

Case Report

Giant Sialolith -A Rare Case Report

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Abstract: Sialolithiasis is the most common disease of salivary glands. Its estimated frequency is 1.2% in the adult population. Sialoliths most commonly occur in the submandibular glands. A history of pain or/and swelling in the salivary glands, especially during meal suggests this diagnosis. For small and accessible stones conservative therapies like milking of ducts with palliative therapy can produce satisfactory results. Surgical management should be considered when the stone/stones are inaccessible or large in size as conservative therapies turned out to be unsatisfactory. In this paper, we present a case of 55-year-old male patient resenting painful swelling and a giant submandibular gland sialolith. The sialolith usually measures from 1 to <10 mm. Giant Sialoliths are classified as those exceeding 15 mm in any one dimension. This case report describes a patient presenting with an unusually large sialolith (megalith), which was in size 2.5 x 3cm, the subsequent patient management, etiology, diagnosis, and treatment.

Keywords: Sialolithiasis; Submandibular sialolith. Occlusal radiography.

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INTRODUCTION

Approximately 1.2% of unilateral major salivary gland swellings are caused by the most prevalent salivary gland disorder, sialolithiasis. Sialolithiasis most commonly occur in the submandibular gland with 80% occurrence rate, due to the anatomy of this duct being long and its flow of saliva against gravity [1]. The type of salivary secretions from the submandibular gland is also more mucoid in nature as opposed to the more serous secretions from the parotid gland. Incidence is higher among males aged between 30 and 60 years [2]. Sialolithiasis is characterized by obstruction of the salivary secretion by a calculus. This is associated with pain and inflammation and most pronounced during meals and also in some occasions with an infection of the affected gland [3]. In this paper we present a case of large (>8mm) sialolith of the submandibular gland, treated with transoral sialolithotomy.

CASE REPORT

A 55-year-old male patient reported with a chief complaint of swelling below tongue and difficulty in swallowing since 3months. History of present illness revealed recurrent episodes of pain, difficulty in swallowing for the last 2-3 years. The last episode occurred 3 months prior to the visit and the pain has been persistent since. On extraoral examination, a diffuse swelling over the left submandibular region was found. On bimanual palpation left submandibular gland was firm and tender and a single tender left submandibular lymph node was palpated. Intraorally left submandibular duct opening was inflamed and erythematous along with a diffuse swelling and an ulcer covered with pseudomembranous slough (Figure 1). On palpation the swelling was firm to firm on palpation, running from 1 cm posterior to the ductal opening to the base of the tongue posteriorly. Also, mild elevation of the tongue was seen. The mandibular cropped occlusal radiograph revealed a single ovoid radiopacity of size approx. 2.5 x 3cm (Figure 2). On the basis of clinical and radiological findings, we diagnosed the case as a left submandibular sialolithiasis. All preoperative

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investigations were under normal limits and the patient was under antibiotic coverage. Under local anesthesia, an intraoral incision was made in the floor of the mouth.

The duct was opened and the sialolith was removed in a single piece. It was 2.3 cm in length and 1 cm in diameter (Figure 3).



Fig 1: Ulcer covered with a pseudomembranous slough

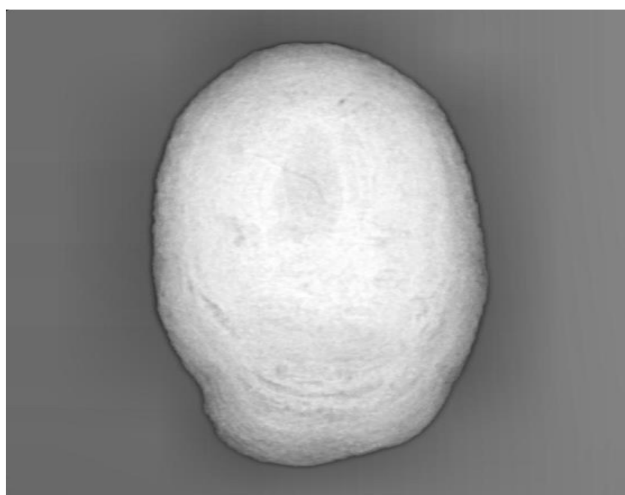


Fig 2: Cropped Mandibular occlusal radiograph



Fig 3: Sialolith of 2.3 cm in length and 1 cm in Diameter

DISCUSSION

The submandibular gland is located within the submandibular triangle, which is bounded inferiorly by the jaw and anteriorly and posteriorly by the digastrics muscle. A sizable surface portion and a little deep lobe

