



Case Report

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Reconstructing Large Palatal Defects: The Posterior Buccinator Myomucosal Flap

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Abstract

The buccinator-based myomucosal flaps have been a mainstay in the reconstruction of small to moderate sized defects in the oral cavity since their introduction in 1989. They are favourable as they have a rich blood supply, are malleable and easy to harvest with minimal morbidity of the donor site. This case report describes the use of a posteriorly pedicled buccinator myomucosal flap in the reconstruction of the soft palate following resection of an *in-situ* carcinoma ex pleomorphic adenoma.

Keywords

Pleomorphic adenoma, Oral reconstruction, Surgical flaps, Buccinator flap, Oral cancer

Introduction

The posterior-pedicled buccinator myomucosal flap (P-BMMF) was first described by Bozola, et al. in 1989 [1] as an axial buccinator musclomucosal flap based on the buccal artery. It comprised the buccal mucosa, submucosa and part of the buccinator muscle. They had successfully used this flap for the management of oral mucosal defects following tumour resection and closure of cleft palates. Since then, different variations of this flap have been described: island pedicle flaps [2]; flap pedicle based off the facial artery [3]; and combined extra-oral, intra-oral harvesting techniques [4]. The variations have expanded the use cases of the BMMF. The BMMF is favourable for oral reconstruction as it replaces mucosa with mucosa. Additionally, there is little to no morbidity of the donor site [5]. This report describes the use of the P-BMMF for the repair of a large palatal defect following resection of an *in-situ* carcinoma ex pleomorphic adenoma.

Case Report

Presentation

A 70-year-old female was referred to the Oral and Maxillofacial Surgery department with a three-week history of a firm swelling on the left soft palate. The swelling was < 10 mm in diameter, smooth and homogeneous. At the time, a differential diagnosis of salivary gland cyst was made and the patient was listed for excisional biopsy of the lump. Unfortunately, for numerous reasons, this patient was lost to follow up for nearly 6 years. By the time of operation, the

swelling had increased in size to 35 mm, was ulcerated and had indurated margins. The patient reported difficulty swallowing due to the size of the lump. There were no involved lymph nodes in the neck.

Investigations

Magnetic resonance imaging (MRI) was not possible as the patient did not fit in the machine. Computed tomography with contrast was requested. The report described 'features suggestive of a well circumscribed 2 cm lesion related to the left side of the soft palate'.

Management

Owing to the location and size of the lump (Figure 1) the procedure was not amenable for treatment under local anaesthetic. The patient was planned for wide local excision (WLE) and reconstruction with a P-BMMF from the left buccal mucosa under general anaesthetic.

WLE was carefully completed with cutting diathermy. The total size of defect was 50 mm medial to lateral, 33 mm

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Figure 1: 35 mm swelling on left soft palate showing indurated margins and ulceration.

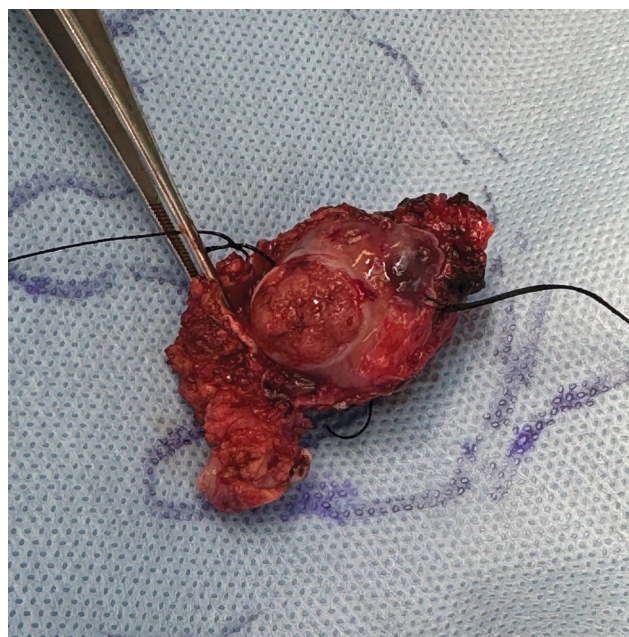


Figure 3: Excised tumour with locating sutures; single suture anterior, double suture posterior.

