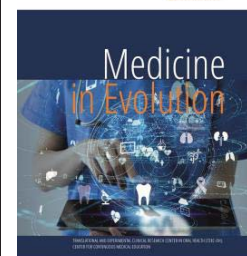


Parotid Gland Lithiasis in Stensen's Duct. Case Report



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Abstract

Salivary disease may result as a side effect from long term medications in chronic patients, dehydration, autoimmune diseases, ductal stenosis, smoking, trauma to salivary glands or due to systemic illness. Patients with sialoliths present a dysfunction related to salivary secretion. Salivary gland stones or calculi are the most common disease of the salivary glands most common in men aged between 30 to 60 years old. More than 85% of salivary sialoliths occur in the submandibular gland, 5-15% occur in the parotid gland and around 2% are in the sublingual and minor salivary glands. The article will present the case of an 84-year-old male patient with a parotid gland sialolithiasis.

Keywords: Parotid gland, lithiasis, sialoliths, parotid calculi

INTRODUCTION

Salivary gland stones or calculi are the most common disease of the salivary glands most common in men aged between 30 to 60 years old. More than 85% of salivary sialoliths occur in the submandibular gland, 5-15% occur in the parotid gland and around 2% are in the sublingual and minor salivary glands [1]. The submandibular salivary gland is more likely to develop lithiasis than the parotid gland because of the sinuous position of Wharton's duct and the more mucus rich saliva [2, 3]. The aetiology of the disease is unknown, but it is considered that it may result as a side effect from long term medications, such as diuretics and anticholinergics, dehydration, ductal stenosis, autoimmune diseases such as lupus and Sjogren's syndrome, smoking, local trauma to the salivary glands, radiation therapy or kidney failure [4-6]. The incidence of salivary gland calculi is estimated at 1 in every 30000 patients. Men seem to be more affected than women within the ratio 2:1 [7]. The majority of the calculi are less than 1 cm, but bigger or giant sialoliths have been described in reports. The sialoliths have a homogenous predominantly composed of elements comprising hydroxyapatite, carbon, calcium, oxygen, phosphorus and sulfur. According to one of the etiopathogenetic theories, the formation of the salivary gland calculi results from a deposition of calcium salts around a core made of bacteria, foreign bodies, desquamated epithelial cells with an estimated rate of 1-1.5 mm per year [8]. Multiple salivary stones in the submandibular duct and the parotid gland have rarely been reported except the patients with severe Sjogren's syndrome [9]. Sialadenitis, or salivary gland infection may be caused by bacteria, viruses, a salivary stone or other blockage of the salivary gland duct. The inflammation of a salivary gland and the resulting salivary stasis from the blockage may allow the bacteria to ascent into the gland [10]. The calculi are more common in Wharton's duct, so the sialadenitis is more present in submandibular gland in comparison to the parotid gland.

MATERIAL AND METHODS

An 84-year-old male patient came to the department of Oral and Maxillofacial Surgery with complaint of pain, bad breath and swelling that increases before meals. The intra-oral examination showed a stony hard mass, that could be palpated in the region of the left Stensen's duct with the approximate dimensions of 1 cm, with obstruction of the parotid duct (Figure 1). After palpation and massaging the gland, the ejection of saliva was with pus and not free flowing as on the other side. The patient was feeling pain and pressure. The computed tomography (Figure 2) confirmed the presence of a sialolithiasis of the left parotid gland and ipsilateral dilatation of Stensen's duct. The swelling was indurated, tender on palpation, and firm in consistency (Figure 2 c).



