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Technical note

Modified tie-over technique for lingual sulcoplasty (vestibuloplasty)

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Sulcoplasty has traditionally been approached labially and buccally to increase the retention and stability of a denture by increasing the relative vertical depth of an atrophic alveolar ridge.[1] The advent of dental endosseous implants has reduced the need for preprosthetic surgery. There has, however, been a resurgence in the use of sulcoplasty with the rise of soft tissue resections and reconstructions for oral malignancy. A sulcoplasty in these cases can restore mobility of the tongue, particularly where the flap and tissue may be tethered at the level of the mandibular crest, despite a good alveolar height.

A mucosal incision is made at the border of the attached and movable mucous membrane. The mylohyoid is then released supraperiosteally on the lingual side, care being taken not to go past the mylohyoid line or through the mylohyoid muscle. The superior aspect of the incised lingual mucosa is secured to a new position on the sublingual tissues (Fig. 1). The new sulcus is packed with a BIPP (Bismuth Iodoform Paraffin Paste) pack,[2] and cotton wool rolls placed longitudinally over the pack and the dressing secured using continuous percutaneous 1/0 polypropylene (Fig. 2). A straight needle is passed from the external skin surface below the lower border of the mandible through to the lingual surface, taken over the dressing and cotton wool rolls in a loop without entrapping the lingual nerve or the submandibular duct. This is tied externally over a cotton wool roll on the skin (Fig. 3). The dressing is left for three weeks to allow healing of the new sulcus by secondary intention (Fig. 4), and then a prosthesis with a soft lining and over extended flange is placed to maintain the depth of the sulcus.

Advantages

Supraperiosteal dissection[3] avoids exposing the bone and maintains its blood supply. Dissecting above the attachment of the mylohyoid muscle makes it easier and encourages epithelialisation and healing by secondary intention.[5] As scar tissue forms it avoids both skin or mucosal graft and associated donor site morbidity.[4]

The tie-overs secure the dressing in place and avoid the need for a prosthetic stent, which patients find uncomfortable. The dressing remains well positioned and does not require replacement. These tie-overs involve passage of the needle from the skin only to the lingual tissues. As they do not involve the buccal tissues it reduces the risk of damage to the mental nerve.[5] The tie-over sutures are visible to the naked

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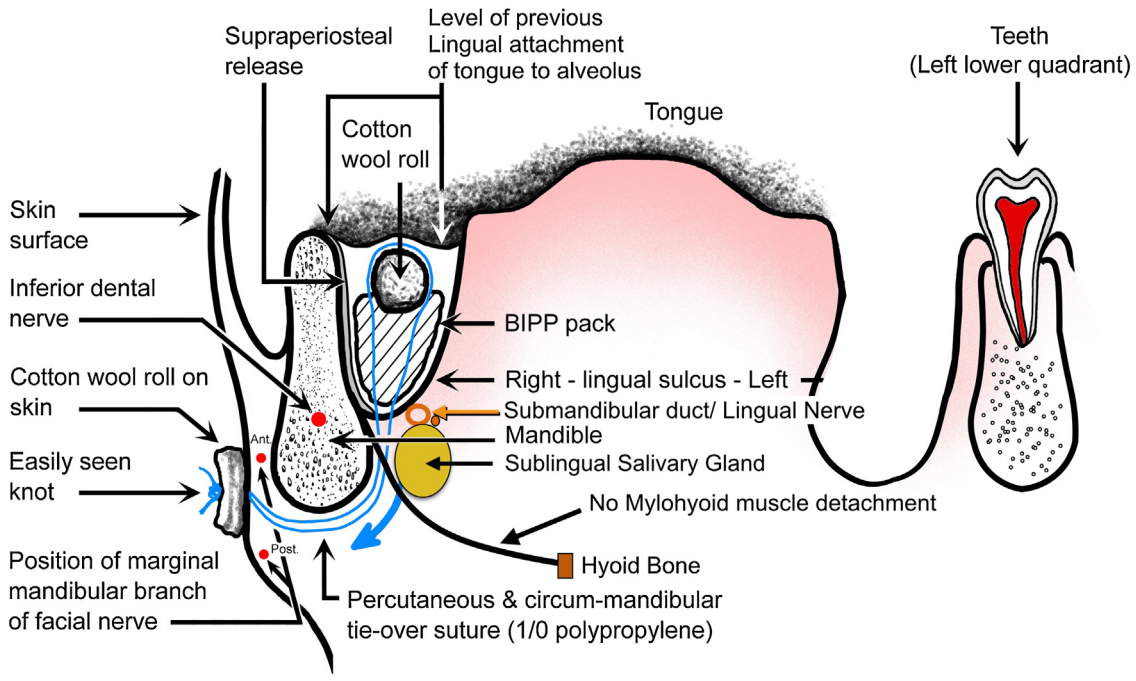

