

## CASE REPORT

### Sialolithiasis of the Wharton's duct - Report of 3 cases

Sukhvinder Singh Rana<sup>1</sup>, Saurabh Arya<sup>2</sup>

<sup>1</sup>Senior Resident, RPGMC Tanda, Himachal Pradesh University, Himachal Pradesh, India, <sup>2</sup>Senior Resident, Christian Medical College and Hospital, Ludhiana, Punjab, India

#### ABSTRACT:

Submandibular gland lithiasis is common obstructive disease of salivary gland. Submandibular gland lithiasis is most commonly seen in males. It causes pain and swelling in the region of gland. We have reported three cases of submandibular gland lithiasis. First case was seen in right side in 22 year old male. Second case was seen in 35 years old male on left side and third case was seen in 48 years old female on right side. CT scan played important role in diagnosis. In all cases intraoral surgical approach was utilized for removal of gland.

**Key words:** CT scan, Submandibular gland lithiasis, Surgical

**Corresponding author:** Dr. Sukhvinder Singh Rana, Senior Resident, RPGMC Tanda, Himachal Pradesh University, Himachal Pradesh, India

**This article may be cited as:** Rana SS, Arya S. Sialolithiasis of the Wharton's duct - Report of 3 cases. J Adv Med Dent Scie Res 2017;5(11):108-111.

Access this article online	
<p><b>Quick Response Code</b></p> 	<p>Website: <a href="http://www.jamdsr.com">www.jamdsr.com</a></p>
	<p><b>DOI:</b> 10.21276/jamdsr.2017.5.11.27</p>

#### INTRODUCTION

Sialolithiasis (also termed salivary calculi, or salivary stones), is a condition where a calcified mass or sialolith forms within a salivary gland, usually in the duct of the submandibular gland (80%)(also termed "Wharton's duct"). Less commonly the parotid gland (19%) or rarely the sublingual gland or a minor salivary gland (1%) may develop salivary stones.<sup>1</sup> If a calculus forms in the duct that drains the saliva from a salivary gland into the mouth, then saliva will be trapped in the gland. This may cause painful swelling and inflammation of the gland. Inflammation of a salivary gland is termed sialadenitis. Inflammation associated with blockage of the duct is sometimes termed "obstructive sialadenitis".<sup>2</sup> Because saliva is stimulated to flow more with the thought, sight or smell of food, or with chewing, pain and swelling will often get suddenly worse just before and during a meal ("peri-prandial"), and then slowly decrease after eating, this is termed meal time syndrome. However, calculi are not the only reasons that a salivary gland may become blocked and give rise to the meal time syndrome. Obstructive salivary gland disease, or obstructive sialadenitis, may also occur due to fibromucinous plugs, duct stenosis, foreign bodies, anatomic variations, or malformations of the duct system

leading to a mechanical obstruction associated with stasis of saliva in the duct.<sup>3</sup>

It usually appears between the age of 30 and 60 years, and males are affected twice as much as females.<sup>2</sup> Some factors inherent to the sub-mandibular gland tend to favor stone formation like longer and larger caliber duct, flow against gravity, slower flow rates and higher alkalinity along with higher mucin and calcium content of the saliva.<sup>3</sup> Most patients present with acute swelling of the submandibular or parotid gland with recurrent swelling. The swelling and discomfort can be exacerbated during meals particularly when patients takes sour or acidic food.<sup>4</sup> We have recorded three cases of submandibular gland lithiasis.

#### CASE REPORT 1

A 22 year old male patient visited the department with the chief complaint of pain and swelling on the right side of the face since few weeks. History of presenting illness revealed that that pain and swelling used to occur just before taking meals. Past medical and dental history was non- contributory. On examination, a localised swelling was seen below the right angle of the mandible. On palpation, the right submandibular salivary gland was enlarged, hard and mobile. Intra-oral examination revealed

a single, localized swelling on right side of floor of mouth lingual to 46 47 (Fig-1). Mandibular occlusal cross sectional view showed the presence of stone in the gland. The stone was removed by an intraoral approach (Fig-2).

### CASE REPORT 2

A 35 year old male patient visited the department with the complaint of pain and mild swelling on left side of face since 2 weeks. History of presenting illness revealed that there was pus discharge focal to floor of mouth along with pain which aggravated during meals. Past medical history was non contributory. On intra-oral examination, a hard mass was palpable on left side of floor of the mouth and saliva with purulent discharge flow into floor of the mouth during extra oral palpation of the left submandibular region. Computed tomography scan revealed two calcifications measuring 10.5mm and 5.5mm in the left side in the region of wharton's duct (Fig- 3). On the basis of clinical and radiological examination, final diagnosis was submandibular duct sialolithiasis of left side was established. An intra-oral approach was used to remove both the sialoliths under local anesthesia. The sialoliths measured 1.3 cms and 0.5 cms respectively (Fig. 4).

