

Double-layered closure of oroantral fistula using buccal fat pad and buccal advancement flap

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Abstract

Some of the traditional methods that are being employed in the repair of oroantral communication can be broadly divided into local and distant flaps. Recently, because of various advantages, buccal fat pad is increasingly being employed in the repair of oroantral fistula and other oral defects worldwide. However, there are some problems that can be encountered while harvesting BFP which has to be taken care of. In this paper, we present a case with one of such problems, its management, and review of literature on the same.

Key words: Buccal fat pad, buccal flap, oroantral fistula, oroantral communication

INTRODUCTION

An oroantral communication (OAC) may develop as a complication of dental extractions, due to infection, sequelae of radiation therapy, trauma, and removal of maxillary cysts or tumors.^[1,2] OAC of less than 5 mm does not require any interventions and closes spontaneously.^[3] OAC of more than 5 mm requires surgical treatment. Some of the traditional methods that are being employed in the repair of OAC include buccal advancement flaps, palatal rotation and palatal transposition flaps, tongue flaps, and nasolabial flaps.^[1-4] Recently, because of various advantages, buccal fat pad (BFP) is increasingly being employed in the repair of oroantral fistula (OAF) and other oral defects worldwide.^[5] However, there are some problems that can be encountered while harvesting BFP which has to be taken care of. In this paper, we present a case with one of such problems,

its management using BFP with buccal advancement flap and review of literature on the long-term effectiveness of the same.

CASE REPORT

A female patient of 32 years age reported to the department of oral and maxillofacial surgery for the extraction of grossly destructed 26 due to dental caries. After several unsuccessful attempts with intra-alveolar extraction, the patient was taken for transalveolar extraction. During the process of open extraction, OAC of more than 1 cm was noted [Figure 1]. The patient was taken for transalveolar extraction to be followed by closure of OAC by BFP.

Operative procedure

After obtaining adequate local anesthesia using 2% lignocaine and 1:80,000 adrenaline, trapezoidal buccal mucoperiosteal flap was raised; removal of the palatal and distobuccal root was done. Now 1 cm vertical incision was made in the reflected periosteum posterior to the zygomatic buttress to allow exposure and advancement of the BFP [Figures 2 and 3] over the bony defect where it was sutured to the palatal mucosa. During the process of harvesting BFP, perforation was noted, hence a buccal advancement

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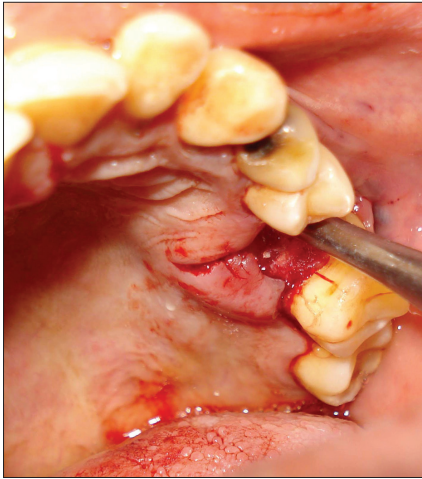


Figure 1: Oroantral communication of more than 1 cm

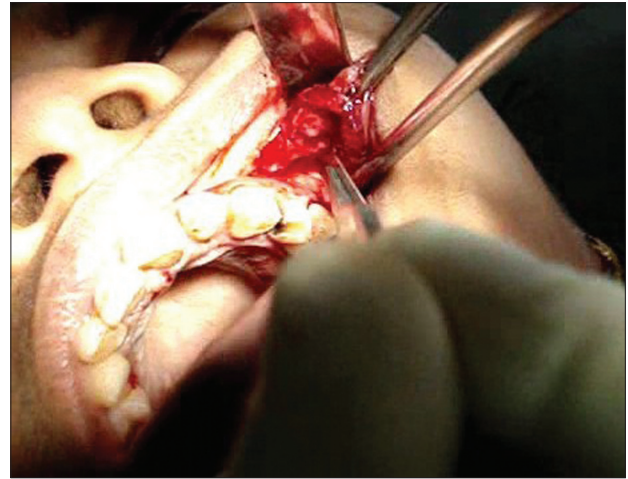


Figure 2: Scoring of the periosteum under the zygomatic buttress to advance the buccal flap



