Case Series

BUCCAL FAT PAD FLAP IN RECONSTRUCTION OF ORAL CAVITY DEFECTS: A CASE SERIES OF FIVE PATIENTS

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ABSTRACT

We present a case series of five patients who were operated for various oral lesions in Rehman Medical Institute over a period of six months. In these cases resulting defects were repaired by using pedicaled buccal fat pad flap. In this paper we discuss indication, complication and technique involved in raising this flap. All four flaps survived, however one flap had to be removed due to continuous bleeding and one flap developed marginal necrosis. In conclusion buccal fat pad is an excellent choice for reconstruction of small to medium size defects. It should be manipulated gently and haemostasis should be achieved meticulously during this surgery. It should not be sutured under tension.

INTRODUCTION

Buccal fat pad is an encapsulated fatty mass present in the buccal space of the cheek. Its use as a flap was first described by Egyedi in 1977, who presented a case series of four patients in which he used this flap lined by a split thickness skin graft to close oro-nasal and oro-antral communication[1]. Tideman in 1986, however, used this flap without lining it with split thickness skin graft and showed successfully that it was covered with epithelial lining with in two to three weeks[2]. Since then buccal fat flap has been established as a viable option for closure of small to medium size defects of the oral cavity. More recently its role in facial aesthetic surgery has also been emphasized[3,4].

A case series of five patients is presented, in which this flap was used successfully to close various oral cavity defects.

Case 1:

A thirty five years old lady presented with a mass in the left posterior hard palate. Previous biopsy had shown that it was Pleomorphic adenoma of a minor salivary gland origin. The mass was excised under general anaesthesia. Underlying bone was shaved with round Christmas tree bur. Resulting defect was 4 x 4 cm wide. A buccal fat pad flap was raised through vestibular incision. A tunnel was made underneath the alveolar mucosa, posterior to the third molar tooth for the pedicle of the flap. Flap was sutured over the area, with 3/0 vicryl. The most medial and the most anterior part of the flap was sutured under stretch, as it was difficult for flap to reach that part of the defect. Postoperatively patient was put on NG feeding for two days. Patient was reviewed regularly at two week interval. The areas of the defect under stretch developed ischaemic necrosis. That part of the flap was removed, leaving it to heal by secondary intention. The whole area took approximately two months to fully heal.

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Case 2:

A fifty five years old lady presented with a large Giant cell lesion of the right maxilla. She was informed that she will need posterior partial maxillectomy, followed by either, a reconstruction with Temporalis pedicled flap or an obturator. She was not happy with either choice, hence it was decided to attempt reconstructing the area with two layered flap. After posterior maxillectomy, a wide buccal fat pad was raised and the defect was closed using 3/0 vicryl. A second layer closure was performed over it with buccal mucosal and palatal flap. A cover plate was used for ten days to protect the area. Patient was reviewed regularly for two months. The area healed successfully, without any oro-antral communication.

Case 3:

A 65 years old man presented with large Verrucous carcinoma of the left buccal mucosa. The patient had a long history of hypertension and had suffered myocardial infarction two years ago. He was using Clopedigrol and Asprin. After taking an opinion from Cardiologist and in view of his cardiac history, his antiplatlet agents were not stopped. The lesion was excised and area repaired with buccal fat pad flap. The patient was reviewed the next morning and discharged. The patient reported back after three days with bleeding from the operative site and haematoma in the buccal space. Patient was brought back to operating theatre, bleeding stopped using bipolar diathermy and flap removed. Area was allowed to heal by secondary intention.

Case 4:

A twelve years old child presented with a large papillomatous lesion in the right buccal sulcus, extending from right canine region to the right retromandibular region. The area was excised under general anaesthesia with monopolar diathermy. The posterior two third of the surgical defect was reconstructed by mobilizing buccal fat pad flap, using the standard technique.

Case 5:

A fourteen year old child presented with 3cm^2 venous heamangioma over the left buccal mucosa. The area was excised with a sleeve of normal tissue around it. The area was partially covered with buccal fat pad flap, using standard technique.

RESULTS

Case No. 1 developed ischaemic necrosis at the medial edge, as mentioned above in the text.

In Case No. 3 flap had to be removed due to continuous bleeding, as mentioned above in the text.

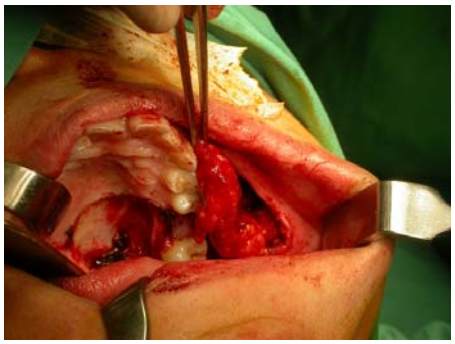
There was no incidence of any Facial nerve weakness or injury to the parotid duct.

In cases 2, 4 and 5, excellent results were achieved as desired.

DISCUSSION

Anatomically buccal fat pad is a fatty mass in the buccal space of the cheek. It comprises three lobes: anterior, intermediate and posterior with four extensions i.e. buccal, pterygoid, pterygopalatine and temporal (superficial and profound). It is fixated by ligaments to the maxilla, posterior zygomatic bone, inner and outer rim of the orbital fissure, temporalis tendon and buccinators membrane[5]. Its mean volume is reported at 10ml, mean thickness 6mm^3 and approximate weight 9.3g[4]. It derives its blood supply from the buccal and deep temporal branches of the Maxillary artery, transverse facial branches of the superficial temporal artery and multiple small branches of the facial artery[2]. It is intimately associated with muscles of mastication, facial nerve and parotid duct. Its intermediate lobe is well developed in infancy losing its volume in adulthood, which has lead some to believe that it helps infants in chewing and sucking.

Case 1: Pre-operative



Case 1: Per-operative

Case 1: Post-operative

Its function in adults is described as facilitating the movement of masticatory muscles by providing it with smooth gliding surface and that it acts as a protective cushion for the facial muscles of expression against action of masticatory muscles and extrinsic force[5].

Over the last two decades buccal fat pad flap has been well established as a useful option in reconstructing small to medium size defects of the oral cavity. It can be approached either by the gingival incision or a vestibular incision. The fat pad itself is enclosed with in a thin capsule, which needs to be incised before mobilizing the flap. The flap can be mobilized anterior to posterior or from posterior to anterior, depending upon the location of the defect. It is absolutely essential to use diathermy or small ligatures to stop bleeding as a failure to do so leads to formation of buccal haematoma and could compromise the viability of the flap. It is also important to be meticulous in dissecting out the flap, protecting the small branches of the facial nerve and parotid duct. There should remain a reasonable size pedicle attached to the flap to provide it with the crucial blood supply in the first week of its life. Flap should be sutured gently to the borders of the defects and ideally there should not be any stretch with in the tissue. A cover plate for the flap is ideal and provides it with additional protection. In absence of cover plate, naso-gastric feed may be commenced for first two to four days, though patient may be allowed clear fluids.

SUMMARY

1. Buccal fat pad is well established as a viable option for reconstructing small to medium size oral defects.
2. It can be easily accessed and mobilized.
3. Tissue should be handled with extra care, as this flap is composed of fatty tissue which can be easily damaged and separated from the main body of the flap.
4. It is important to achieve an absolute haemostasis, as it leads to development of the hematoma.
5. Overstretching the tissue can lead to fragmentation of the flap and in the long term can lead to ischaemic necrosis at the edges.

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