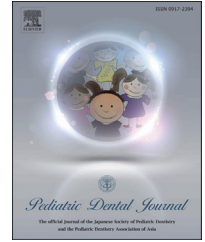


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Case Report

Surgical removal of submandibular gland sialolithiasis in a 9-year-old girl: A case report



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ABSTRACT

Sialolithiasis rarely occurs in children; it is observed more commonly in adults. We report a case of a 9-year-old girl with a sialolith in 'the right anterior Wharton's duct' resulting in a submandibular sialadenitis. Under local anaesthesia, the calculus was removed by means of a sialolithotomy. Post-operative recovery was uneventful and follow-up examinations showed recovery of the function of the affected gland.

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1. Introduction

Sialolithiasis is the most common disease of the salivary glands that is found in approximately 65% of patients with chronic sialadenitis. It is a relatively rare occurrence. According to Levy et al., the prevalence of submandibular gland sialolithiasis is 80%, 19% in the parotid and 1% in the sublingual glands [1]. The submandibular gland is most frequently involved because of its anatomic location, long, tortuous duct with a narrow orifice compared to the main portion of duct. Along with this salivary stasis and ductal inflammation and injury are important factors contributing to stone formation. It is believed that intermittent salivary stasis results in an alteration of the mucoid elements of saliva forming an organic

gel. This gel becomes the framework for the deposition of salts, which leads to the development of calculi. In the submandibular gland, development of a sialolith might be the primary event that results in stagnation of saliva and inflammation, encouraging bacterial migration and resulting in sialadenitis [2]. This disease corresponds to 30% of the salivary pathologies and is more frequent in adults (0.1–1% of population) than in children [3].

When conservative management of sialolith with sialogogues, gland and duct massage and application of moist warm heat, fluids and antibiotics fail, the sialolith needs to be surgically treated by various approaches. Intra-oral sialolithotomy (traditional) approach is an effective treatment procedure for most of sialolithiasis in children.

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1.1. Case report

A 9-year-old girl came with a chief complaint of pain and swelling in the right submandibular region of the neck for the past two months and gave a history of increase in the size of the swelling and pain on intake of food.

1.2. On extra oral examination

There was an obvious swelling measuring about 3×2 cm in the right lower submandibular region extending 1 cm from the midline to the angle of mandible posteriorly. The swelling was painful in nature and appeared by itself. The overlying skin appeared to be normal and unstretched. There was no discharge associated with swelling either intra-orally or extra-orally. On bimanual palpation of the right submandibular gland duct, calculus was palpable in the anterior region of the submandibular duct area. On palpation, the gland was tender.

1.3. Intra-oral examination: (Figs. 1–3)

There was an inflamed Wharton's ductal orifice and a calcified stone was visible in the anterior part of the right submandibular duct region, 1–1.5 cm away from the duct orifice. Deep proximal caries with 84 and root pieces with 74 were present.

1.4. Radiological examination: (Fig. 4)

A true occlusal radiograph of mandible was advised. True occlusal radiograph showed a sialolith with a diameter of 5 mm in the anterior portion of the duct of right submandibular gland.

1.5. Treatment

Pulpectomy with a stainless steel crown was done with 84, and extraction of 74 root pieces was done. Oral prophylaxis was performed and the patient was prepared for surgery. Right-side inferior alveolar nerve block and lingual nerve block local anaesthesia (Lidocaine hydrochloride 2% and adrenaline 1:80,000) was administered. Silk suture was tied behind the sialolith around the duct, so as to isolate the stone and to prevent movement of the stone to the inner part of the duct or hilum of the gland (Figs. 5 and 6). An incision of 6–7 mm made on mucosa of the right submandibular duct above the sialolith and 5 mm sialolith was removed (Figs. 7



Fig. 2 – Intra-oral figure of the mandibular arch.

and 8). Again, a true occlusal radiograph was taken for confirmation. True occlusal radiograph shows the absence of sialolith (Fig. 9). Post-operative instructions were given. Antibiotic (Tab Augmentin 375 mg, *bis in die* (BID) for 5 days) and analgesic (Tab brufen 200 mg, *ter in die* (TID) for 3 days) were prescribed, and the patient was recalled after 7 days (Fig. 10). The patient was completely symptom free, and the wound had healed. The patient was recalled after 3 and 6 months for reoccurrence, but the patient was completely symptom free.

2. Discussion

Most cases of submandibular sialolith are asymptomatic. Pain and swelling may be the cardinal signs and symptoms [4] that are more pronounced on anticipation of food, because of the obstruction of the salivary flow [5]. Hypotheses regarding the pathogenesis suggest that there is an initial organic nidus that progressively grows by the deposition of inorganic and organic substances or that intracellular microcalculi are excreted in the canal and act as a nidus in the ductal system, which has been reported. A possibility of debris, bacteria or substances migrating in the salivary ducts from oral cavity has also been suggested [6].

On the basis of the review of the literature, most of the sialoliths are usually of 5 mm in maximum diameter, and all the stones over 10 mm should be reported as a sialolith of unusual size [7]. Bodner L and Fliss D (1995) reported that only about 3% of all cases of sialolithiasis are seen in children. The low incidence in children may be because of the relatively long time required for the formation of a salivary calculus, and also because of the fact that the sublingual papillae and cuts of the



Fig. 1 – Intra-oral figure of occlusion.



Fig. 3 – Intra-oral figure of the maxillary arch.

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