Fig. 1. Technique of modified lingual sulcoplasty.

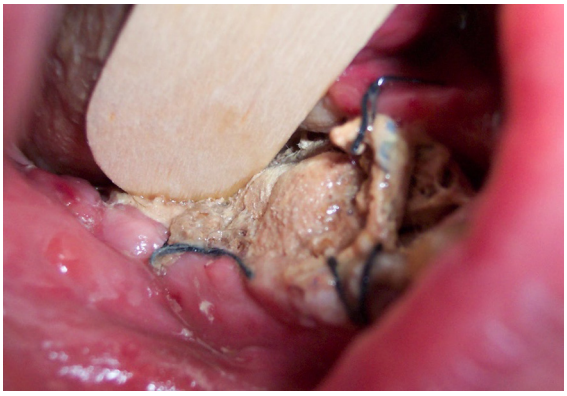

Fig. 2. Bismuth iodoform paraffin paste dressing in the new sulcus encourages healing by secondary intention and epithelialisation.

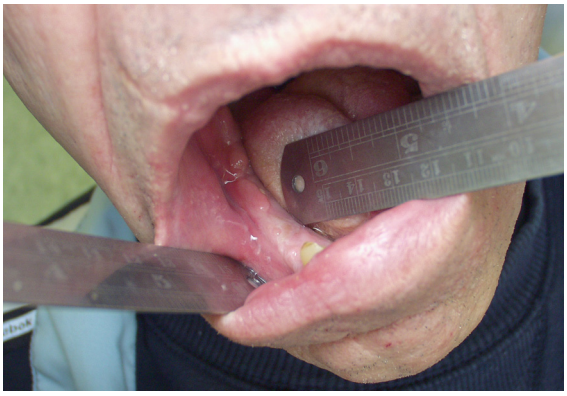

Fig. 4. New sulcus showing formation of resilient scar tissue.

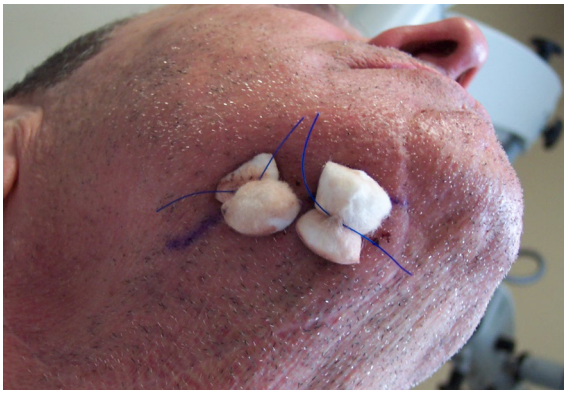

Fig. 3. Lingual tie overs are secured on the skin over cotton wool rolls.

eye so any slippage of these and resultant loss in depth of the sulcus can be seen early and easily corrected; in addition, the external suture sites are easily cleaned and result in minimal scarring. As the tie-overs rest on a cotton wool roll over skin there is reduced risk of pressure ischaemia or necrosis compared with the suture resting on the buccal side.

The technique avoids a laboratory stage until later for construction of the prosthesis.

Acknowledgements

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Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patients' permission

Ethics approval was not warranted. Clinical photographs used with patients' permission.

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