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Buccal Fat Pad Flap for Reconstruction of Oral and Maxillofacial Defect – A Case Report

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Abstract

Reconstruction of the maxillofacial region is being carried out since time immemorial. With the advancement of modern surgery and technicalities the predictability of reconstruction of defects have improved drastically. One of such versatile flap amongst the various available options used to reconstruct the oral & maxillofacial defects is the buccal pad fat flap. It is locally available, highly vascular, reliable, and easy to harvest with predictable outcomes. We present herewith a case report of 37 years old male in whom surgical excision with safe margins of Leukoplakia involving buccal mucosa was done and successfully reconstructed with buccal fad pad flap.

Keywords: Buccal pad fat, reconstruction, Leukoplakia

Introduction

The oral mucosa subjected to various carcinogens shows dysplastic changes depending on the staging. They have higher propensity to convert into oral squamous cell carcinoma hence classified as oral potentially malignant disorders. Leukoplakia is categorised as a potentially malignant disorder with a rate of malignant transformation ranging from 0.13% to 34%[1]. According to a systematic review published in the year 2003 estimated prevalence of Leukoplakia is 1.49% [1]. One of the treatment options is surgical excision, which is usually carried out, so that tissue for histopathology is also sent. Hence in such cases early management is required to prevent the progression of the disease and lessen the morbidity

Healing of soft tissue is completed by primary and/or secondary intention. The secondary intention healing takes longer time as repair takes place by replacement of loss tissue with formation of granulation tissue. Hence for larger defects, soft tissue coverage speeds up wound healing process. Surgical excision of pathological tissue from the head and neck region leads to a defect which is

sometimes difficult to close primarily. Depending on the size of the defect, various reconstruction grafts and flaps can be used such as skin graft, free or regional flap. Buccal fad pad flap is a regional flap, which is locally available for intraoral defects and there is much less donor site morbidity.

The Buccal fat pad is an encapsulated mass of specialized fatty tissue. Buccal fat pad (BPF) appears at 3 months in utero and grows until birth. The average volume is 9.6 mL (range, 8.3–11.9 mL), average weight is 9.3 g (range, 8–11.5 g). The volume changes with aging. It is an axial flap, based on the subcapsular vascularplexus formed by maxillary artery (buccal and temporal branches), superficial temporal artery, and transverse facial artery. On gross examination it consists of lobes, covered with a thin capsule and is a highly mobile structure. It has a main body and four extensions: temporal, buccal, pterygoid, and pterygopalatine. The main body is surrounded by the buccinator muscle, masseter muscle, and zygomatic arch. The parotid duct pierces the buccinator at the anterior border of the buccal fat pad [2]

Due to the easy availability, harvesting technique, and rich blood supply, small to medium size maxillofacial defects can be easily reconstructed.In 1977 Egyedi et al, was first to report use of BFP for intra oral defects [3]. Hao et al, used pedicled BFP flaps for malignantlesions [4]. According to Johan et al, there are three approaches from where the graft can be harvested are (i) below the opening of parotid duct(Matarasso's method) (ii) behind the opening of parotid duct (iii) deep to superior gingivobucal sulcus [5]. However during harvesting the flap, the capsule covering the buccal fat pad should be intact to maintain its viability.

Due to its close proximity to the small to medium sized intra-oral defects it is an easily accessible graftwith no or less donor site morbidity and has predictable outcomes.

Case Report

A 37 years old male was referred to the department of Oral & Maxilloficial Surgery, Lady Hardinge Medical College & Associated Hospitals, New Delhi, with the chief complaint of burning sensation on bilateral inner aspect of cheek on intake of spicy food for the last 8 months. He gave a positive history of both smoking and smokeless Tobacco use since 7 years. No significant medical history was recorded. On clinical examination, he had a 2.5x2.5cm non scrappablewhite lesion of the left buccal mucosa adjacent to the retromolar region (figure 1). Maximal interincisal opening was 3.5 cm with complete dentition and fully impacted third molar in all four quadrants. The teeth present was grossly stained with calculus. A provisional diagnosis of oral leukoplakia was made. The lesion was planned for wide local excision and reconstruction with buccal fad pad flap.

In total aseptic condition the lesion was excised with wide base and safe margins of approximately 1 cm. The defect so created was approximately of 3.5x3.5cm dimension in the posterior aspect of the oral cavity (figure 2). On the base of the defect buccinator muscle was identified and blunt dissection was carried out to tease out the fat with the aid of a non-tooth forceps. Appropriate precautions were carried out to preserve the capsule of the fat. The fat was then harvested adequately for a tension free closure at the defect site (figure 3) Postoperatively the fat epithelisation uneventfully and maximal interincisal opening at the end of 1 month was 3.5 cm and partial epithelisation of the graft was seen (figure 4). Complete uptake of the graft was seen at the end of 3 months (figure 5)

Conclusion

The versatility and predictably of the buccal fat pad flap is well documented in literature. Similarly in our case reconstruction of wide local excision of leukplakia using

the buccal fad pad flap gave satisfactory result. Hence, maxillofacial surgeons should always consider it as a reconstruction option for small to medium sized oral and maxillofacial defects.

Patient consent and ethical clearance: Written informed consent was taken and there were no conflict of interests.

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Legend Figure

Figure 1: Non scappable lesion on left side

Figure 2: Excision of the lesion with healthy margin

Figure 3: Reconstruction with BFP

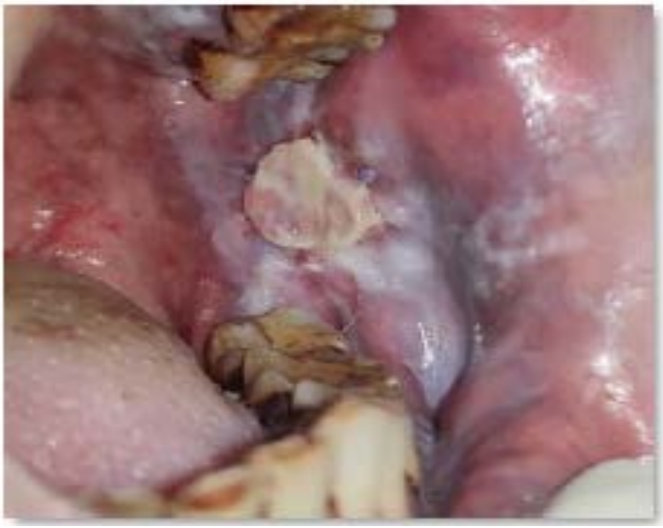

Figure 4: 1 month post-operative

Figure 5: 3 months post-operative