Giant submandibular Sialoliths: A Report of Five Cases

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Abstract

Sialolithiasis is the most common disease of the major salivary glands. Large sialoliths are a rare occurrence in the literature. The typical clinical presentation varies from swelling at meal times to inflammation, pain, tenderness of the gland; also, bacterial infections can occur when the gland is filled with the stagnant saliva. To the best of our knowledge, this is the first report of five giant cases of the submandibular sialolith. The patients were selected out of 32 cases of submandibular sialoliths from 1992 to 2015. In one case, the sialolith was brittle that was collected with bone collector, and another case recurred eighteen months later.

Keywords: Giant; Sialolith; Submandibular Gland

Case 1

A 26 year old male was referred due to a painful hard mass in the right side of the floor of the mouth for two weeks which exacerbated during meals and subsided for hours. Clinically, a firm tenderness was detected in the submandibular gland. Intraoral exam revealed a palpable hard mass in the right sublingual caruncle; salivation was not remarkable (Figure 1). A lower occlusal radiography showed a cone shaped radiopaque mass in the Wharton’s duct close to the midline. A diagnosis of right submandibular sialolith was made, under local anesthesia via a mucosal and duct incision the sialolith about 22 mm removed. A tenacious secretion was evacuated from the duct. A copious irrigation was performed, hence, sour beverages was recommended for increasing the salivation (Figure 2).
Case 2

A 48 year old male was referred by his physician. The clinical exam revealed severe pain and tenderness in the submandibular region in the right side. A history of intermittent pain and swelling during meals then subsided. The chief complaint was intensive pain for a week and salty discharge from the ostium four days ago. A tenderness and pain in the submandibular gland area was found during examination. Intraoral examination revealed edema in the sublingual fold, a mass of fibrous tissue on the warthon’s duct and purulent discharged. The vital signs were within normal limits. The lower occlusal radiography diagnosis of sialolith was confirmed (Figure 3). Through intraoral incision the widest sialolith in the study removed. The field of surgery was irrigated copiously. The patient after 18 months after surgical management showed a small sialolith in the warthon’s duct (Figure 4).
Case 3

A 41 year-old female visited due to a left lower facial swelling six months ago. She had a history of an intermittent submandibular gland swelling during meals. She refused to undergo surgical intervention because of tomophobia behavior. The occlusal radiograph showed an incisor-shaped radiopaque sialolith about 29 mm length (Figure 5). Under general anesthesia, the submandibular gland was tender and a hard mass was found in the premolar-molar region. An 8mm longitudinal incision was made on the mucosa and Wharton’s duct. Because of the brittle sialolith, a traction suture was used in the proximal end of the sialolith to prevent any possibility of the particles migration. All sialolith particles were preserved by bone collector (Figure 6). The patient was asymptomatic following the surgery and optimal healing occurred subsequently.
Case 4

A 32 year old female admitted with a painful firm lesion in the anterior right side of the floor of the mouth. The pain and swelling of the submandibular area was exacerbated during mealtimes reduced gradually. Extra-oral examination revealed tenderness in the submandibular gland, intraorally, a large, firm swelling found in the anterior part of the sublingual region. A lower occlusal radiograph showed two big radiopaque canine-shaped particles in the right submandibular duct (Figure 7). The diagnosis was right submandibular sialolith. After local anesthetic infiltration a 10 mm incision stones particle were removed. The sialolith was measured about 30 mm length (Figure 8).
**Case 5**

A 44 year old male was referred with intermittent swelling of the right submandibular gland during mealtimes. The patient experienced painful and creamy discharge episodes from sublingual area for six months. Extra-oral examination revealed tenderness of the submandibular gland. Bimanual palpation of the right floor of mouth, a palpable firm mass was felt in the sublingual caruncle. The secretion of saliva diminished and area was red and sensitive. An occlusal radiograph showed three different opaque particles. The opacity close to the orifice was the larger part (Figure 8). A transoral 1 cm incision in the axis of the duct was made directly mucosa and duct, the Sialoliths was removed as a routine fashion.

**Discussion**

Three large submandibular sialolith was published by authors (2016). Giant sialolith in submandibular gland is a rare disorder [1]. Although, large Sialoliths have been described in the body of salivary glands, they are rarely found in the salivary ducts [2]. The size of the Sialoliths is usually less than 10 mm in diameter [3]. Some calculi that reach several centimeters are reported as megaliths or giant calculi in the literature [4]. Giant Sialoliths are classified as those exceeding 15 mm in any one dimension [5]. Varying sizes have been described for salivary calculi and unusually large Sialoliths measuring above 3.5 cm have been reported [6]. Those salivary stones, the size of which exceeds 15 mm in any one dimension or 1 g in weight are classified as giant sialoliths [7]. They rarely measure more than 15 mm, and infrequently giant salivary gland calculi > 15 mm have been reported in the literature [1]. The Sialoliths are classified as ‘giant’ in case any dimension exceeds 15 mm [8]. Its incidence in males is more than females and children [9]. A higher mucus content, a greater degree of alkalinity, greater concentrations of calcium and phosphate salts, longer duct and its saliva flows against gravity are considered the main reasons of submandibular gland Sialoliths [10]. Bilateral Sialolithiasis is a rare condition [11]. Salivary stones consist of an amorphous mineralized nucleus, surrounded by organic components of salivary stones include collagen, glycoproteins, amino acids and carbohydrates and inorganic components are hydroxyapatite, carbonate apatite, whitlockite and brushite [12]. Intraoperative non-visualization of a sialolith is more likely to occur in the parotid gland [13]. Both panoramic and occlusal radiographic techniques displayed satisfactory diagnostic performance and should be considered before using a CT scan to detect submandibular sialoliths [14]. The multimodal diagnostic algorithm achieved a diagnostic sensitivity/specificity of 100%/100% in sialolithiasis [15]. The sialendoscopy is an effective and safe diagnostic and therapeutic option with low complication rate. However, limiting factors such as the size or the position of potentially removable obstacles must be taken into consideration [16]. Surgical treatment has traditionally been used as therapy to restore a physiologic salivary flow [17]. Transoral sialolithotomy remains mainstay of the treatment for giant sialolith in the duct of submandibular gland [18]. The sialendoscopy-assisted sialolithotomy is an effective and safe surgical technique for the removal of proximal and intraglandular submandibular gland stones [19].

Conclusion

Transoral sialolithotomy seems to be the treatment of choice for giant Sialoliths, because of time and money saving. Our cases were managed in a routine fashion and followed up for 2 to 25 years, only one case recurred that retreated through transoral procedure.

Bibliography


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