

Buccal Fat Pad**Muralee Mohan, Tripti Shetty, Prabhakar Gupta**

A.B. Shetty Memorial Institute of Dental Sciences, Mangalore, Karnataka, India.

Address for Correspondence:

Dr. Prabhakar Gupta, Post graduate student, A.B. Shetty Memorial Institute of Dental Sciences, Mangalore, Karnataka, India. Email: docprabhakar86@gmail.com

ABSTRACT:

The buccal fat pad (BFP) is specialized fat tissue located anterior to the masseter muscle and deep to the buccinator muscle. Having a central body and four processes, it provides separation allowing gliding motion between the muscles, protects the neurovascular bundles from injuries, and maintains facial convexity. Because of its several advantageous functions, the use of the buccal fat pad during oral and maxillofacial procedures is promoted for the reconstruction of defects secondary to tumor resection, and those defects resulting from oroantral fistula caused by dento-alveolar surgery or trauma or any other minor defects missing in its proximity in the oral cavity.

Keywords: Buccal Fat Pad (BFP), Muscles of Mastication (MOM), Oroantral Communication (OAC).

INTRODUCTION:

The buccal fat pad (BFP) as an anatomic element was first mentioned by Heister¹ in 1732 and was described by Bichat² in 1802. The use of the BFP to cover intraoral defects was first described by Egyedi in 1977.³ Egyedi was also the first to report use of buccal fat pad in oral reconstruction for the closure of oroantral and oronasal communications and Tiedman et al showed there was no need to cover BFP by a skin graft when used for defects of oral cavity. Scammon was the first to describe the anatomy of BFP.³

ANATOMICAL CONSIDERATION:

The BFP is a lobulated mass described as consisting of a central body and 4 extensions: buccal, pterygoid, pterygo-palatine and temporal. The body is

centrally positioned and is located above the parotid duct and extends along the anterior border of masseter muscle. It courses medially to rest on the periosteum of the posterior maxilla and overlies the uppermost fibers of buccinator muscle. Posteriorly it travels through the pterygoid maxillary fissure in contact with the maxillary artery.⁴ (Figure 1)

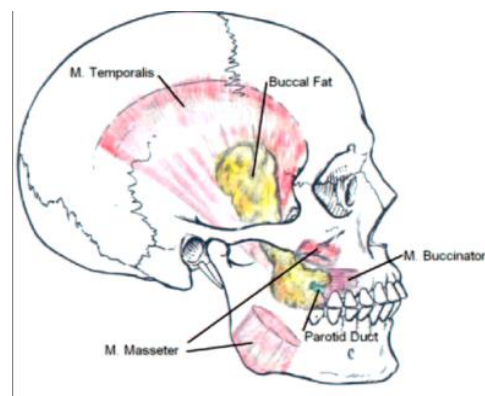


Figure 1: Relations of Buccal Fat Pad

It is in the masticatory space between the masseter muscle and buccinator muscle, so it can be easily accessed in the mouth by incising the buccinator muscle and is good for engraftment with sufficient blood supply because it receives blood from superficial temporal artery, internal maxillary artery, facial artery, and maxillary artery.⁵(Figure 2) Owing to its rich blood supply, it can be considered as a pedicle graft with an axial pattern.⁴

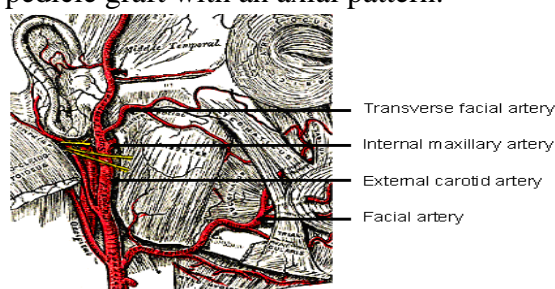


Figure 2: Arterial Supply

The buccal fat pad is composed of several parts, although exactly how many parts seems to be a point of disagreement and no single consistent nomenclature of these parts has been observed. It was described as being divided into three lobes, the anterior, intermediate, and posterior, “according to the structure of the lobar envelopes, the formation of ligaments, and the source of the nutritional vessels”. Also, there are four extensions from the body of the buccal fat pad: sublevator, melolabial, buccal and the pterygoid. The nomenclature of these extensions are derived from their location and proximal muscles.

Average weight - 9.3g (8-11.5g)
Average volume - 9.6ml (8.3-11.9ml)
When properly dissected and mobilised, the BFP provides a 6x3x3 cm pedicled graft
Buccal extension -largest 30-40%
Body -25-30%
Pterygoid and temporal extension inconsistent.

