Case Report

An Unusually Large Globular Submandibular Duct Sialolith A Rare Case Report

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Article History
Received Nov 30, 2017
Received in revised form Dec 15, 2017
Accepted on Dec 20, 2017

Abstract:- Sialoadenitisand sialolith are the most common diseases of the salivary gland and its duct. In 80 % of cases it is seen in submandibular gland and its duct (Wharton duct). Usually size of the sialolith is less than 10 mm and most commonly seen in middle aged male patient. Giant submandibular duct sialolith is usually elongated in shape ,globular is rare one. Here we going to discuss a case of unusually large (2.5cm x1.5cms)submandibular duct stone. Patient presented with pain and swelling in the floor the mouth. Clinical diagnosis was confirmed by CT scan floor of the mouth and neckand surgical management was done. Here, we are also we describing short overview of aetiology , clinical presentation diagnostic modalities, treatment option of submandibular sialolith . The aim of this study is to report a case of giant globular stone near the opening of wharton's duct.

Key Words:- Giant sialolith, Submandibular gland ,Whartons duct, Sialogouges, Lithotripsy

Introduction

Sialoliths are calcified mass formed by deposition of calcium salts like calcium phosphate and calcium carbonate , surrounding a nidus composed of bacteria and its products ,epithelial cells and any small foreign body. They are found in the ducts of the both major and minor salivary gland ducts. It is the second most common disease followed by mumps[1]. Among the salivary gland it is most commonly seen in submandibular salivary gland and its duct (80%) , 6% in the parotid gland and 2% in sublingual and minor salivary glands[1,2,3]. In 70-80% cases there is a solitary stone; and in about 5% cases there are 3 or more stones[2].There is no left and right predominance[4]. Hilar stones is usually asymptomatic and usually become very large before clinical presentation. The ductal stones are elongated in shape and hilar stones tends to be ovoid in shape[5]. In literature giant sialoliths are defined as size more 15mm in one of its dimension or weight more than one gram[6,7]. Usual size of presentation of submandibular gland sialotiths is 3- 4mm. Here we are going to report a case of unusually large globular submandibular duct sialolith.

Case Report

A 36 year old male patient was referred from Dental College, Patiala to OPD of the department of Otorhinolaryngology and head & neck surgery, GMC/RH Patiala. Patient presented with pain and swelling of the right side of floor of the mouth. Pain and swelling was aggravated during eating. Clinical examination was done and found a 3cm x 2cm swelling present on the right side of floor of the mouth. on bimanual palpation a hard mobile non tender mass (approx. 3 cms x2 cms) in the right side of the floor of the mouth , lateral to the lingual papilla. Over lying mucosa

was normal. CT scan floor of mouth and neck(axial cut) was advised and showed 2.5cm x1.5cm radiopaque mass[Fig 1] in the right submandibular duct near its opening in the floor of the mouth. On the basis of history ,clinical examination and radiological investigation lesion was diagnosed as right sided sub mandibular duct sialolith. Preoperative routine investigations were with in normal limit. Keeping aseptic condition under local anesthesia incision was given over the duct and stonewas removed [fig 2] and marsupialization was done[fig3]. Patient was discharged after 24 hours of surgery. the symptoms resolved after surgery. He was followed up for a period of 3 months and Post operative period was uneventful.

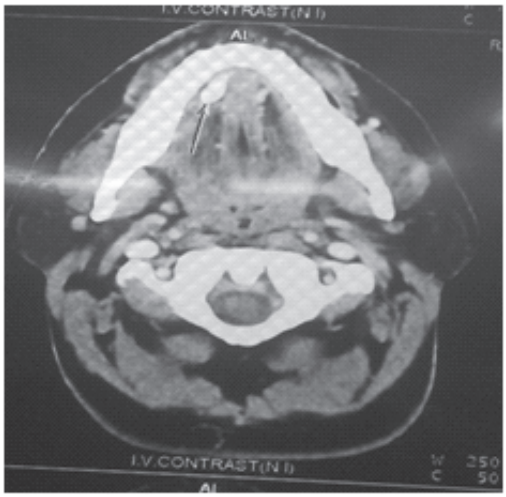

Figure 1: CT scan floor of the mouth and neck , axial cut shows hyperdense mass in right sumandibular duct area.

