



CASE STUDY

CLOSURE OF ORO ANTRAL FISTULA BY COMPOSITE TECHNIQUE- A CASE REPORT

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ABSTRACT

Oro-antral communications may develop as a complication of dental extractions, but may also result from accidental or iatrogenic trauma, neoplasm or infection. The use of buccal fat pad as a graft for intraoral defects is an uncommonly reported procedure but, it has been frequently used for closure of oro-antral and oro-nasal communications. This paper demonstrates the use buccal pad of fat and buccal advancement flap for the closure of oro antral fistula.

Key words:

Buccal fat pad,
Buccal flap,
Oroantral fistula,
Oroantral communication.

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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. (Yilmaz *et al.*, 2003; Visscher *et al.*, 2010) OAC of less than 5 mm does not require any interventions and closes spontaneously. (Lazow, 1999) 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. (Yilmaz *et al.*, 2003; Visscher *et al.*, 2010; Lazow, 1999) 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. This paper reports a case of chronic oro-antral fistula which was treated successfully with the use of a pedicled BFP and Buccal advancement flap. A brief literature review is presented, and the advantages and possible complications of pedicled BFP are also highlighted.

Case Report

Diagnosis

A male patient of 27 years age reported to the department of oral and maxillofacial surgery with a past history of extracting

an upper left second molar about 3 months ago, with a subsequent oro-antral fistula formation. The patient also reported that an attempt had been made to repair the fistula few months later with a local flap, but without any successful results. On clinical examination the clinical examination revealed a fistula (0.6 cm × 0.5 cm) at the depth of buccal sulcus in relation to the edentulous space of the missing tooth with air-bubble around the orifice. There was mild discharge from the fistula. Patient's medical history was not conspicuous. A clinical diagnosis of chronic oro-antral fistula was made. The radiographs revealed a generalized thickening of left antral mucosa and a defect in the bony floor. A decision was then made to employ the use of pedicled BFP and Buccal Advancement flap for the repair under local anesthesia.

Operative Procedure

The patient was firstly placed on Amoxicillin (500 mg/ 8hrly) and Metronidazole (200mg/ 8hrly) three days before the surgery. Excision of the fistulous tract from the sinus to the oral cavity and freshening of the wound edges done after local anesthesia with 2% Lignocaine (with Adrenaline 1:80.000) was achieved. A trapezoidal buccal mucoperiosteal flap was raised and 1 cm vertical incision was made in the reflected periosteum posterior to the zygomatic buttress to allow exposure and advancement of the BFP (Figure 1) over the bony defect where it was sutured to the palatal mucosa. Later a buccal advancement flap was utilized to cover the same.

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Fig. 1. Pedicled buccal fat pad (BFP) being advanced to the surgical site after adequate mobilization



Fig. 3. Post operative after 3 months



Fig. 2. Double-layered closure of OAC using BFP and buccal advancement flap

The flap was sutured in place with simple interrupted 3/0 polygalactin 910 sutures (Figure 2). 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. Antibiotics (amoxicillin 500 mg with clavulanic acid 125 mg three times daily) decongestant and analgesics were prescribed for 3 days. The patient was followed-up for duration of 3 months (Figure 3) periodically at the regular intervals to evaluate for any postoperative complications like wound dehiscence, necrosis, infection, etc. Complete epithelialization 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. (Visscher *et al.*, 2010; Lazow, 1999; Singh *et al.*, 2004) 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. (Visscher *et al.*, 2010; Lazow, 1999; Singh *et al.*, 2004; Adeyemo *et al.*, 2004)

The possibility of harvesting under local anesthesia can be considered as an added advantage. (Visscher *et al.*, 2010; Lazow, 1999; Singh *et al.*, 2004) and this advantage was utilized in this study. Egyedi (Egyedi, 1977) recommended coverage of the exposed BFP with a skin graft; however, previous reports have confirmed that epithelialization of the flap does take place without split skin graft cover after 3–4 weeks of inset. (Singh *et al.*, 2004; Adeyemo *et al.*, 2004) Covering BFP with buccal flap in a combination technique is beneficial when BFP is stretched excessively or is perforated. (Samman *et al.*, 1993) 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 (Fujimura *et al.*, 1990) 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. (Fujimura *et al.*, 1990; Batra *et al.*, 2010) 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. (Fujimura *et al.*, 1990; Batra *et al.*, 2010; Pandolfi *et al.*, 2000) An alteration includes that 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.

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