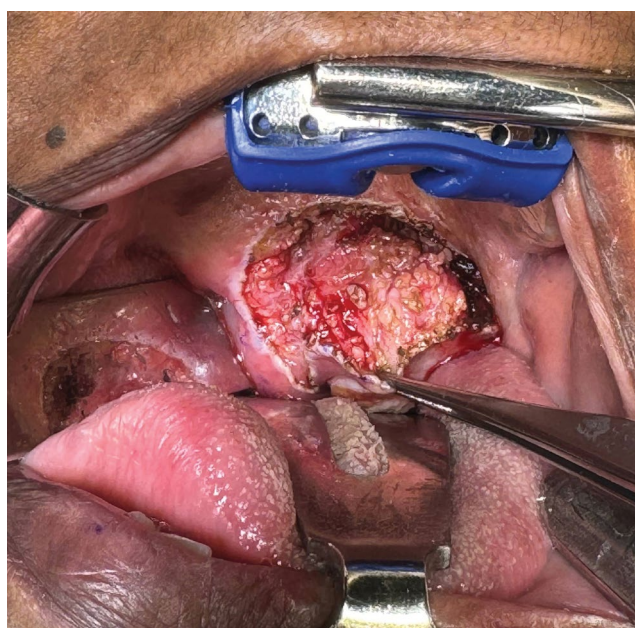


Figure 2: Palatal defect following tumour resection.

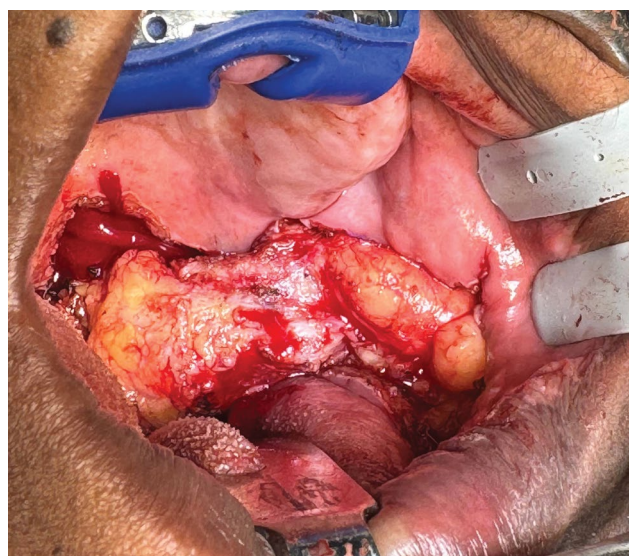


Figure 4: Posterior-pediced buccinator myomucosal flap raised from left buccal mucosa.

anterior to posterior and 23 mm superficial to deep. [Figure 2](#) shows the palatal defect and [Figure 3](#) shows the excised tumour.

The left buccal mucosa was marked for raising the P-BMMF. To avoid damage to Stensen's duct, incision marking was made 10 mm clear of the orifice. The P-BMMF has an apex near the oral commissure. Care was taken not to extend too far anteriorly to prevent scarring and pulling of the commissure following healing [5]. Mucosal incisions were made with cutting diathermy to include the buccinator and the P-BMMF then raised from anterior to posterior. Branches of the labial artery and branches of the facial artery were

ligated. [Figure 4](#) illustrates the raised flap.

The P-BMMF was rotated around the pedicle base into the palatal defect. The flap was then sutured in place with Vicryl. The left buccal mucosal defect was sutured for primary closure. [Figure 5](#) shows the closed defect and buccal mucosa.

Follow up

The patient was reviewed 1-, 2-, 3- and 8-weeks post-operation. The flap and donor site healed well with the patient experiencing little discomfort after the second week. [Figure 6](#) and [Figure 7](#) show the flap and left buccal mucosa at 8-weeks post-operation.

