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Case Series

A Case Series of Submandibulectomy Approach in Pathology of the Submandibular Gland

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Abstract

Treatment of Submandibular gland enlargement due to either neoplastic or non neoplastic diseases are submandibulectomy. It can be approached via transoral or transcervical. The aim of this case series is to demostrate that transcervical approach is the most preferred way because it allow wider exposure of surgical field and safer. Here, we showed a case series of same approach via transcervical for submandibulectomy for submandibular pleomorphic adenoma, recurrent sialolithiasis and plunging ranula. There were no post operative complication noted in all the three patients.

Keywords: Submandibular Gland; Approach; Excision; Submandibulectomy

Introduction

Salivary gland enlargement are more frequently due to neoplastic or non neoplastic conditions. It is more frequently observed in the major salivary glands(parotid, submandibular and sublingual) than in the small minor salivary glands [1]. This condition can be due to diseases that target on the gland tissue or the second abnormality may be in the excretory system.

Submandibular gland can be affected by various type of diseases such as neoplasm, inflammatory or degenerative [2].

The incidence of submandibular gland tumors account for about 3% of all tumors of the head and neck [3]. Preuss SF *et al* mentioned that about 10% of the tumours of salivary glands are located in the submandibular gland with the most common benign tumour as pleomorphic adenoma, although other non neoplastic condition such as sialolithiasis and inflammatory diseases are also found [4].

Symptoms vary according to the diagnosis of submandibular gland swelling [5]. Patients usually present with a painless mass without any associated symptoms in pleomorphic adenoma where as in case of sialadenitis, patient may have episodes of acute inflammatory attack presenting with pain over the submandibular region with fever or recurrent swelling of the submandibular region usually after meal without inflammation. Sialolith in the submandibular gland may be incidental findings during orthopanthomogram as it may be painless when it doesn't block the duct or may be painful in case of sialolithiasis due to inflammatory or obstructive cause. Ranula may also present with a painless bluish mass at floor of mouth and can have visible neck mass if it is large without any associated symptoms.

These clinical scenarios will then determine the need of to get cytology to achieve correct diagnosis coupled with the appropriate diagnostic imaging workup which may include either ultrasonography (USG) or computed tomography (CT).

Submandibular gland excision is commonly indicated in patients with neoplasm and non neoplastic conditions such as sialadenitis, sialolithiasis, and managing sialorrhea which doesn't respond to conservative treatment.

The objective of this case series is to analyze the clinical scenarios of patients coming with different pathology in the submandibular gland being managed with surgical transcervical lateral access being the standard approach for submandibular gland [6].

Case Presentation

Case presentation 1

A 43-year-old male patient was referred for routine dental assessment and treatment. There were no history of pain, dry mouth, dysphagia or odynophagia. The patient had no known allergies and was a non-smoker.

Clinical examination revealed torus tubarius at palatal region. Incidentally, noted the patient to have left submandibular swelling with no tenderness. A large solid mass is palpable at the left submandibular region. An orthopanthomogram (OPG) was taken and presence of sialolith was confirmed (Figure 1) where a large opaque mass being evident in the left submandibular region.

Figure 1: Showed an orthopanthomogram (OPG) was taken and presence of sialolith was confirmed where a large opaque mass being evident in the left submandibular region.

Patient underwent left submandibular gland and stone removal via transcervical approach. Intraoperatively, the tissue around the dissection field bleed easily on dissection and noted a lot of dilated veins (Figure 2A). Examination of the stone (Figure 2B) showed a hard coral-like appearance stone. Histopathological examination of the gland is consistent with sialolithiasis.

Figure 2: figure 2A Showed intraoperative picture of the tissue around the dissection field bleed easily on dissection and noted a lot of dilated veins and figure 2B revealed picture of the stone giving a hard coral-like appearance.

Case presentation 2

An 31-year-old man presented with a large swelling on a left side of his neck. He did not report any pain or paresthesia and loosening of tooth. Because the lesion had grown slowly and there were no pain and loosing teeth, so it seems that it was not a malignant lesion.

In extraoral examination, a well demarcated, soft, fluctuant, non tender swelling, about 7×5 cm in size, was present in the left submandibular area (Figure 3A). Lesion palpable bimanually. There was no obliteration of the floor of mouth, no redness and no pus discharge from the duct. Computed tomography (CT) of the neck revealed a well capsulated cystic like lesion at the left submandibular obliterating the left mylohyoid muscle. Left submandibular gland removal via transcervical approach was performed without any complication. Intraoperatively, during dissection, the tissue surrounding the mass bleed easily but no dilated vein noted (Figure 3B). Post operatively, patient was well without any complication. Histopathological examination showed mucous extravasation cyst which is consistent with plunging ranula from the left submandibular region.

Figure 3: figure 3A Showed a well demarcated, soft, fluctuant, non tender swelling, about 7×5 cm in size in the left submandibular area and, Figure 3B showed the intraoperative picture during dissection, the tissue surrounding the mass bleed easily but no dilated vein noted.

