

Pterygoid Muscle Transposition for Reconstruction of Small Posterior Defect Along with Primary Closure Following Surgery for Oral Cancers: A Novel Technique

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Abstract

A novel method for the primary reconstruction of the defect in the posterior oral cavity following excision of retromolar trigone (RMT) is described. It uses a combination of lateral pterygoid flap along with primary closure of the residual floor of mouth mucosa and buccal mucosa for primary repair of the defect.

This is a functionally satisfactory and simple reconstructive procedure with a shorter operation time and hence can be used for reconstruction in high-risk patients. To the best of our knowledge, this technique of primary repair of posterior oral cavity has not been described in literature.

Keywords: Pterygoid muscle flap, Oral cancers, Reconstruction.

INTRODUCTION

Despite the remarkable progress made in the field of oral and reconstructive surgery, defects arising as a result of surgical removal of small and medium-sized tumors of the retromolar trigone (RMT), palatoglossal arch, posterior part of the lateral floor of the mouth, gingivo-glossal sulcus, and the adjoining areas, continue to present a challenge. Most methods of reconstruction presently in vogue, when used in such a situation, are associated with some morbidity and possible risks of complications.

The primary aim of treatment in patients with oral cavity cancer is to achieve complete cure of the disease with minimal disturbance of the quality of life. Hence after complex primary surgeries of the oral cavity, there is a need for reconstruction. This can vary from a simple closure to complex multistage procedures with restoration of form and function as the goal. Furthermore, only when primary healing of oral mucosa has occurred (14-21 days), radiation be safely started without inviting radionecrosis. Complex defects after surgical excision is often reconstructed with microvascular free tissue transfer that is usually lengthy and associated with donor site morbidity.

TECHNIQUE

We propose a technique of primary repair of posterior oral cavity and RMT using lateral pterygoid flap, thus circumventing the need for distant flaps. A 55-year-old male patient with biopsy proved squamous cell carcinoma of right posterior buccal mucosa extending on to the retromolar trigone was admitted at our tertiary care hospital. On examination mouth opening was adequate, patient was partially edentulous. Cheek skin was free and neck nodes were negative. Routine hematological investigations and chest tomography was normal. Computed tomography (CAT scan) showed tumor infiltration of the inner table of mandible. Wide local excision with posterior segmental mandibulectomy was done for the primary tumor with a midline lip slit skin incision. The resulting defect involved partial loss of buccal mucosa, posterior segment of the mandible and part of anterior tonsillar pillar. The lower free end of the lateral pterygoid (Fig. 1) was mobilized and primarily sutured with the residual mucosa of the anterior tonsillar pillar medially and with the residual buccal mucosa laterally (Fig. 2). The remnant floor of mouth mucosa was stitched to the buccal mucosa cut edge. The skin incision was primarily closed.

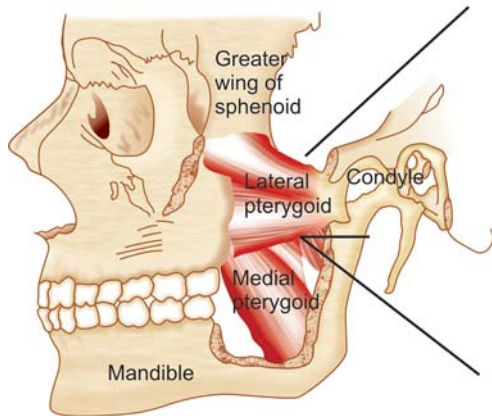


Fig. 1: Diagrammatic representation of lateral pterygoid muscle



Fig. 2: Perioperative view showing reconstruction using lateral pterygoid muscle (black circle)

Mouth opening exercises were started on the first postoperative day itself. Patient was kept on nasogastric feeding for 5 days. Oral liquid feeds were started on the third postoperative day and normal soft diet on the 6th postoperative day.

DISCUSSION

Approximately 10% of oral cavity carcinomas arise from the posterior part of the oral cavity¹ and from the borderline territories between the oral cavity and oropharynx. Operative treatment with safe resection margins produces a variety of complex soft and hard tissue defects. Considering the size of the defect and the soft tissue loss, the options are skin graft, primary closure, pedicled flap and composite free

tissue transfer. Skin grafts² are technically difficult, successful in only two-thirds of patients, have a tendency to get fibrosed and may lead to trismus. PMMC (pectoralis major myocutaneous) flap is a widely adopted reconstructive modality, which may lead to unacceptable bulk and shoulder dysfunction.³ Deltopectoral or forehead flaps have only an historical interest and should be discouraged as first line options. Undoubtedly, radial forearm flap⁴ is ideal for reconstruction of larger soft tissue defects. However, the radial forearm flap needs better infrastructure, better expertise, longer operative time which may be a deterrent in low resource settings.

Local flaps can also be used for restoration of the delicate zone between the posterior oral cavity and the oropharynx. Tongue flaps can hinder the mobility of the tongue unnecessarily. Some local flaps such as the inferiorly or the superiorly based masseter or masseter in combination with buccal mucosal transposition flap are good options.⁵ But these are of limited use in most posterior defects of oropharynx. Another more complex method introduced by Maier et al⁶ uses 2 flaps to reconstruct similar defects. Keeping these difficulties in mind, we propose a new superiorly based lateral pterygoid flap for primary repair of small (3 × 3 centimeter) posterior oral and oropharyngeal defects. The flap is extensively supplied by the pterygoid branches of maxillary artery and is easily accessible after excision of primary disease of the posterior buccal mucosa and RMT.

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