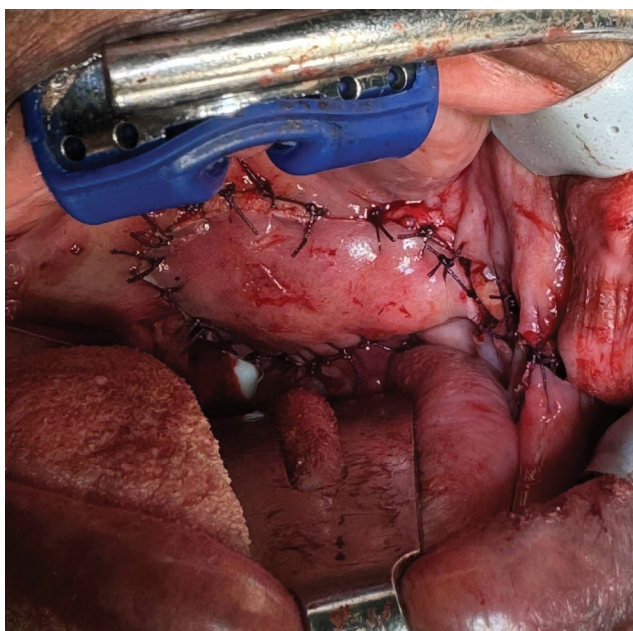


Figure 5: Posterior-pedicled buccinator myomucosal flap sutured to close palatal defect.



Figure 6: Posterior-pedicled buccinator myomucosal flap at 8-weeks post-operation.

The histopathology report confirmed the tumour to be an *in-situ* carcinoma ex pleomorphic adenoma. The tumour was fully excised with clear margins on all aspects. The patient will continue to be reviewed for the following 5-years. Initially, this will be every 6-months before moving to annual review.

Discussion

The BMMF and its numerous variations are incredibly versatile. The flap is flexible and malleable allowing it to be used in the reconstruction of defects of varying shapes. Oral cavity local flaps are advantageous as they replace



Figure 7: Left buccal mucosa and posterior-pedicled buccinator myomucosal flap at 8-weeks post-operation.

mucosa with mucosa, avoid external scarring, and -in the case of the P-BMMF- have minimal morbidity of the donor site. Compared to regional and free flaps they require less surgical expertise, shorter operating times and have fewer complications [6]. The P-BMMF is not restricted by the dentate status of the patient unlike some BMMF variations which may require: Extractions; or the use of a bite block to separate the occluding teeth post-operatively and division of pedicle at a later date [7].

BMMF are not without limitations. The P-BMMF is restricted in the size of defect it is possible to reconstruct. The flap is limited: Posteriorly by the pterygomandibular raphe; superiorly by the parotid duct; and anteriorly by the oral commissure. Inferior extension is dictated by the size of the defect [8]. This has typically prevented the P-BMMF from being used in defects larger than 7 cm [9]. Surgeons have successfully used bilateral BMMF to close larger defects of the palate following tumour resection [6] and for palatoplasty procedures for scarred cleft palates.

In this case, the P-BMMF was the ideal flap owing to its advantages previously discussed. It allowed the patient a speedy recovery with minimal discomfort in the weeks following surgery. At 8-weeks post-operation the patient had returned to normal function with both the flap and the donor site having fully healed. Although not the focus of this report, it is pertinent to mention that surgery and reconstruction would have been less invasive had there not been a loss to follow up for 6 years. During this time the tumour grew from less than 10 mm in size to over 30 mm. Had the patient not re-presented their outcome could have been a lot worse. Following re-presenting there was less than 10 days to the patient having surgery demonstrating what is achievable with multidisciplinary care and teamwork.

Conclusion

This case demonstrates the successful use of the P-BMMF in the reconstruction of a large palatal defect following salivary

gland tumour resection. The P-BMMF has many favourable characteristics compared with other flaps including reliability and ease of harvest and low donor site morbidity.

Acknowledgments

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Consent

Patient consent was gained for publication of this report and their clinical photos.

Conflict of Interest

No conflicts of interest to declare.

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