Preservation of the Vascularised Nasal Lining During Palatal Fenestration Procedures: A Simple 2 Step Technique

Ketan C. Shah¹ · Leo Stassen² · Harpal Singh Flora³

Received: 12 April 2016 / Accepted: 5 November 2016 / Published online: 9 November 2016
© The Association of Oral and Maxillofacial Surgeons of India 2016

Abstract

Problem During palatal fenestration procedure the vascularised, respiratory nasal lining is often sacrificed inadvertently. It normally functions to keep the inhaled air warm, humid and dust free.

Conclusion This vascularised nasal lining when uninjured oncologically can easily be preserved. Preservation of the vascularised nasal lining shall decrease the leakage of nasal secretions and aid in the healing of reconstruction of the defect when local or regional flaps are used.

Keywords Nasal mucosa · Nasal epithelium · Maxilla · Palatal neoplasms · Palate

Surgical technique:

This surgical technique describes a method to prevent injury to the nasal lining which can occur as collateral damage where the removal of palatal tumours requires removal of the palatal bone.

The patient is prepared in the standard surgical fashion with the head extended. The tumour on the palatal mucosa is marked and outlined with a clearance of at least 10 mm.

Local anaesthetic containing adrenaline is then infiltrated for haemostasis and postoperative pain control.

Step 1 Involves making an incision in the anterior maxillary buccal vestibule from the canine to canine to expose the bilateral piriform apertures.

Step 2 A Mitchell's trimmer is initially used to separate the nasal lining from the floor of the nose anteriorly. The nasal lining is then separated posteriorly and laterally using a Howarth's elevator. Once the nasal lining has been fully separated, a damp saline soaked gauze is placed between the floor of the nose and the surgically retracted nasal lining to further protect it (Fig. 1).

The excision of the tumour along the marked outline on the palatal mucosa is then carried out with a knife or Colorado needle down to bone. Underlying bone cuts are then performed with a surgical reciprocating saw or a bur along the marked outline, while taking care to avoid injury to the protected nasal lining. On completion of the excision, the tumour is oriented for histopathology. The protected nasal lining is then released and allowed to drape the nasal floor preserving the nasal airway. Haemostasis is ensured. The defect can be reconstructed surgically with a local flap such as a palatal rotation flap. Preservation of the vascularised nasal lining therefore allows a 2-layered reconstruction of the defect thereby improving surgical success and decreasing post op morbidity as it allows normal passage of nasal secretions (Fig. 2).

In more lateral cases where the palatal bone overlies both the maxillary sinus and the nasal bone, both linings can be preserved if required. The maxillary sinus lining is preserved by lifting it via a maxillary anterolateral wall antrostomy. The nasal lining would be preserved with the same method as described.

✉ Harpal Singh Flora
harpalsinghflora@gmail.com

Ketan C. Shah
ketanrahul@hotmail.com

Leo Stassen
leo.stassen@dental.tcd.ie

¹ Leeds General Infirmary, Great George Street,
Leeds LS1 3EX, UK

² St. James Hospital, Dublin, Ireland

³ Royal Victoria Infirmary, Queen Victoria Road,
Newcastle upon Tyne, UK

Fig. 1 The diagram shows the nasal lining retracted by Howarth's elevator prior to palatal fenestration procedure for tumour excision [1]

Fig. 2 The diagram shows how a local palatal flap can be incorporated to create 2 layered closure

The palatal fenestration technique is often used in the management of palatal pleomorphic adenoma. The technique described is indicated in cases with evidence of superficial bony erosion on cross sectional imaging, or in cases where there is a clinically obvious breach in the bony integrity of the underlying palatal periosteum. In benign tumours of salivary gland where the palatal bone is eroded, the removal of the intact vascularised lining on the nasal side is unnecessary and does not compromising the surgical clearance. The intact preserved nasal lining using this technique can decrease the morbidity associated with the procedure and facilitate the healing of the defect often

without the need for further reconstruction in benign paramedian and midline tumours of the palate.

In the vast majority of biopsy proven malignant cases, the technique is not recommended as it may compromise the safety of oncological clearance. However in very carefully selected paramedian cases of malignant palatal disease, after 1 cm clearance margins have been marked out the above technique may help preserve the contralateral nasal lining and thus decrease the overall surgical morbidity.

Although this technique is described for use of the management of palatal tumours, its principles can be

applied to other situations. In congenital cleft cases this nasal lining is already ruptured but the principle of repairing cleft palate and mobilising this nasal lining and closing in a 2 layered repair for cleft palate shows its importance.

We believe that this simple, easy technique has several advantages-

1. Protects unwarranted removal of the nasal lining
2. Facilitates wound healing and provides natural vascular lining over defect
3. Decreases nasal secretion and its spillage into oral cavity
4. Allows compliance with wearing of the obturator prosthesis

Summary

- The nasal lining is often inadvertently sacrificed during the palatal fenestration procedure
- When the nasal lining is uninvolved oncologically, then it can be safely preserved by the technique described.
- Preservation of this nasal lining has many benefits which reduces the surgical morbidity by

- preventing spillage of nasal secretions into the oral cavity
- the vascularised lining helps promote wound healing
- aids compliance with the wearing of an obturator appliance
- when the defect is reconstructed with local flaps, it allows a two layered reconstruction
- The described technique is practiced frequently and successfully by the authors with excellent results

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interests.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

Reference

1. Standring S (2008) Gray's anatomy, 40th edn. Churchill Livingstone, Edinburgh