Self-exfoliation of large submandibular stone-report of two cases

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Abstract

Sialoliths are the most common diseases of the salivary glands. They may occur in any of the salivary gland ducts but are most common in Wharton's duct and the submandibular gland. This report presents clinical and radio graphical signs of two unusually large sialoliths which exfoliated by itself. There were painless swellings on the floor of the mouth in both cases. Radiographical examination revealed large irregular radioopaque mass superimposed right canine and premolar areas. Sialoliths were yellow in color and approximately 1.8 cm and 2.1 cm in size.

Keywords: Sialolith, Submandibular gland, and Wharton's duct

Introduction

Sialoliths are the most common diseases of the salivary glands.[1] More than 80% occur in the submandibular gland or its duct, probably because of its more viscous saliva, longer duct, and higher mineral content in the saliva, 4-10% have been reported in the parotid gland and 1-7% in the sublingual gland or minor salivary glands.[2] The etiological factors of the sialoliths are unknown, but inflammation is the widely accepted causative condition.[3] Hypotheses regarding the pathogenesis suggest that, there is an initial organic nidus which progressively grows by the deposition of inorganic and organic substances or that intracellular microcalculi are excreted in the canal and act as a nidus for further calcification. In some cases, the existence of mucosal plugs acting as a nidus in the ductal system was reported. A possibility of debris, bacteria or substances migrating in the salivary ducts from oral cavity has also been suggested.[4] Bilateral or multiple-gland sialolithiasis occurs in fewer than 3% of cases.[5] In patients with multiple stones, calculi may be located in different positions along the salivary duct and gland. Submandibular stones close to the hilum of the gland tend to become large before they become symptomatic. Sialolithiasis occurs equally on the right and left sides. Commonly, Sialoliths measure from 1mm to less than 1 cm. Giant salivary gland stones are those stones measuring over 1.5 cm and have been rarely reported in the medical literature.[6] Giant salivary gland stones measuring over 3 cm are extremely rare, with only scanty reported cases.[7] Although, sialolith may occur at any age from 6 up to 70 years old[8] but, most cases occurs under the age of 40 years. Males are affected twice as much as females.[1]

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Case Reports

Case 1

A 51 year old male patient reported to the department of oral medicine and radiology with complaint of pain and swelling on left side of floor of the mouth. Patient noticed the swelling for past three months, pain aggravated while eating. The tongue was slightly elevated. On clinical examination a hard mass was palpable on the floor of the mouth on left side with a small ulceration towards midline. Through the ulceration a yellowish white stone like material was seen [Figure 1]. On radiographic examination occlusalview revealed radio-opaque mass in relation to mandibular left canine and premolars [Figures 2a and b]. The size of the stone was approximately 15mm and it was fragmented [Figure 3]. Patient was planned for surgery under local anesthesia. The night before surgery the half fragment exfoliated itself. The other half of the fragment was removed by surgery. The patency of the duct was maintained by inserting a drain and area was sutured. Postoperative analgesic and antiseptic mouthwash were prescribed. The patient was followed-up two weeks post operatively to check salivary function of the gland. On review the left submandibular gland was palpable but clear saliva could be expressed from the duct.

Case 2

A 40 year old male patient reported to the department of oral medicine and radiology with complaint of ulceration on the floor of the mouth left side [Figure 4]. Patient also reported with a stone like thing in his hand which exfoliated from the

