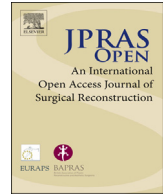




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Case Report

Intra oral reconstruction with buccal fat pad: Recent applications of autologous tissue transplantation as a local flap

Khaleque Hasibul, Fumi Nakai, Yasuhiro Nakai, Ayako Jinzenji, Akinori Iwasaki, Takaaki Ogawa, Yumiko Ohbayashi, Minoru Miyake*

Department of Oral and Maxillofacial Surgery, Faculty of Medicine, Kagawa University, 1750-1 Ikenobe, Miki-cho, Kita-gun, Kagawa 761-0793, Japan

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ABSTRACT

Intra oral reconstruction with buccal fat pad (BFP) is an identical procedure during reconstructive head and neck surgery. It has a successful outcome in restoring both soft and hard tissues for more than 3 decades. The purpose of this study was to represent a series of cases and review of the recent diversified application of BFP in intra-oral region during reconstruction. The Authors are presenting 12 cases (Male – 8/66.7%; Female – 4/33.33%, mean age – 66.33 years) of BFP reconstruction from small to medium sized defect in oral cavity. The diameter of the BFP graft was between 10 mm and 55 mm. Only one case was restored in mandible while others were in maxillary region. All patients were recovered within a short time. The yellow fat tissues were turned into reddish color within 1 week. Patient recovered with almost normal mucosa before 4th week. BFP reconstruction had considered as a quick and easy to restore flap during most intra-oral reconstruction. Rapid healing without any complications added additional advantage. High blood supply and easy access make it as a first consideration. We also evaluated the merits, demerits, distance between host and donor site, size of defect and site of reconstruction.

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*Corresponding author. Department of Oral and Maxillofacial Surgery, School of Medicine, Kagawa University, 1750-1 Ikenobe, Miki-cho, Kita-gun, Kagawa 761-0793, Japan. Fax: +81 87 891 2228.

E-mail address: dentmm@med.kagawa-u.ac.jp (M. Miyake).

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Introduction

Adjusting or mimicking the actual anatomy with proper function is often obliterated after surgery. In oral cavity reconstruction is often required due to resection for cystic lesion or malignancy. Reconstruction with buccal fat pad (BFP) can be considered for its availability and restoring capacity. There are multiple reconstructive materials or different flaps to maintain speech, facial expression, articulation and deglutition. Immediate repair during malignant lesion resection was not appreciated due to monitoring of recurrence. However, there are no relevance between recurrence and reconstruction yet.¹ BFP is durable, easy to harvest and can be considered in settings where access to free flaps are limited and in cases where previous flaps have failed. Intravenous (IV) bisphosphonates (BPs) are frequently used as an antiresorptive medication during bone metastasis from breast, prostate and lung cancers. The osteonecrosis caused by this BPs usually identified by the appearance of exposed bone in oral cavity over 8 weeks. This condition is known as medication related osteonecrosis of the jaw (MRONJ).² In the recent days, BFP reconstruction is increasing in MRONJ cases also.

The buccal fat pad (Bichat's fat pad) has a complex relationship to the facial structures. It has 4 parts divided by the parotid duct and facial nerve and vein 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 and extends deeply to lie on the posterior maxilla and forward along the buccal vestibule (Figure 1). The parotid duct and zygomatic and buccal branches of the facial nerve cross the lateral surface of the fat pad. The buccal extension, which accounts for about half the total weight, lies superficially within the cheek and is largely responsible for the contour of the cheek. The pterygoid and temporal extensions are smaller and situated more deeply. The buccal extension is more appropriate for grafting. Moreover, the buccal extension and main body together constitutes 55%–70% of total weight. The parotid duct courses with the buccal branches of the facial nerve anteriorly (superficial), and on the lateral surface of the BFP, it penetrates the buccinators muscles, entering the oral cavity opposite the second molar. The facial vessels are in the same plane and mark the anterior extent of the BFP. The fat pad varies through the human's lifetime though it's average volume is 9.6 mL with a range of 8.33 mL–11.9 mL. Although, the volume of BFP can change throughout the life.³ It is attached by 6 ligaments to the maxilla, posterior zygoma, inner and outer rims of the infraorbital fissure, temporalis tendon, and buccinator membrane.^{4–7} It has numerous presumed functions including suckling, contributing to mastication, protection and cushioning of neurovascular bundles, separating the muscles of mastication from one another, and aesthetics, amongst others. In the infant, the buccal fat pad prevents the in drawing of the cheeks during sucking, while it enhances intermuscular motion.

The first description was made by Heister in 1732 and later in 1802 by a Frenchman Bichat.⁸ Scammon and Goughran described the detail anatomy of BFP first.⁹ Then over two centuries the application of BFP was not highlighted. Later in 1977 Egyedi was the first to report the successful clinical use of the buccal fat pad.⁸ They used BFP as a pedicle graft, lined with a split thickness skin graft, for the closure of persistent oroantral and oronasal defects in four patients after resection of tumors.¹⁰ Nowadays, BFP has showed potential outcome during reconstruction after MRONJ and oral sub-mucous fibrosis (OSF) treatment also.

Case series

In this report 12 patients (8-Male, 4-Female) were studied after BFP reconstruction. Seven cases underwent carcinoma resection (Figures 2 and 3), 2 oroantral closures, 2 MRONJ and a case of mucosal contracture after tumor resection. The graft positions, condition of defect area, recurrence of oroantral opening, wound contracture, presence or absence of infection and pain, foul smelling were considered. Healing was assessed by the graft integrity, necrosis and graft epithelialization.

All the cases (Table 1) were immediate reconstruction except a case that was reconstructed after 3 years of resection. The extent and degree of involvement of lesion was determined first. The body of the BFP and the buccal extension were gently mobilized by blunt dissection. Pressure on the cheek extra orally helped to express the fat into the mouth. After the pad had been dissected free from the surrounding tissues, it was softly pulled out from its bed, adjusted into its new position, and sutured

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