Figure 3: Harvesting of buccal fat pad

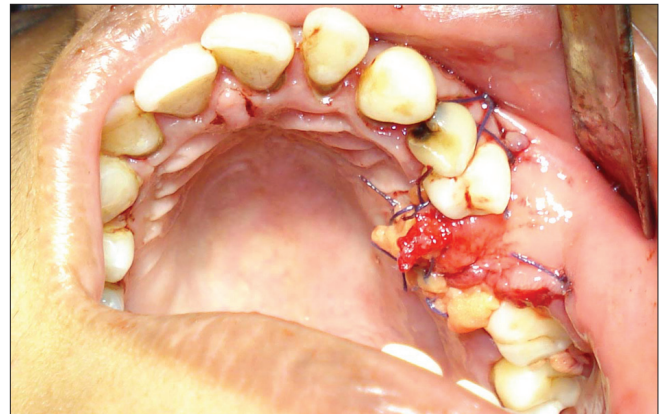


Figure 4: Double-layered closure of OAC using BFP and buccal advancement flap

flap was utilized to cover the same. The flap was sutured in place with simple interrupted 3/0 polygalactin 910 sutures [Figure 4]. The incision was also closed over the bridge segment of the flap with sutures. The patient was warned against blowing the nose for 2 weeks. Antral tetrad consisting of antibiotic, (amoxicillin 500 mg with clavunic acid 125 mg three times daily, and augmentin 625 mg) decongestant, antihistamine, and analgesics were prescribed for 3 days. The patient was followed-up for a duration of 3 months periodically at the regular intervals to evaluate for any postoperative complications like wound dehiscence, necrosis, infection, etc. Complete epithelization was observed with no postoperative complications.

DISCUSSION

BFP has been used for various procedures other than closure of OAF because of numerous advantages and encouraging results.^[2,4] The advantages of BFP include that the location of the BFP is anatomically favorable, the ease and minimal dissection with which it can be harvested and mobilized, simplicity, versatility, excellent blood supply, low

rate of complications, minimal to no donor site morbidity, a quick surgical technique due to fact that BFP is located in the same surgical field as the defects to be covered, a good rate of epithelialization and allows for replacement of the mucoperiosteal flap without loss of vestibular depth.^[2-5] The possibility of harvesting under local anesthesia can be considered as an added advantage,^[2-4] and this advantage was utilized in this study.

Problems that can be noted while harvesting BFP ranges from perforation to shrinkage of BFP and one of which was noted in the present case. Egyedi^[6] recommended coverage of the exposed BFP with a skin graft; however, previous reports have confirmed that epithelization of the flap does take place without split skin graft cover after 3–4 weeks of inset.^[4,5] Covering BFP with buccal flap in a combination technique does not provide any advantages. This is beneficial only when BFP is stretched excessively or is perforated.^[7] We agree with them and also in our opinion wider and larger defects, i.e. defects larger than $5 \times 1 \text{ cm}^2$, can also be better managed with the use of BFP with buccal

advancement flap than BFP alone. It is known that the BFP is larger in children and size varies among persons, and that it may be inadequate in some cases^[8] which again indicates need of a combination technique.

It is worth noting that the use of BFP with buccal advancement flap (combination technique) in the literature is scarce.^[8,9] It provides more stability, can be used to cover BFP and as additional tissue for closure where there is a deficient BFP for closure. It can also be used in cases where a trapezoidal flap is raised for some reasons, cases with perforation and shrinkage of BFP.^[8-10] In the present case, the trapezoidal flap was raised for the purpose of transalveolar extraction and a double-layered closure was done as there was perforation in the BFP during the process of harvesting. Also, the buccal flap need not be sutured to palatal tissue to avoid obliteration of the vestibule. It can be sutured to BFP at the desired site so that the vestibular depth is not altered to greater depth.

To conclude, double-layered closure using BFP with buccal advancement flap should be kept as a valuable option in mind in the management of OAC with few indications discussed above.

REFERENCES

1. Yilmaz T, Suslu AE, Gursel B. Treatment of oroantral fistula: Experience with 27 cases. *Am J Otolaryngol* 2003;24:221-3.
2. Visscher SH, van Minnen B, Bos RR. Closure of oroantral communications: A review of literature. *J Oral Maxillofac Surg* 2010;68:1384-91.
3. Lazow SK. Surgical management of the oroantral fistula: Flap procedures. *Oper Tech Otolaryngol Head Neck Surg* 1999;10:148-52.
4. Singh J, Prasad K, Lalitha RM, Ranganath K. Buccal pad of fat and its applications in oral and maxillofacial surgery: A review of published literature (February) 2004 to (July) 2009. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2010;110:698-705.
5. Adeyemo WL, Ogunlewe MO, Ladeinde AL, James O. Closure of oro-antral fistula with pedicled buccal fat pad: A case report and review of literature. *Afr J Oral Health* 2004;1:42-6.
6. Egyedi P. Utilization of the buccal fat pad for closure of oro-antral and/or oro-nasal communications. *J Maxillofac Surg* 1977;5:241-4.
7. N. Samman, L.K. Cheung and H. Tideman, The buccal fat pad in oral reconstruction. *Int J Oral Maxillofac Surg* 1993;22:2-6
8. Fujimura N, Nagura H, Enomoto S. Grafting of the buccal fat pad into palatal defects. *J Craniomaxillofac Surg* 1990;18:219-22.
9. Batra H, Jindal G, Kaur S. Evaluation of different treatment modalities for closure of oro-antral communications and formulation of a rational approach. *J Maxillofac Oral Surg* 2010;9:13-8.
10. Pandolfi PJ, Yavuzer R, Jackson IT. Three layer closure of an oroantralcutaneous defect. *Int J Oral Maxillofac Surg* 2000;29:24-6.

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