



RECONSTRUCTION OF ORAL MALIGNANT LESION DEFECT WITH PEDICLED BUCCAL FAT PAD- A CASE STUDY

Maxillofacial Surgery

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ABSTRACT

This study aims at evaluating the role of buccal pad of fat in the reconstruction of defects following excision of the small to medium oral malignant lesions. The buccal fat pad (BFP) is a special type of fat tissue, which is located anterior to the masseter muscle and deep to the buccinators muscles. Intra oral reconstruction with BFP is an ideal procedure during reconstructive head and neck surgery. It has a successful outcome in restoring both soft and hard tissues. BFP has safe and dependable means of reconstruction of intraoral defects following wide excision of benign/premalignant/malignant lesions because of its rich blood supply and location. Here we are presenting a case of 55 years old female with moderately differentiated squamous cell carcinoma of right side of posterior palate came to the department of oral surgery, Saraswati Dhanvantari Dental Hospital, Parbhani. This case was successfully managed by wide surgical excision of lesion and reconstruction with buccal fat pad. With this case report, we attempt to prove that the BFP act as an excellent intraoral reconstructive material for small to medium intraoral defects followed by excision of oral malignant lesions.

KEYWORDS

Buccal Fat Pad (BFP), Intra Oral Reconstruction, Oral Malignant Lesions

1. INTRODUCTION

Reconstruction of intraoral postsurgical defect is always challenging because of its anatomical complexity and special type of intraoral tissues [1]. Soft tissue coverage is an essential step for successful wound healing. Local flaps have much advantage over distant flaps like ease of procurement, lesser morbidity and functional impairment. The type and size of intraoral defect determines the flap/ techniques to be used [5]. The use of BFP serves as a source of reconstructive material for the closure of intraoral defects. It has gained popularity because it is easy to harvest, convenient, reliable and rich in vascular supply [1]. BFP is divided by the parotid duct and facial nerve into anterior and posterior portions possibly named by buccal, pterygoid, superficial temporal and deep temporal part [1]. The main body lies on the anterior border of the masseter muscle which extends deeply to lie on the posterior maxilla and forward along the buccal vestibule. The buccal extension is more appropriate for grafting [3, 4]. As per studies, the average weight of each fat pad is 9.3 g, and its average volume is 9.6 ml. This volume can be accommodative to repair a defect measuring of 4 x 4 x 3 cm in Maxilla & 7 x 5 x 2 cm. in mandible [2].

Egyedi in 1977 used BFP as pedicle graft for oral reconstruction [7]. In 1986, Tideman et al showed that the pedicled buccal fat pad flap is epithelialized within 3–4 weeks and therefore, cover with a skin graft is not required. In 2005, Amin showed how effectively a buccal fat pad can be utilized in post partial maxillectomy defects for neoplastic diseases [6]. Here we are presenting a case of 55 years old female with moderately differentiated squamous cell carcinoma of right side posterior palate which was successfully managed by wide local excision of lesion and reconstruction with BFP.

Case Study

A 55 years old female patient came to oral surgery department with a complaint of mild painful reddish ulcerative wound over right posterior palatal region since last 2 month. The history of present illness revealed that the ulcer was initially small in size and had been slowly growing over the period of time. Intraoral examination revealed a leathery consistency, ulcerative and reddish growth present over the right posterior palatal region which was approximately 3 cm × 2.5 cm of size its greatest dimensions [Figure 1].



Figure1: A Reddish Ulcerative Growth on Right Posterior Palatal Region

The lesion was mildly tender and well defined with raised margins, with a past history of dental extraction 3 month before. Systemic examination was unremarkable. The patient doesn't have any habit like smoking or chewing tobacco.

A provisional diagnosis was non healing ulcer suggestive of squamous cell carcinoma of palate. For confirmatory diagnosis a biopsy was performed and sent for histopathological examination. The histopathological examination revealed proliferative stratified squamous epithelium which was invaded the surrounding connective tissue stroma. Theses invaded epithelial cell showed cellular and nuclear pleomorphism, nuclear hyperchromatism, altered N: C ratio and few mitotic figures. It also presents few chronic inflammatory cells and extravagated RBCs. Based on these findings a final diagnosis of moderately differentiated squamous cell carcinoma was confirmed. After histopathological evaluation, patient undergone CT contrast to check metastasis. CT contrast did not reveal any metastatic changes or cervical lymphadenopathy.



