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Case Report

Endoscopic assisted resection of base of tongue lesion: a case report

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ABSTRACT

Surgery for the base of the tongue lesions can be challenging since this area is difficult to access and contains important neurovascular structures. External incision in the neck via an approach that varies from a transoral midline glossotomy approach to a lip-split mandibulotomy, which inevitably results in obvious scarring of the face and neck. Transoral robotic surgery can be considered for removal of these difficult neoplasms. But limitations of robotic surgery include the size and cost of the device, a learning curve, and safety concerns. Hence, alternative surgical approaches that allow for good exposure, complete tumour excision, low complication rates, low recurrence rates, and no postoperative neck scarring are preferred.

Keywords: Base of tongue lesion, Endoscopic assisted, Tongue stitch

INTRODUCTION

Surgical removal of lesions on the base of the tongue can be challenging for head and neck surgeons. This area is difficult to access and contains important neurovascular structures, such as the hypoglossal nerve and lingual artery.

Neoplasms of the tongue base, including both malignant and benign lesions, are rare. Benign lesions of the base of the tongue may include a lingual thyroid mass or ectopic thyroid tissue, squamous papilloma, pleomorphic adenoma, schwannoma, lymphoid hyperplasia, haemangioma or myoepithelioma.[1,2]

Patients with these conditions can present with the sensation of a foreign body, dysphagia, dysphonia or obstructive sleep apnoea.

Surgical removal of these lesions is usually accomplished through an external incision in the neck via an approach that varies from a transoral midline glossotomy approach to a lip-split mandibulotomy which inevitably results in obvious scarring of the face and neck.[3-5] Some articles have described transoral robotic surgery for removal of these difficult neoplasms.[6] Limitations of robotic surgery include the size and cost of the device, a learning curve, and safety concerns. Alternative surgical approaches that allow for good exposure, complete tumour excision, low complication rates, low recurrence rates, and no postoperative neck scarring are preferred.

In recent years, several articles have published data about the safety and feasibility of endoscopy-assisted resection of benign neoplasms.

CASE REPORT

A 10-year-old boy presented to us with a mass over the tongue for 2 years gradually progressed to the present size associated with difficulty in swallowing.

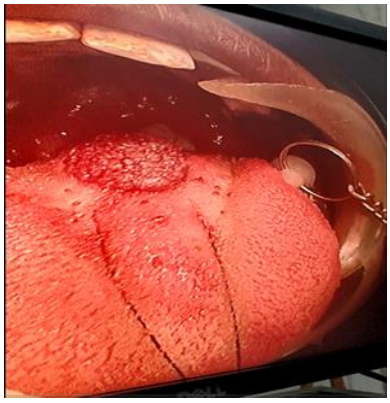

Figure 1: Tongue stitch being taken.

Figure 2: Visualisation of the lesion.

Figure 3: The lesion being bipolarised.

On examination tongue movements were normal, mass over the tongue at the junction of anterior 2/3rd and posterior 1/3rd about 2×3 cm that does not bleed on touch.

After preoperative workup surgery was planned transoral under general anaesthesia. To have an easier access to the lesion and also to have a free hand to handle the endoscope a tongue stitch was taken. Using endoscopic assistance, the lesion was first visualised, bipolarised and then was completely excised. Strict haemostasis was achieved throughout. The defect was then sutured with Vicryl 3.0.

Postoperative period was uneventful.

The haptoglobin-related protein (HPR) report showed features suggestive of fibrosed haemangioma.

In the follow up period there was well healed posterior surface of the tongue and there was no recurrence.

DISCUSSION

Lingual haemangiomas pose problems to the patients, producing cosmetic deformity, recurrent haemorrhage, and functional problems with speaking, deglutition, and mastication.[7]

Most lingual tumours present as mucosal changes and tongue being superficially located and easily accessed; these can be diagnosed without imaging analysis. However, the characteristic and extent of lesions situated at deep portion of tongue, such as its base or submucosal lesions can be recognized only on cross-sectional computed tomography (CT) scan or magnetic resonance imaging (MRI). Haemangiomas usually appear as a well-demarcated enhancing mass often containing phlebolith on CT scan. MRI shows the lesion as a solid mass with isointense or slightly high signal intensity to muscle on T1-weighted images and heterogeneous signal intensity on T2-weighted images. Post contrast T1-weighted imaging commonly demonstrates prominent enhancement.

