Mandibular Mucoperiosteal Flap

Madan Kapre, Hon. Consultant,

R. S. T. Cancer Hospital & Research Institute, Nagpur

The closure of large oral defects following resection of cancerous growth has always posed challenge for Head and Neck Surgeons. These defects are often closed in staged manner for reasons of practicality and lack of availability of expertise. This unfortunately creates oral cripples for unspecified time creating lot of nutritional, social and psychological problems. Over last 5 years Mandibular Mucoperiosteal Flap which has

been designed and used with gratifying results for closure of oral defects in over 100 cases; the impressive simplicity and local availability hall marks this easily adoptable procedure. An attempt is also made to discuss its logic, technic and limitation.

For closure of oral defects I have designed Mandibular Mucoperiosteal Flap and presented my earlier work in 1995 A.O.I. Conference. This

Fig.1

Mandibular Mucoperiosteal Flap being harvested. A - Bare Mandible, B - Mandibular Mucoperiosteal Flap, C - Tongue and Floor of mouth

Fig.2

Mandibular Mucoperiosteal Flap with anterior incut.

is my report on this very useful and simple flap after nearly 5 years of experience. In this paper I have discussed its indications, limitations and advantages. I have also presented my statistics of success and reasons for failures. The work is carried out at R.S.T. Cancer Hospital and Neeti Nursing Home, Nagpur, with follow up from few months to few years.

MATERIAL AND METHOD

106 cases were selected for employment of Mandibular Mucoperiosteal Flap for closure of oral defects following excision of cancers of lower alveolus and cheek. The flap is tailor designed for the closure by fashioning anterior or posterior medical cuts depending upon the location and size of defects. In 54 cases there was full thickness cheek loss and on such

occasions cervico-facial rotation/transposition flaps were employed. 33 cases were operated after radiation-therapy or second salvage surgery. These cases are not included in this presentation as they demand combination of approaches. However, I have found this Mandibular Mucoperiosteal Flap useful in these circumstances also.

METHOD

Mandibular Mucoperiosteal Flap is cut longitudinally along the gum margin (almost tangentially to the gum margin) either on the oral or buccal side depending on the site of disease. The flap is raised on the entire surface of the mandible either medially or laterally as per the case. The anterior and posterior incuts are taken as per the excision defect. Usually in case of

medial flap the posterior in-cut ends at the junction of anterior pillar of tonsil and tongue. The anterior in cut finishes at the anterior most attachment of tongue. This gives about 3 fingers width (4.5 cm) of mucoperiosteal tissue in case of medial flap and about 2 finger width (3 cm.) of mucoperiosteal tissue in case of lateral flap. Please note these dimensions are after allowing for retraction and can be further augmented by undermining the tongue or cheek as the case may be. Anterior and posterior free edges are now tailor made to fit into the cheek defects. The suturing is now done routinely with 3° vicryl but earlier we used 2° vicryl chromic catgut on atraumatic needle.

Results of Survival of Mandibular Mucoperiosteal Flap

No. of Cases		Early Survivor		Late Survivor	
106		93		93	
Failure	Total	Early	Late	Total	
	13	13	0	13	

DISCUSSIONS

(A) Logic

- There is no spread of malignancy across the mandible unless both the inner and outer tables along with periosteum are involved.
- Periodontal membrane fuses firmly at tooth socket offering firm resistance to spread of cancer.
- There are no lymphatics but haversian system in mandible.
- The spread of malignancy is along the entry and exit points of blood vessels only.
- Safety profile of marginal mandibulectomy is now well documented.
- All these facts make it safe to use the uninvolved mandibular mucoperiosteum for reconstruction.

(B) Limitation of use of this flap are :

1. Growth must restricts on one side of Mandible.
2. Cannot be employed in Edentulous patients.

3. Removal of submandibular salivary gland is strongly recommended.
4. Removal of mandible is not necessary if the growth restricts itself to the cheek.

(C) Advantages :

- Easily done and taught.
- Locally available.
- Tissue material is perfect.
- It is not bulky like myocutaneous flaps.
- Do not conceal recurrence as in cases of bulkier skin or pedicled flaps.
- Periosteum is tough with low BMR.
- Mucosa is a rapidly growing tissue.
- Blood supply both arterial and venous drainage is from tongue which is random and good.
- No gravity factors.
- Closure of outer defects is easy.

(D) Reasons for Failure :

Particular	Post Radiotherapy
	Tension
	Closure of double defects (Full thickness loss of cheek)
General	Infection
	Anaemia
	Poor Oral toilet.

CONCLUSIONS

I have successfully closed large oral defects with this flap for last 5 years. It is tough yet simple and obviate need for calling other surgical specialities to do the closure. It avoids patients becoming oral cripples with antecedent nutritional, social and psychological problems. In rural patients where economics of staying in city and returing for multiple procedures is a genuine problem, the mandibular mucoperiosteal flap has provided a boon and I have successfully deployed this natures gift with apt gratitude and results.