Figure2: BFP Spreading Over the Defect

Surgical procedure was performed under local anesthesia after taking informed written consent from patient. BFP harvested by giving incision at buccal vestibule near maxillary molar area. Blunt dissection was performed through the buccinators muscle and surrounding fascia allowed the fat pad to herniate into the mouth [Figure 2]. Special care was taken not to disrupt the delicate structures and vascular plexus. Necessary amount of fat pad was then gently grasped by using a tissue holding forceps and then mobilized, brought and covered over the defect area. The fat was sutured ideally and gently to the margins of the defect. After that mucosal tissue suturing was done by 3-0 vicryl [Figure 3]



Figure3: Entire Surgical Defect Reconstructed With BFP.

Post operatively cotton gauze dressing was placed at operated area and instructed to avoid brushing and trauma to the operated area. Antibiotics and analgesics were prescribed 3 times daily for 5 days. The patient was assessed postoperatively on 7th and 15th day. Excised specimen sent for histopathological evaluation. Both excisional and incisional biopsy reports correlated with each other which were showing same histopathological diagnosis.



Figure4: 3rd month follow up

During follow up, epithelialization of buccal fat pad was started at the end of the first week and it was completely epithelialized at the end of the first month. Complete healing was observed after 6 weeks. After 3 months of the surgery, complete healing of the wound and presenting complains were assessed. Patient satisfaction was also evaluated with special regards to their adequate mouth opening, satisfactory speech, masticatory function and acceptable facial aesthetic. After 3 month follow up of the patient showed excellent healing and complete healing of operated area. No signs of recurrence were seen [Figure4].

DISCUSSION

The buccal fat pad was mentioned for the first time by Heister in 1732 and after that it was better described by Bichat in 1802. A pedicled BFP flap was first described by Egyedi in 1977 for the closure of oro antral communications after oncological resections [1,2]. The BFP is an encapsulated, mass of specialized fatty tissue which acts as gliding pads when masticatory and mimetic muscles contract, and cushions important structures from forces generated by muscle contraction [4, 5]. The possible functions of this BFP are preventing negative pressure in newborns while suckling, separating the masticator muscles from one another and from the adjacent bone, enhancing the intramuscular motion, which is why this specialized type of fat, is termed syssacosis. It also provides protection to the neurovascular bundles. Its rich blood supply explains the high take up rate and quick epithelisation of the graft [8].

For reconstruction purpose nasolabial flap, buccal flap, skin graft or other artificial material can also be used. But in small to medium sized defect only BFP is sufficient with 6 months follow up [3]. Hao first time used buccal fat pad flaps for reconstruction of medium sized post-surgical oral defects for malignant lesions [1]. The important advantages of using the BFP includes lower incidences of infection, resorption after reconstruction and it can be used in association with other flaps as a second layer [3]. Recently the buccal fat pad has achieved a great importance in the field of aesthetic facial surgery [1]. On the other hand the main disadvantage is contraction of BFP. This may results in limitation in mouth opening [3].

In our case the maximum dimensions of the defect reconstructed was 4*6*2 cm. In the presented case proper healing was seen, epithelisation started after 1 week which was completed by the end of 4 to 5 week with minimal fibrosis. Good functional outcome was seen, as patient did not complain of difficulty in opening mouth or discomfort while chewing food post operatively. As per studies, three months later, most of the buccal fat pad replaced by a thin whitish streak covered by normal mucosa, with very minimal fibrosis [6]. This result was found to be consistent in this case.

Size limitations of BFP must be known in order to provide successful outcome. Due to their close anatomical location, it can be applied in areas ranging from the angle of mouth to the retro molar trigon and palate [7]. The success rate of BFP in the reconstruction of oral defects is quite high. However, it is important to ensure that correct incision, careful manipulation of the flap, exact knowledge of its size limitations, complete coverage of the surgical defect, tensionless suture and strict postoperative instructions to patients for proper epithelisation and reduced minimum postoperative complications [1].

CONCLUSION

The BFP is a simple, convenient and reliable reconstructive method for the reconstruction of intraoral defects. It is an excellent way to achieve the desired outcome. In conclusion we consider the BFP as a suitable method for the closure of small to medium sized intra oral malignant defects.

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