostly calcium phosphate and carbonates as hydroxyapatite and also magnesium, potassium and ammonia in smaller amounts. Carbohydrates and amino acids form the organic components.^{1,3,5}

The exact pathogenesis of sialolith formation is not known. According to some literature, it occurs due to

stagnation of calcium rich saliva. Formation of calculi occurs in two phases: a central core and layered periphery as stated by Cawson R et al.² The central core is formed by precipitation of salts consisting of organic substances. The layered periphery consists of both organic and inorganic substances as given by Rauch S et al.⁸ Submandibular calculi is more common as compared to the parotid calculi. This is because saliva produced from submandibular gland is more alkaline in nature, has an increased calcium and phosphate concentration and has more mucous content.^{2,6,9,10}

Additionally, salivary duct of submandibular gland is longer and has antigravity flow. Systemic disorders related to calcium metabolism can also lead to formation of sialolithiasis.⁵ Systemic disease like Gout can also contribute to this. Sialolith causes pain and swelling of the salivary gland by causing obstruction of salivary secretion. According to the literature given by Williams M et al, this causes stasis of saliva leading to bacterial growth and infection which ultimately leads to pain and swelling.^{5,9,11}

Proper history and examination can lead to correct diagnosis. Swelling and pain of salivary gland during salivary secretion as such during mealtimes can lead to the diagnosis according to Pollack C et al. Bimanual palpation of floor of the mouth may reveal presence of palpable stone which is similar to our case. According to Isacson G et al, Sialolithiasis can be diagnosed properly with the help of radiographic modalities which includes occlusal radiographs. Occlusal radiographs can show radiopaque calculi and stones properly. Sialography is also useful for this. This can be used in patients with sialadenitis or deep submandibular and parotid calculi.^{5,12,13}

Treatment of sialolithiasis includes conservative management where small stones can be flushed out of

the duct by applying moist heat and gland massage and sialagogues are given to promote salivary secretions as given by Pietz D et al.¹⁴ If infection is present, then penicillinase resistant antibiotic course should be prescribed.^{12,14} Sometimes, submandibular calculi lies in the distal part of the duct and simple surgical incision in the floor of the mouth can cause release of the stone.¹⁵

Conclusion

Proper examination of the patient can lead to correct diagnosis and prompt treatment. Management of this usually depends on the salivary gland involved as well as the location of the stone. Dentists must be aware of all the signs and symptoms of this disease. Various diagnostic investigations should be considered immediately after the provisional diagnosis in order to provide prompt treatment. Correct and timely diagnosis of the disease is of utmost importance so as to deliver proper treatment modalities to the patients.

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Legend Figure



Fig 1: Extraoral swelling seen in lower left submandibular region

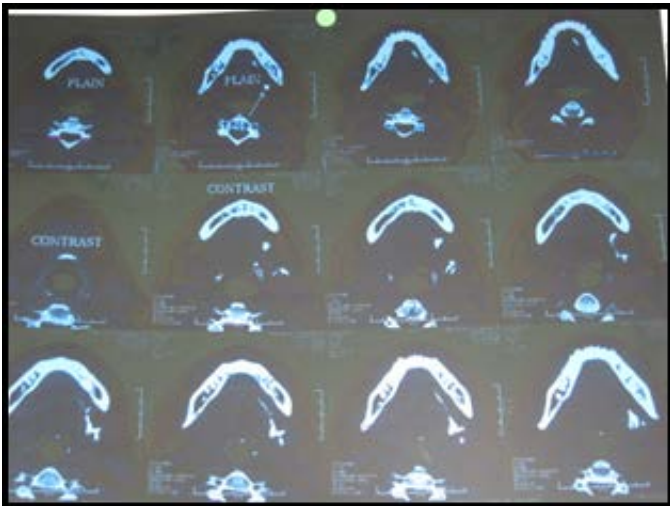


Fig 2: CT Scan showing submandibular salivary stone



Fig 3: Excised Sialolith