

Extended nasolabial flap compared with the platysma myocutaneous muscle flap for reconstruction of intraoral defects after release of oral submucous fibrosis: a comparative study

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Abstract

We compared extended nasolabial flaps and coronoidectomy with platysma myocutaneous muscle flaps in the management of 20 randomly selected patients with histologically confirmed oral submucous fibrosis. Ten patients were treated by release of fibrous bands, bilateral coronoidectomy, and reconstruction with an extended nasolabial flap (nasolabial group), and the other 10 by bilateral release of fibrous bands, coronoidectomy, and reconstruction with a platysma myocutaneous muscle flap (platysma group). In the nasolabial group the mean preoperative interincisal mouth opening was 12 (range 3–14) mm, and in the platysma group it was 11 (3–13). All 20 patients were given vigorous postoperative physiotherapy, and were followed up for 3 years. The interincisal mouth opening improved to 47 (35–45) mm in the nasolabial group and 48 (41–52) mm in the platysma group. The procedures were equally effective in the management of the oral submucous fibrosis, except that the extraoral scar was not aesthetically acceptable in the nasolabial group.

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Introduction

Oral submucous fibrosis is an insidious, chronic, disabling disease of obscure aetiology that affects the entire oral cavity, sometimes the pharynx, and rarely the larynx. It is characterised by blanching and stiffness of the oral mucosa, which causes progressive limitation of mouth opening and intolerance to hot and spicy food.

It is an established precancerous condition, which occurs mainly on the Indian subcontinent. Its precancerous nature was first described by Paymaster,¹ who recorded the onset of slowly growing squamous cell carcinomas in one third of patients. Murti et al.² reported the malignant transformation

of oral submucous fibrosis. As the aetiology is uncertain, its treatment has largely been symptomatic; various treatments have been described with inconsistent results.

We have compared two techniques of closure of the defects after release of oral submucous fibrosis. We have used two local flaps and emphasise the importance of coronoidectomy. We think that the platysma myocutaneous muscle flap is a better option than an extended nasolabial flap in terms of extraoral facial scar for the management of oral submucous fibrosis.³

Patients and methods

Twenty consecutive patients who were treated at the Department of Oral and Maxillofacial Surgery, Swargiya Dada

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Fig. 1. Harvesting of the nasolabial flap (published with the patient's permission).

Saheb Kalmegh Dental College and Hospital Hingna, Nagpur (18 men and 2 women aged between 18 and 41 years of age), were randomly selected for this retrospective study, which was approved by the institutional ethics committee. No patient had interincisal opening of more than 25 mm.

Under aseptic conditions all patients were intubated and general anaesthetic given through a bronchoscope. Incisions were made using an electrosurgical knife from the corner of the mouth to the soft palate at the level of the linea alba avoiding injury to Stenson's duct. The bands were cut and the interincisal opening recorded. The coronoid processes were approached through the same incision and bilateral coronoidectomy or coronoidotomy done. The maxillary and mandibular third molars were extracted.

In the nasolabial group extended nasolabial flaps as described by Borle et al.⁴ were raised for grafting from the tip of the nasolabial fold to the inferior border of the mandible. The flaps were raised bilaterally in the plane of the superficial musculoaponeurotic system from both terminal points to the region of the central pedicle. The pedicle was 1 cm lateral to the corner of the mouth and the diameter of the pedicle was roughly 1 cm (Fig. 1). The flap was transposed intraorally through a small transbuccal tunnel near the commissure of the mouth without tension. The inferior wing of the flap was sutured to the anterior edge of the defect, while the superior wing was sutured to the posterior edge of the defect. The extraoral defect was closed primarily in layers after liberal undermining of the skin in the subcutaneous plane to prevent any tension across the suture line.

In the platysma group a superiorly based platysma myocutaneous muscle flap was raised as described by Baur⁵ and used for reconstruction of the intraoral defects. With the neck hyperextended the proposed skin paddle was outlined on the ipsilateral neck, below the inferior border of the mandible (Fig. 2). The superior incision was made first and a plane superficial to the platysma muscle was dissected carefully cephalic to the inferior border of the mandible. A skin incision was then made at the inferior line of the skin paddle, with additional exposure of the platysma



Fig. 2. Harvesting of the platysma muscle myocutaneous flap (published with the patient's permission).

muscle inferiorly. The platysma muscle was transected sharply at least 1 cm inferior to the edge of the skin paddle, and a subplatysmal plane of dissection developed just below the inferior border of mandible. If the cervical branch of the facial nerve was to be incorporated, it was necessary to identify the nerve in the superficial layer of the deep cervical fascia and carefully dissect and preserve its proximal portion. Once the plane of dissection was fully developed, the platysma myocutaneous flap was transected vertically, anteriorly, and posteriorly for full mobilisation. The flap was introduced into the oral defect by creating an approximately sized soft tissue tunnel. The harvested flap was sutured to the defect, which was created by release of a fibrous band. The donor site was easily closed in layers to obtain an acceptable cosmetic result as shown in (Fig. 3b).

A soft temporomandibular joint trainer was placed in the oral cavity postoperatively for 10 days to prevent dehiscence of the flap as a result of occlusal trauma. After a latent period of 10 days, physiotherapy was started with the help of Hister's jaw exerciser to prevent contracture and relapse. The patient was instructed in the exercises and told to do them for up to 6 months until they were followed up in the Department of Oral and Maxillofacial Surgery.

We used Student's unpaired *t* test for statistical analysis.

Results

There were 2 groups of 10 patients each, one of which had nasolabial flaps, and the other platysma myocutaneous flaps. The differences in mouth opening are shown in Table 1. All

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