The anterior lobe of the buccal fat surrounds the parotid duct, which conveys saliva from the parotid gland to the mouth. It is a triangular mass with one vertex at the buccinators, one at the levator labii superioris alaeque nasi, and one at the orbicularis oris. The intermediate lobe lies between the anterior and posterior lobes over the maxilla. The intermediate lobe seems to lose a significant amount of volume between childhood and adulthood. The posterior lobe of the buccal fat pad runs from the infraorbital fissure and temporal muscle to the upper rim of the mandible and back to the mandibular ramus.⁶

FUNCTION

- 1) The buccal fat pad’s primary function in relation to chewing and suckling, especially in infants. This is directly involved in chewing and suckling, from infancy to adulthood.
- 2) Another proposed function is as gliding pads that facilitate the action of the muscles of mastication.
- 3) The buccal fat pad may also function as a cushion to protect sensitive facial muscles from injury due to muscle action or exterior force. (Figure 3)



Figure 3: Functions of Buccal Fat Pad

CLINICAL USE

BFP can be rotated to cover a variety of defect.

- 1) The BFP is used to cover the raw area left after the resection of the fibrous bands

in the treatment of Oral sub mucous fibrosis.

2) It is used in the closure of Oro-antral fistula.

3) The Buccal fat pad is commonly used in facial recontouring. Several authors discuss the importance of the buccal fat pad in attaining good results from a facelift.⁷

4) Buccal flaps (not always including the buccal fat pad) are used in reconstruction of the periorbital area after injury.

5) They are also used to repair congenital defects of the oral cavity or for repair of congenital cleft palate.⁸

6) Removal of the buccal fat pad is also sometimes used to reduce cheek prominence, although this procedure may carry with it a significant risk of damage to the buccal branch of the facial nerve and the parotid ducts.⁸

SURGICAL APPROACH TO HARVEST BFP:

1st approach- An incision through the mucosa on the buccal aspect of the vestibule in the molar region.

2nd Approach- A vertical mucosal incision slightly lateral to the anterior margin of the ascending ramus.

3rd Approach - Elevate mucoperiosteal flap in the molar region on the lateral aspect of the maxillary alveolar process and incision of the periosteum at the level of buccal sulcus suggesting a high success rate of BFP in the closure of Oroantral Communication (OAC).⁴

COMPLICATIONS:

To date, reported complications with the use of the BFP flap are hematoma, partial necrosis, excessive scarring, infection or facial nerve injury. Size limitations of BFP must be known in order to provide

successful outcome. Difficult handling of the graft once harvested. Rapidis et al have stated that in maxillary defects measuring more than 4x4x3cm, the possibility of partial dehiscence of the flap is high due to the impaired vascularity of the stretched ends of the flap. In buccal or retromandibular defects up to 6x5x3 cm, reconstruction is accomplished due to the underlying rich vascular bed. Baumann and Ewers have stated that it is very important to preserve the thin capsule of the BFP in order not to damage the small blood vessels. The use of the BFP in patients with local radiotherapy, malar hypoplasia, thin cheeks or Down's syndrome is contraindicated⁹. Its sole disadvantage is that it can only be used once.⁸

REFERENCES

1. Bichat F. Anatomic general appliqué a la physiologic eta la medicine paries, france, Grossen, Gabon etcie. 1802
2. Egyedi P. Utilization of buccal fat pad for closure of oroantral and/or oronasal communications. J Maxillofacial Surg 1977;5:241-4.
3. Shrivastava G, Padhiary S, Pathak H, Panda S, Lenka S. Buccal Fat Pad to Correct Intraoral Defects. International Journal of Scientific and Research Publications 2013;3(2).
4. Alkan A, Dolanmaz D, Uzun E, Erdem E. The reconstruction of oral defects with buccal fat pad. Swiss Med Wkly 2003;133:465-70.
5. Zhang YP, Qi KM, Wang JQ, Liu ZF. "Anatomical structure of the buccal fat pad and its clinical adaptations". Plastic and reconstructive surgery 2002;109(7):2509-18.
6. Rohrich, Pessa JE. The fat compartments of the face: anatomy and clinical

implications for cosmetic surgery. *Plastic and reconstructive surgery* 119(7): 2219–27.

7. Holton LH, Rodriguez ED, Silverman RP, Singh N, Tufaro AP, Grant MP. The buccal fat pad flap for periorbital reconstruction: a cadaver dissection and report of two cases. *Plastic and reconstructive surgery* 2004;114(6):1529–33.

8. Hwang Cho HJ, Battuvshin D, Chung, IH, Hwang SH. Interrelated buccal fat pad with facial buccal branches and parotid duct. *The Journal of craniofacial surgery* 2005;16(4):658–60.

9. Archibald S, Jackson S, Thoma A. Paranasal sinus and midfacial reconstruction. *Clin Plast Surg* 2005;32:309-25.

How to cite this article: Mohan M, Shetty T, Gupta P. Buccal Fat Pad. *Arch of Dent and Med Res* 2015;1(3):70-73.