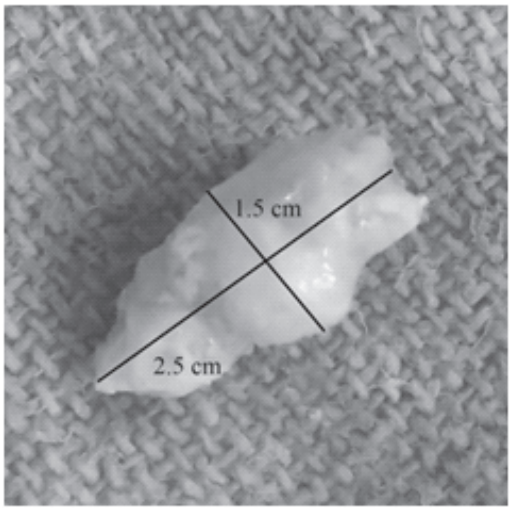

FIG 2: Postoperative right submandibular duct stone

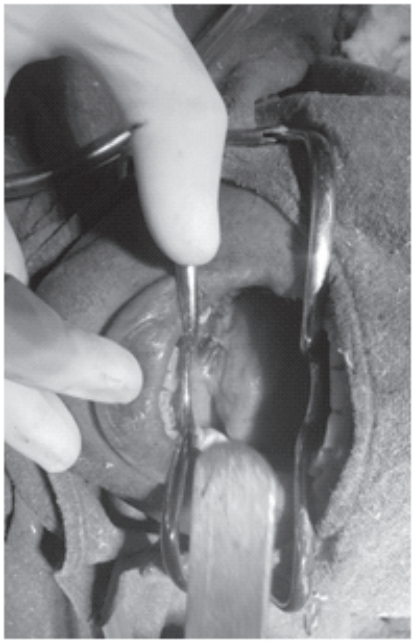

FIG 3: Immediate post-operative wound after marsupialization.

Discussion

Small submandibular duct or gland stones are usually asymptomatic, but unusually large sialolith may causing pain and swelling. Swelling and pain usually accompanied with eating or stimulation of salivary gland. At the time of eating there is increased salivary flow which becomes blocked by the stone causing pain and swelling . Sometime blockade of duct by stone causes stagnation of secretion , which is responsible for acute inflammation of salivary glands. Sialoliths are commonly 1-10 mm in size but giant sialoliths are reported very rarely[8]. Patient may rarely present with sialocutaneous fistula, due to obstruction of ducts resulting in stasis ,infection and subsequent rupture through the skin[9]. Sometimes atrophy and fibrosis of gland occurs due to long term obstruction without any infection[10].

Sialoliths develop in two phases, central core formation phase and layered peripheral formation phase. The central core is formed by precipitation of salts of calcium phosphate and carbonate around a nidus, followed by deposition of organic and inorganic materials. Predisposing factors for sialoliths likely to be high alkalinity and calcium content of saliva, injury to the duct and gland and also inflammation and infection of

salivary glands. Submandibular gland have higher chance of stone formation because its secretions have high pH, greater concentration of calcium carbonate and calcium phosphate salt and drainage is against the gravity . It is also known that it has higher mucous content in comparison to the secretion of parotid and sublingual gland[11].

By posterior –anterior bimanual palpation of the submandibular salivary gland duct, we can diagnose sialoliths clinically. Conventional imaging and CT-scan both are helpful for diagnosis of submandibular sialolith. Submandibular stone have been reported to be radiopaque in 80-94.7% cases and can be seen in plain radiograph. X-raymandibleocclusal view is best to visualize submandibular duct stone. Non contrast CT scan and ultrasonography can localized the stone anatomically accurately and if inflammation is present then contrast enhanced CT scan is suggested. Other diagnostic modalities that can be used are MRI, Scintigraphy and sialography.

If the stone is small conservative management is done with proper hydration, local heat, massage, and silogaouge[12]. Acute stage and associated infection is treated with antibiotics along with stone extraction. Small stone also can be milked out. Sucking on a lemon slice may increase saliva production and cause spontaneous expulsion of the stone [13].If there is no relief after conservative management then surgical excision on the duct advised .Distal one third ductal stone treated with simple incision on the duct at the floor of the mouth. During excision of more posterior ductal stone caution to be taken not to injure lingual nerve as nerve lies closely related to the submandibular duct posteriorly. Fibrosed and atrophied gland or intraglandular stone, gland has to be excised. Care has to be taken of to preserve marginal mandibular nerve .Other than surgical treatment, new modalities available are: Extracorporial shock wave lithotripsy,endoscopic calculi removal ,end luminal balloon dilatation and extraction of the stone and more recently endoscopic intracorporal shock wave lithotripsy [14].

Sialoendoscopy is a minimal invasive technique used for both diagnostic and therapeutic purpose for sialolith of submandibular gland and its duct .Endoscopically controlled intracorporial lithotripsy of sialolith may be affective as non invasive technique for management of sialolith [15]. CO2 laser and extracorporeal piezoelectric shock wave therapy are also useful technique[16].

CONCLUSION

Salivary gland and its duct stone is common entity of day to day practice in otorhinolaryngology and dental surgery. Commonly present as pain and swelling in floor of mouth which is aggravated with salivary gland stimulation. So clinician should be aware about this entity for diagnosis and management in time to prevent complications. Newer treatment modalities are effective alternatives to conventional surgical excision for smaller sialoliths. However, for giant sialoliths, transoral sialolithotomy with sialodochoplasty or sialadenectomy remains the mainstay of treatment.

FINANCIAL SUPPORT AND SPONSORSHIP NIL

CONFLICTS OF INTEREST None

PERMISSION TAKEN FROM INSTITUTIONAL ETHICAL COMMITTEE

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