Figure 1. Stone like mass is palpable in the buccal mucosa

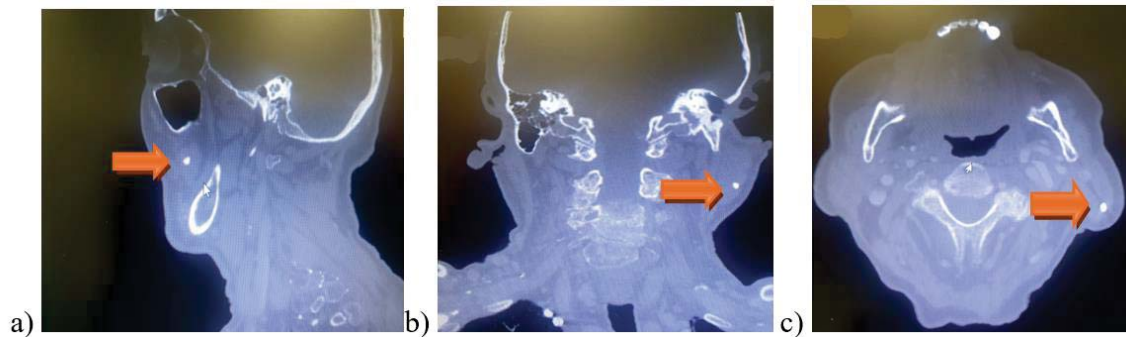


Figure 2. Sagittal, axial, and coronal CT images show a radiopaque sialolith measuring approximately 10 mm x 6 mm

On surgical exploration (Figure 3) under local anesthesia, a stone measuring about 10 mm x 6 mm in length was visible at the orifice as seen in (Figure 4), which was surgically retrieved. A stent was placed in the left Stensen's duct to maintain the patency of the duct and massage of the gland was done to support the flow of the saliva. Wound closure was done with 4-0 synthetic polyester non-absorbable.



Figure 3. Surgical exploration



Figure 4. Sialolith

RESULTS

The post operative evolution of the patient was good. The patient was given medication as following: antibiotics, anti-inflammatory, antispastic and analgesic. Good oral hygiene and hydration with plain water was recommended. The patient was discharged after five days and advised to return for follow-up.

DISCUSSIONS

The salivary gland lithiasis is the most frequent cause of salivary gland swelling, the obstruction affects the parotid, the submandibular, and the sublingual glands. It predominantly affects individuals between 30 to 70 years old and is more common in males. The most frequent symptom is sialadenitis, inflammation of the gland, that can be acute or chronic, or even salivary colic associated with meals. In bacterial sialadenitis, there may be a purulent discharge. The initial management is conservative, with various minimally invasive surgical options available for persistent cases. In the case that we reported the calculi could be palpated with digital examination intra-orally; it felt like a hard mass. Less commonly, the sialolithiasis can be seen as granular masses at the entrance of the duct. In order to identify the degree of obstruction, the physician can try to massage the gland. The purpose of this massage is to see if the saliva is passing through the duct or if it is blocked. Differential diagnosis includes ductal stenosis, Sjogren's disease, sialosis, bacterial and viral infections, radiotherapy reaction. The diagnosis of sialolithiasis can sometimes be difficult. There are many cases that are asymptomatic and clinical symptoms appear later. An asymmetric swelling is present on the affected salivary gland. It has been reported that approximately 60% of parotid calculi and 30% of submandibular calculi are located distally in the ducts. Sometimes they are large, so the physician can visualise and palpate the stone in the oral cavity. Salivary stones vary in size their shape can be oval or round, their colour can be white or yellow. Sometimes the stones can be palpated along the anatomic course of the affected salivary gland [11-14]. Their size and weight differ. Sialoliths diameter ranges between 2 and 15 mm [14]. It is noted in literature that submandibular calculi are larger than parotid calculi [15]. Their usual weight is between 250 mg and 300mg but there are reported cases with calculi up to 5 g. [16]. We know that sialoliths have many manifestations and they may or may not be radioopaque. There are non-radioopaque sialoliths and their management is difficult radiographically. The computed tomography with axial, sagittal and cranial images is the preferred imaging modality in our department. We consider that CT scan is the most important tool for diagnosis, treatment planning and follow-up in the pathology of the salivary gland.

CONCLUSIONS

The first step in the treatment of the parotid gland lithiasis is conservative. Non-steroidal antiinflammatory and antispasticity drugs, antibiotics, if necessary, hydration, sialogogues (lemon, chewing gum, hard candies), massaging the gland to stimulate saliva secretion and flow, warm heat therapy. The second step in the treatment is removing the stone directly at the duct opening. If it is not possible, sialendoscopy is required. It is a minimally invasive procedure to diagnose and treat salivary gland disorders. Depending on the size of the stone (stone <3 mm) the procedure of choice can be interventional sialendoscopy with endoscopic removal (basket, forceps), when the sialolith is bigger between 3mm-6mm or bigger than 6mm interventional sialendoscopy with laser fragmentation or ESWL extracorporeal shock-wave lithotripsy. If the obstruction is severe then it requires surgical intervention, especially when the obstruction is close to the gland.

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