

**Case report:**

**Preservation of Lingual Nerve In Excision Of Bilateral Submandibular Sialolith Via Intraoral Approach: A Case Report**

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**Abstract**

Salivary gland stone (sialolithiasis) is most common disease of the salivary gland and mainly occur at the submandibular gland. Traditionally, sialolithiasis is removed via an extra-oral approach but the major disadvantages of this treatment include a risk of injuring the lingual nerve, marginal mandibular nerve and scar formation. In this case report, we revealed an even less invasive intraoral surgical technique for the removal of sialolith that does not affect the submandibular gland function with the preservation of lingual nerve. This report describes a patient who had unusual bilateral submandibular gland sialolith that posteriorly located, which successfully removed via intraoral approach without any postoperative complications.

**Keywords:** Sialolithiasis, submandibular gland, lingual nerve.

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**Introduction**

Sialolithiasis is a disease characterised by the development of salivary stones, known as calculi or sialoliths, in the salivary ducts or in the salivary gland themselves. More than 80% of salivary sialoliths occur in the submandibular gland or in its duct, 6–15% in the parotid gland and about 2% in the sublingual and minor salivary gland<sup>1-2</sup>. Its estimated frequency is 1.2% in the adult population, with a slight male predominance<sup>3</sup>. Flow of saliva against gravity, longer secretory duct, its more alkaline pH and the high mucin and calcium content could explain the preferential stone formation in the submandibular gland<sup>5</sup>.

One of the important nerve that closely related with submandibular gland and its duct is lingual nerve. It supplies the general sensation to the mucosa of the anterior two-thirds of the tongue,

the sublingual mucosa, the mandibular lingual gingiva and the floor of the mouth<sup>6-7</sup>.

In the excision of submandibular gland cases, problems arise due to formation of scar, alteration of dermal sensation, taste formation, also functional problems such as the reduction of salivation. Because of such problems, recently, in the treatment of submandibular duct stones, efforts have been made to preserve the submandibular gland (9-10).

**Case Summary**

A 24 year old male presented to our department for the chief complaint of the postprandial swelling at the left submandibular area of neck. This symptom was initiated one years ago and getting increase in size. It was associated with increase in severity of pain and swelling before and during meal followed by gradual relief by itself.

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In physical examination, a diffuse swelling was seen on the left submandibular area about 3cm x 3cm, slight tenderness but firm in consistency. Surprisingly, in intraoral examination, 2 firm swelling can be felt over both right and left floor of the mouth. Considering the history and physical examination, a provisional diagnosis of submandibular duct stones was made hence computed tomography of the neck was performed.

The result showed two rounded opacity likely suggestive of the calculus located at the superomedial to the submandibular gland measuring 1.2cm x 0.9cm on the right side and 0.8cm x 0.9cm on the left side (Figure 1). Other laboratory investigations were within normal limits



Figure 1: CT showed calculus seen at the superomedial to the bilateral submandibular gland (Arrow).



Figure. 2: Lingual nerve identified and preserved. (Arrow)

In view of patient was young and avoidance of external scar, so we planned to remove the stones by intraoral approach to preserve the submandibular gland in general anaesthesia. Intra-operatively two calculi were removed by taking incision at the floor of mouth opposite third lower molar tooth bilaterally. We manage to located and preserved lingual nerve intraoperatively (Figure 2). Post operatively patient made an eventful recovery and was put on our regular outpatient follow up.

### **Discussion**

Choice of treatment for sialolithiasis is depend on the location and size of calculus. Ideally, intraoral approach is preserved when the sialolith is easily palpable and located in the distal third of the gland. But, in patient with intraglandular calculus and associated with recurrent infection may require submandibular sialoadenectomy<sup>13</sup>.

The intraoral access for the removal of calculus is quite efficient and less harmful in relation to sialoadenectomy, as gland function is maintained. Advantages of the intraoral approach include, less risk of iatrogenic injury to the marginal mandibular nerve, avoidance of an external scar, minimal risk of postoperative mucocele formation, or inflammation of Wharton's duct<sup>11</sup>.

Preuss et al retrospectively analyzed 258 patients treated with excision of the submandibular gland through intraoral access and found a low percentage of complications<sup>12</sup>.

Preservation of gland function with low risk of surgery for the patient should be primary objective in the treatment of sialolithiasis, furthermore in young and healthy patient like in our case.

### **Conclusion**

In summary, intraoral technique is an excellent treatment of choice for removal of submandibular sialolith with preservation of the submandibular gland. As in this present case described here, our young patient showed complete resolution of the symptoms, which there were no injury to the lingual nerves as well as in the duct apparatus of the submandibular gland.

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