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Reconstruction of Oro antral fistula with buccal fat pad: A case report

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Abstract

Oro antral communication is an unnatural communication between oral cavity and maxillary sinus. It is the most common complication during extraction of maxillary second premolars and molars with periapical infections. Management of smaller communications require immediate suturing, Persistent fistulas are treated by surgical method. various surgical modalities have been advocated in literature but buccal fat pad remains gold standard method in closure of fistula. Here we discuss a case of oroantral fistula closure with buccal fat pedicled flap.

Keywords: Oro antral communicatio, Oro antral fistula, Buccal fat pad

Introduction

Oroantral communication is an iatrogenic opening in the maxillofacial region. Epithelialisation of oroantral communication results in fistula formation. 90% of oroantral fistulas are iatrogenic and others common aetiology include trauma, infections, tumours and cancer.¹

Oroantral communication with more than 3mm of diameter remains patent and tend to form fistula. ² Surgical closure of oroantral fistula is recommended in these cases. Various procedures have been advocated for the treatment of oroantral fistula. Surgical procedures include buccal fat pad, palatal rotation flap, buccal pedicled fat pad graft, nasolabial flap, tongue flap and distant flap like temporalis muscle. The most commonly used is buccal pedicled fat pad with high success rate.

Buccal fat pad is made up of a central adipose mass with four extension (buccal, pterygoid, superficial and deep temporal.) It was first described by HEISTER IN 1732, which is a glandular in nature and termed it as "GLANDULA MOLARIS". BICHAT is credited for buccal fat pad true nature. In infants, it prevents in drawing of the cheeks during cheeks sucking. In adults the BFP enhances intermuscular motion. ³

Case Report

A 32 year old female patient reported to the department of oral and maxillofacial surgery with a chief complaint of regurgitation of oral fluids through nose,

On intraoral examination there is opening of 8mm communication in the right maxillary second molar region the panoramic radiograph revealed bony defect at the extraction site. Perforation confirms the communication between the oral cavity and maxillary sinus. Mouth mirror test showed positive, confirming the diagnosis of oroantral fistula. (fig.1.)

The treatment plan advocated is surgical procedure closure of oroantral fistula by using buccal fat pad graft. Preoperative antibiotic medication has been administered for 3 days prior to the procedure. Under local anaesthesia Surgical procedure done with excision of epithelium around the fistula first, then a crestal incision in the second molar region with buccal extension is given. (fig.2)

Sub periosteal dissection done to ensure better visibility to the fistula. The fistula diameter is approximately 8mm. A sub mucosal incision is given at a higher level in the second molar region, buccal fat pad is teased to the fistula site (fig.3) The fat is then sutured to palatal flap with 3-0 vicryl (fig.4) and the mucosal flap is placed over the buccal fat pad and sutured to the palatal flap with 3-0 silk suture. (fig.5) Coe pack is palced over the operated site for 15 days

(fig.6). After 15 days the sutures are removed and the patient is asked to rinse her mouth. The healing of wound was

complete with no regurgitation of fluid (fig.7)



Fig 1: Mouth Mirror



Fig 2: Incision Making



Fig.3: Buccal Fat Teased And Put In Position



Fig 4: Suturing of buccal fat to palatal mucosa



Fig 5: Suturing



Fig.6: Application of coepack



Fig 7: Post operative healing

Discussion

Oroantral communication is one of the most common problem resulting due to extraction of maxillary second premolars and maxillary first molars. The roots of these teeth extends into the sinus. Periapical lesions in the teeth results in destruction of bone and inadvertent use of force while extracting such teeth results in pushing of root stumps into the sinus or creating a communication between the oral cavity and maxillary sinus.⁴

Oroantral communication should be treated as soon as possible due to its complications such as nasal regurgitation, infections of the maxillary sinus and embarrassment to both patient and dentist. Initial suturing of the flap should be done if the oroantral communication is confirmed after extraction.⁵ The epithelialisation usually occurs when the perforation persists for atleast 48 to 72 hours, within few days the fistula gets organised and with the epithelialisation of the fistulous tract osteitis of the surrounding bony margins, presence of foreignbodies or development of maxillary sinusitis, spontaneous healing is hampered which may result in chronic fistula formation.⁶

Diagnosis of small defect can be made by the nose blowing test, the patient is asked to close his nostrils and blow gently down the nose with the mouth open, presence of oro antral fistula appears as a whistling sound, as air passes down the fistula into the oral cavity.it can also be seen as air bubbles blood or mucoid secretion around the orifice.⁷ The escape of air through the nostril can be tested by placing a cotton whisk near the orifice. A mouth mirror placed at oro antral fistula causes fogging of mirror.

Oroantral fistulas are known to be treated surgically. Among the various surgical techniques buccal fat pad provides a better treatment option due to its vicinity and vascularity. The

buccal fat pad has the tendency to turn into mucosa.

The buccal fat pad is divided in to three lobes anterior, intermediate, and posterior. The buccal fat pad is present within the masticatory space between two muscles namely masseter laterally and buccinator medially and the main body rests on the buccopharyngeal fascia, and this covers the buccinators muscle's external surface. Its anterior border goes beyond the anterior wall of the masseter muscle and posterior to the site where the parotid duct pierces the buccinators muscle, thus the buccal fat pad is covered externally by parotid duct, zygomaticus major, zygomaticus minor, and superficial fascia of the face.

The structures in buccal fat pad include the parotid duct, accessory parotid salivary glands, the facial artery, veins, the buccal artery, lymphatic channels and branches of facial and mandiblar nerve. ⁸

Blood supply to buccal fat pad is though anterior deep temporal, buccal, and posterior superior alveolar arteries and little supply from branches of facial artery.

The advantages of using buccal fat pad include low morbidity rate, conservation of vestibular sulcus depth, low incidence of failure and flap vascularisation. ⁹ The buccal fat pad in oral environment gets epithelised and gradually replaced by fibrous connective tissue within 30-40 days.¹⁰

Conclusion

Treatment of oroantral fistula by using buccal fat pad graft is a easy and complete method. Blood supply to the graft is adequate and is not affected by displacement from its site. The reported case had no further complications and the fistula is cured completely.

Conflicts of interest: None.

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