Management of haemangioma depends on a variety of factors, and most haemangiomas requires no intervention. However, 10-20% requires treatment because of the size, location, stages of growth or regeneration. There are many treatment modalities reported in the literature for head and neck haemangiomas, including wait and watch policy for spontaneous involution, intralesional and systemic corticosteroid treatment, embolization, excision, electrolysis and thermocautery, immunomodulatory therapy with interferon alfa-2a, and laser photocoagulation.[8] Medical management includes systemic and intralesional administration of corticosteroids. However, only 30% respond to corticosteroids and they are not free from complications. Systemic corticosteroids carry well-documented risk,

such as disseminated varicella, herpes infection, growth retardation and cushingoid habitus.[9] Recent interest has centered on interstitial delivery of laser energy to photocoagulate vascular lesions. Currently, sclerotherapy is employed largely because of its efficiency and ability to conserve the surrounding tissues.[10]

Among the sclerosing agents available, excellent results have been reported for sodium morrhuate, sodium sulfate tetradecyl, polidocanol and ethanolamine oleate, and hypertonic glucose solution.[11] Growing haemangioma can be treated effectively by systemic drug therapy, sclerotherapy, laser therapy or combined therapy. Transcutaneous and contact applications of laser energy have been studied with the argon and Nd: YAG (neodymium-doped yttrium aluminum garnet; Nd:Y3Al5O12) lasers while the 585-nm flashlamp - pulsed dye laser can be used in cutaneous and subcutaneous hemangiomas.[12] Vesnaver applied photocoagulation with interstitial Nd:YAG laser in 111 patients with vascular lesions in the head and neck region and he concluded that, Nd: YAG laser is a safe and effective tool for treating vascular lesions.[13]

Haemangiomas of the tongue are rare lesions which can cause distressing problem to the patients, producing cosmetic deformity, recurrent haemorrhage, and functional problems with speaking, mastication and deglutition. The treatment depends on lesion location, size and evolution stage, and the patient's age. Due to its side effects, radiotherapy and chemotherapy would not be suitable as a treatment choice for tongue lesion. Swallowing, chewing and speaking function disabilities were seen in the cases where CO_2 laser was applied.[11,14]

Surgery is usually indicated when there is no response to systemic treatments, or even for aesthetic reasons, being performed as a simple excision in combination or not with plastic surgery. Conservative or further aggressive forms of treatment may be tried for the haemangiomas of the tongue. Both treatment methods have disadvantages. In the conservative treatment, recurrences may be frequent. On the other hand, aggressive treatment could also cause function loss.[10,15] However, the results of cryotherapy have been reported to have high success rates. Kutluhan used plasma knife surgery for excision of haemangioma of tongue.[16]

For lesions, which do not respond to steroids, surgical therapy is often necessary. Surgery may be complicated by extreme blood loss. Surgical resection may be facilitated by pre-operative embolization in selected cases although embolization has also been used as the sole form of treatment for unresectable lesion.[17] Laser photocoagulation is the other modality of surgical treatment. Both surface and intralesional delivery of laser phototherapy are used for treatment of haemangiomas and vascular malformation. Although laser therapy has fewer complications, the frequent numbers of treatment, variable response and regrowth of lesion are the disadvantages of this technique.

A retrospective observational study conducted by Fan et al from May 2013 to January 2016 which included twelve patients with benign lesions on the base of the tongue underwent endoscopy-assisted resection through the transoral approach using an ultrasonic harmonic scalpel and this approach was found safe and feasible surgical technique for the removal of benign lesions at the base of the tongue.[18]

In our case, the patient was planned for transoral excision under endoscopic assistance. A tongue stitch was taken to have easier access to the lesion which was in the posterior 3rd of the tongue. The lesion was then excised using bipolar and the defect was sutured. The histopathology showed features suggestive of fibrosed haemangioma. The post-operative period was uneventful and in the follow up period the wound healed well.

CONCLUSION

Using this simple method of taking a tongue stitch, the base of tongue lesions can be easily accessed with minimal trauma to the tongue and post-operatively recovery is also faster. The advantages with endoscopic assistance are better visualisation of the lesion while operating and less injuries to the surrounding areas. The resection of lesions in the tongue base area with the assistance of endoscope is a viable means of minimally invasive surgery. However, this method can be used only for small lesions of the base of tongue.

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