Figure 1: Sialolith visible on the left side of floor of the mouth

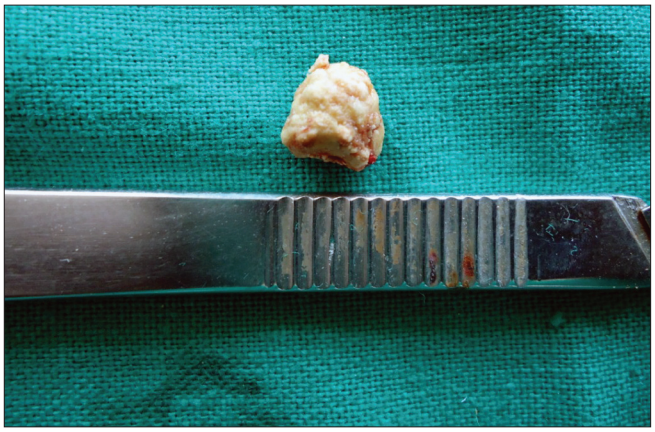

Figure 3: Surgically extracted sialolith

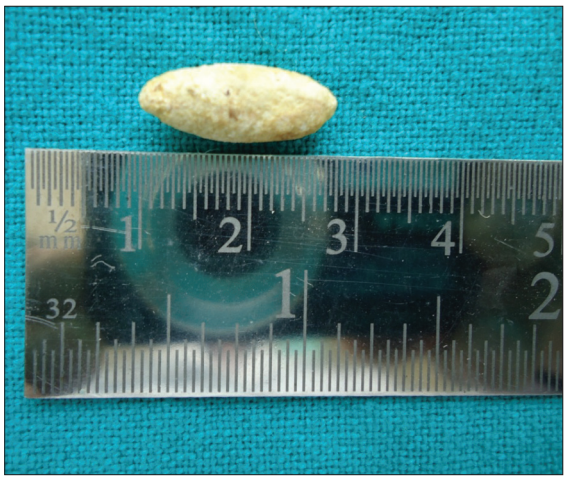

Figure 5: Self exfoliated sialolith

ulcerated area that morning. Patient had history of pain and swelling one year back which relieved on taking analgesics. The pain again started after 10 days on the left side of floor of the mouth. This was gradual in onset and increased on taking meal and relieved on taking analgesic. On clinical examination the ulceration was seen on the left side of the

Figure 2: (a, b) OPG and mandibular anterior occlusal view showing radio opaque sialolith in the region of mandibular left canine and premolar

Figure 4: Ulceration on the left side of floor of the mouth

floor of the mouth of size approximately 2 cm [Figure 5]. The stone was hard with rough surface. It was yellowish in color and bullet like in shape. The size of the stone was 18 mm × 5 mm. The ulcerated area was sutured and analgesic and antiseptic mouthwash were prescribed.

Discussion

Salivary calculi are usually small and measure from 1 mm to less than 1 cm. They rarely measure more than 1.5 cm.[7] Mean size is reported as 6 to 9 mm.[9] Giant sialoliths are rare and are defined as the size of 3.5 cm or larger.[5] Large and giant calculi may perforate the floor of the mouth by ulcerating the duct or may result in a skin fistula by causing a suppurative infection.[10] However, large sialoliths have been frequently reported in the body of salivary glands, they have rarely been described in the salivary ducts, particularly without any complaints from the patients. Some unusual large salivary calculi may be seen without a long history, because of the lesions were generally asymptomatic. It is believed that a calculus may enlarge at the rate of approximately 1 to 1.5 mm per year.[11] The key step in diagnosis of sialolithiasis is the elucidation of a thorough history and careful clinical examination. Various clinical and imaging methods are available for diagnosing sialoliths. Occlusal and panoramic views are the most common radiographic techniques used to diagnose sialolith.[4] Submandibular gland calculi have been reported to be radio opaque in 80% to 94.7% of cases.[12,13]

In the anterior floor of the mouth, an occlusal radiograph may reveal the calculus. Ultrasonography is widely reported as being very helpful in detecting salivary stones. As many as 90% of all stones larger than 2 mm can be detected as echodense spots on Ultrasonography.[4] However, detection of small calculi may be difficult with ultrasonography. Computed tomography (CT) is also highly useful diagnostic aid.[12] Sialoendoscopic system was developed in the 1990's as an endoscopic technique, which examine the ductal system completely due to the small size of scopes. Sialoendoscopy can be used for diagnostic and treatment purposes.[13] In the present case report, clinical and radiological features of two large sialoliths which were in the size of 1.8 and 2.1 centimeters were presented. They were located in Wharton's ducts and the patients complained of pain and occasional swellings. In both cases the sialolith had exfoliated from the duct by eroding it. The treatment of sialolithiasis depends upon the location and size of thesialolith. In case of small sialoliths, conservative methods such as proper hydration of the patient, application of moist warm heat and massaging the gland in conjunction with sialogogues may be considered.[4] Small stones can also be milked out through ductal orifices by bimanual palpation. Sialodochoplasty can be performed to remove the submandibular sialoliths which are located close to the orifice of Wharton's duct. To remove the stones distal to the punctum, a transverse incision can be made distally on the stone taking care not to injure the lingual nerve.[14] In the management of large sialoliths which are located in the close proximal duct, extracorporeal shock wave lithotripsy can be considered. Endoscopic intracorporeal shock wave lithotripsy is also gaining importance because of less damage to the adjacent tissues during the procedure.[14] Sialadenoscopy, which is a non-invasive technique, can be used to manage large sialolithsas well as ductal obliteration. CO_2 laser, because of its advantages of minimal bleeding, less scarring, clear vision and minimal post-operative complications, is gaining its popularity in the treatment of sialolithiasis.

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