### CASE REPORT 3

A 48-year old female patient complaint of persistent draining wound over the right submandibular region. History reveals that there was odynophagia and dysphagia two months back. Examination revealed that, in the right submandibular region, there was a hard, mobile swelling which was palpable in the floor of the mouth (Fig- 5). There was pus discharge from the orifice of the duct of the right submandibular salivary gland. Mandibular occlusal cross sectional view revealed a circular calcified mass with a concentric-ring appearance in the region of the right submandibular salivary gland. An intra-oral approach was used to remove the sialoliths. The size of the sialolith was 1 cm (Fig- 6).

### SURGERY /APPROACH-

All the patients were managed using the intra-oral approach under local anesthesia. All the patients presented which was relieved at subsequent follow-ups of 1 week. The opening of the duct was dilated with lacrimal probe until the stone was felt. A circumferential suture was placed around the stone and proximal to the stone, hence preventing it from slipping back. An incision was made at the site of the stone in the floor of the mouth. Dissection was done with extreme care taking care to avoid any damage to the lingual nerve. Ductal incision was made over the stone to allow extraction of the stone. The duct was sutured using 4-0 vicryl suture to the floor of the mouth. The patients were followed for 4 years at follow-ups ranging from 1 week, 2 week, 1 month, 6 months and 1 year. Recurrence occurred in none of the patients at long

term follow-up ranging from 2- 4 years. None of the patients suffered with lingual nerve paresthesia.



Figure 1: Intra- oral view showing the surgical site



Figure 2: Sialolith measuring 2.1 cms in size



Figure 3: Axial CT scan showing 2 calcifications



Figure 4: Sialoliths measuring 1.3 cms and 0.5 cms



Figure 5: Intraoral view showing submandibular sialolith (Right side)



Figure 6: Sialolith measuring 1 cm in size.

## DISCUSSION

Sialolithiasis of the submandibular gland can be completely asymptomatic. Common symptoms vary from a painless swelling, moderate discomfort to severe pain with large glandular swelling accompanied by trismus and usually associated with eating. Sialoliths are commonly 1-10 mm in size, but giant sialoliths (greater than 3.5 cm) have been reported occasionally.<sup>5</sup>

Signs and symptoms are variable and depend largely upon whether the obstruction of the duct is complete or partial, and how much resultant pressure is created within the gland. The development of infection in the gland also influences the signs and symptoms. Pain is intermittent, and may suddenly get worse before mealtimes, and then slowly get better (partial obstruction). In our cases there was history of mild to moderate pain during meals.<sup>6</sup>

Other features involves, swelling of the gland, also usually intermittent, often suddenly appearing or increasing before mealtimes, and then slowly going down (partial obstruction). We also reported swelling in our cases. There can be tenderness of the involved gland, palpable hard lump, if the stone is located near the end of the duct<sup>7</sup>. If the stone is near the submandibular duct orifice, the lump may be felt under the tongue, Lack of saliva coming from the duct (total obstruction), erythema (redness) of the floor of the mouth (infection), pus discharging from the duct (infection), cervical lymphadenitis (infection) and bad breath.<sup>8</sup> In our third case report there was pus discharge in the floor of mouth during palpation of submandibular gland.

Radiographic examination is useful for diagnostic purposes, where occlusal and panoramic films are the most commonly used, with sialoliths presenting as a radiopaque areas. However, not all calculi are visible on conventional radiographs, which may be owing to a lesser degree of calcification in some lesions, hence other imaging modalities may be required, such as sialography, ultrasound, computed tomography or magnetic resonance imaging. Radiopaque lesions should lead to a differential diagnosis that includes a sialolith, calcified lymph node, phlebolith and vascular calcification.<sup>9</sup> In our cases we also obtained CT scan images of the region.

Treatment for sialolithiasis consists of surgical removal under local anesthetic, which was the treatment of choice in our study. Considering alternative treatment options, a small calculus located at the opening of the excretory duct may be approached conservatively via warm compresses, delicate massage and milking of the gland, in an attempt to expel the calculus via the glands excretory duct orifice.<sup>10</sup>

## CONCLUSION

Sialolithiasis of submandibular gland is quite common. In our all cases, submandibular gland was involved. Pain and swelling of the gland is common feature during meals.

Radiographic examination reveals radiopaque mass in the region of gland.

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**Source of support:** Nil

**Conflict of interest:** None declared

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