make up the gland. On the medial side of the gland, Wharton's duct exits. Sialoliths are condensations of calcium salt primarily calcium phosphate in the form of hydroxyapatite with small amounts of magnesium carbonate and ammonium. Wakely reported the distribution of sialoliths: 64% in submandibular gland

and duct, 20 % in the parotid gland and duct and 16% in the sublingual gland and duct [4]. Sialolithiasis is more prevalent in men than in women and is rarely found in children. Most cases (75%) of sialolithiasis occur on one side of the gland, 3% occur bilaterally, and 1.2% of cases will atrophy. The gland most commonly affected is the submandibular gland (80% to 92% of cases) followed by the parotid gland (6% to 20%) and the sublingual and minor salivary glands (1% to 2% of cases) [1].

The majority of sialolith typically have a maximum diameter of 5 mm, and any stones larger than 10 mm should be reported as sialoliths of unusual size. Furthermore, they are classified as giant in case any dimension exceeds 15 mm. One of the largest sialoliths of 72 mm size was reported by Rai and Burman [5]. The present case reported with 23mm which is classified as a giant sialolith.

The cause of sialolith development is unknown. However, data indicate that the creation of intracellular micro calculi serves as a foundation for the production of stones. Dyschylia and increasing microlith formation lead to an increased level of bacteria, which then leads to focal obstruction and atrophy of acinar cells, ultimately causing secretory disturbances. Another theory attributes the formation to an increase in calcium and phosphate salts [6], which, in turn, form a deposition along with desquamated cells, salivary mucus, and bacteria. Factors like stagnation of salivary flow, dehydration, and change in salivary pH associated with oropharyngeal sepsis, impaired crystalloid solubility, high alkalinity, and increased calcium content, and physical trauma to salivary duct or gland may predispose to calculus formation [7].

The literature describes two phases of sialolith formation: The formation of a central core and a layered periphery, respectively. Firstly, mineral salts bound by certain organic substances precipitate to form the central core. Then, in the second phase, some organic and inorganic materials deposit around the central core in layers [8]. The present case radiograph showed central core and layered periphery formation.

Swelling and pain are the cardinal signs of sialolithiasis, and proper diagnosis depends on taking adequate patient history along with a clinical evaluation [9]. X-ray imaging can help in the diagnosis, but smaller or hypomineralized calculi can only be found via other radiographic methods like sialography, ultrasound, CT, magnetic resonance imaging (MRI), scintigraphy, and sialoendoscopy [10].

Sialography is a technique to detect salivary gland calculi and visualize the whole duct system. Sialography is not indicated in acute infections or for patients sensible to contrast medium. Sialography is not advisable if a radiopaque calculus is found in the distal

portion of the duct because the injected contrast medium could move the calculus nearer the gland and complicate its removal. When sialography is not indicated in a case of suspected sialolithiasis, scintigraphy could be used. CT scans are not as invasive as sialography and, therefore, is the mode of choice for detecting sialoliths. A recently developed way to directly visualize sialoliths within ducts is sialoendoscopy-a new method that mitigates conventional radiology in the event of suspected salivary obstruction [11].

The differential diagnoses involve a radiolucent phlebolith, dystrophic calcification of the lymph nodes (with a cauliflower-like appearance), palatine tonsilloliths (multiple and punctuate), and hemangiomas with calcification.

Treatment modalities, such as extracorporeal short-wave lithotripsy and sialoendoscopy, are effective alternatives to conventional surgical excision for smaller sialoliths. For large sialoliths, transoral sialolithotomy with sialodochoplasty or sialadenectomy remains the main method of management [12].

Once removed, health care providers should advise patients to adopt a diet rich in proteins, liquids, and acidic foods to prevent the formation of new sialoliths in the salivary gland.

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