Case presentation 3

A 36 year-old lady presented with a painless over the right side of the neck for 2 years. The mass was enlarging slowly. She denied any history of pain over the neck, nasal block, epistaxis, headache, diplopia, hoarseness, dysphagia or odynophagia. On physical examination, the right neck mass was measuring about 6cm x 4cm, non tender, mobile and firm in consistency. Other ear, nose and throat examination were uneventful. Fine needle aspiration biopsy was taken and revealed as pleomorphic adenoma. Computed tomography (CT) scan of the neck was done and showed large cystic tumour at the posterior aspect of the right submandibular gland region (Figure 4A and 4B). Surgical excision of the right submandibular gland was removed entirely due to clear plane of dissection and the outcome was good (Figure 5A and 5B). There were no post operative complication. Histopathological examination after surgery came back as right submandibular pleomorphic adenoma.

Figure 4A and 4B: Showed a computed tomography(CT) scan of the neck which revealed a large cystic tumour at the posterior aspect of the right submandibular gland.giving a hard coral-like appearance.

Discussion

Submandibular gland weigh around 10 to 15 grams and is divided anatomically into superficial and deep lobe by mylohyoid muscle. Structures closely related to the submandibular gland are the hypoglossal nerve, lingual nerve and marginal mandibular branch of the facial nerve, artery and facial vein. Morbidity due to damage to these structures can happen during intra operative

Figure 5A and 5B: Showed the surgical excision of the right submandibular gland was removed entirely due to clear plane of dissection.

complications. Submandibular gland secrete saliva consisting serous and mucous component and its function acts as lubricant for swallowing of the bolus, in addition for enzyme digestion, which starts from upper digestive tract [3].

Normal submandibular gland is not noticeable but when it is increase in size, it may either appear large enough to be visible on the neck at the submandibular region or bimanually palpable.

Chronic inflammation or sialolithiasis are more common in diseases of the submandibular gland. About 24% of patients with sialadenitis will have co-incidental sialolithiasis [3]. Submandibular gland is more prone to calculus formation. Causal factors attributed to this are due to high content of mucus in saliva, alkaline pH, high concentration of calcium and phosphorus in submandibular saliva or due to anatomical position and irregular course and small duct drainage orifice. If suspected, diagnosis can be made by simple plain radiography, ultrasound or sialography. Computed tomography and biopsy by fine needle aspiration are needed for cases of suspected neoplasm [2].

Surgical excision of the submandibular gland is commonly indicated in patients with neoplasms, chronic sialadenitis, sialolithiasis and plunging ranula. There are several approaches that in several articles discussing approaches to excise submandibular gland [7]. In our case series, we did a classical transcervical approach for different causes of submandibular swelling. We noted that, it was a clear demarcation plane in cases of submandibular gland pleomorphic adenoma but in cases of submandibular gland atrophy in sialolith and ranula, there were no clear plane of dissection. This could be attributed by repeated infection. Fortunately, there were no post operative complications and all three of our patients were discharge well.

Submandibular gland surgical approach can be done via transcervical, intraoral or endoscopic. Our case series present the clinical presentation of each patients with different diagnosis involving the submandibular gland treated with excision via transcervical approach. Our experience suggests that this approach is a relatively simple procedure which involve the low risk for the injury to the nerve structure around the gland, aesthetically good and allow a wide and complete resection margins for neoplasms.

However, to date, there were no case series published on submandibular gland excision via transcervical approach with different diagnosis are available in the literature [6,8]. The aim of this case series is to share the clinical symptoms and signs, radiological diagnostic methods, histopathological findings which point to possible diagnosis of submandibular gland swelling which can be treated with transcervical surgical excision of the gland with acceptable rates of complications and sequalae. With application of surgical principles and respect to tissue planes, the risk of neurological complications can be reduced [9].

Conclusion

In conclusion, the major diseases of the submandibular gland that justify surgical treatment are pleomorphic adenoma and sialodenitis with sialolithiasis. The excision of the submandibular glands has low morbidity, with few complications.

Conflict of Interest

There is no conflict of interest.

Bibliography

1. Mehanna H., *et al*. "Salivary gland swellings". *Clinical Otolaryngology* 38.1 (2013): 58-65.

2. Juan Araya., *et al*. "Incidence and prevalence of salivary gland tumours in Valparaiso, Chile". *Medicina Oral Patologia Oral y Cirugia Bucal* 20.5 (2015): e532-e539.

3. Carvalho., *et al*. "Submandibular gland excision". *Revista do Colégio Brasileiro de Cirurgiões* 42.1 (2015): 14-17.

4. Preuss SF., *et al*. "Submandibular gland excision: 15 years of experience". *Journal of Oral and Maxillofacial Surgery* 65.5 (2007): 953-957.

5. Capaccio P., *et al*. "Transoral removal of hiloparenchymal submandibular calculi: a long-term clinical experience". *European Archives of Otorhinolaryngology* 268.7 (2011): 1081-1086.

6. Springborg LK and Møller MN. "Submandibular gland excision: long-term clinical outcome in 139 patients operated in a single institution". *European Archives of Otorhinolaryngology* 270.4 (2013): 1441-1446.

7. Torroni AA., *et al*. "Transcervical submandibular sialoadenectomy". *Journal of Craniofacial Surgery* 18.3 (2007): 613-621.

8. Dalgic A., *et al*. "Submandibular triangle masses". *Journal of Craniofacial Surgery* 24 (2013): e529-31.

9. Selim Sermed Erbek., *et al*. "Submandibular Gland Surgery: Our Clinical Experience". *Turkish Archives of Otorhinolaryngology* 54.1 (2016): 16-20.