Buccal Fat Pad as Pedicled Graft in a Case of Oral Verrucous Carcinoma

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ABSTRACT

Verrucous carcinoma is a variant of squamous cell carcinoma. It usually affects the oral cavity buccal mucosa being mostly involved. Clinically it exhibits a characteristic exophytic finger like projections or a cauliflower like appearance. It is more common in males with a history of tobacco consumption. In this paper we discuss a case of 45 year old male with verrucous carcinoma of left buccal mucosa which was successfully managed conservatively with local excision and reconstruction with a pedicle buccal fat pad graft.

KEYWORDS: Buccal Pad Fat, Oral Verrucous Carcinoma, Ackermann’s tumor

INTRODUCTION

Ackermann was the first to describe that Oral Verrucous Carcinoma (OVC) is a rare variant of oral Squamous Cell Carcinoma involving oral mucous membrane and also known as Verrucous carcinoma of Ackermann” or “Ackermann’s tumor”. It is most commonly seen in oral cavity apart from other sites including larynx, pyriform sinus, esophagus, nasal cavity, paranasal sinuses. OVC is slow growing with the ability to become locally aggressive if not treated appropriately, however with rare distant metastasis. Local excision is generally the choice of treatment if no nodes are involved. Various flaps have been used to reconstruct the surgical defects following excision of the lesion. Undoubtedly, the buccal fat pad remains the most versatile because of its excellent blood supply and minimal donor site morbidity. Here we present a case of verrucous carcinoma of buccal mucosa surgically excised and defect closed with a buccal pad of fat, with excellent postoperative results.

CASE REPORT

A 45-year-old male patient reported to our centre with a complaint of a painless growth on left buccal mucosa since one year. Intraoral examination revealed a sessile, exophytic, whitish cauliflower-like growth present over the left buccal mucosa approximately 3cm × 2cm of size its greatest dimensions. The growth was nontender, nonfriable and well defined with raised margins, with no history of trauma, trismus, oral bleeding, dysphagia or pain (Figure 1). There was no evidence of cervical lymphadenopathy. The patient gives a history of chewing tobacco in form of betel quid, 4-5 times a day, since 5 years. Incisional biopsy was performed which yielded a diagnosis of oral Verrucous carcinoma following which surgical excision of the lesion was planned as no metastatic nodes were evident on the CT scan hence stage was T2NoMx and therefore no neck dissection was undertaken. The entire lesion was excised in toto under local anaesthesia, (Figure 2) and the surgical defect was reconstructed with pedicled buccal fat pad (Figure 3) which was harvested and sutured to the surrounding mucosa with excellent post-operative healing. The postoperative histopathological examination of the specimen revealed verrucous carcinoma showing swollen and elongated rete pegs extending into deeper tissues with no sign of cytological atypia. A three-month follow-up of the patient showed excellent healing and complete epithelization of the grafted area. (Figure 4A, 4B & 4C)

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The BFP was first described by Heister (1732), who believed this structure to be glandular in nature and termed it the “glandula molaris.”

The BFP is a simple lobulated mass described as consisting of a central body and 4 extensions: buccal, pterygoid, pterygopalatine, and temporal. The principle body of the BFP lies deeply along the posterior maxilla and upper fibers of the buccinator, covered with a thin capsule. The buccal extension lies superficially within the cheek and is partially responsible for cheek contour. The
buccal extension and main body together constitute 55%-70% of total weight. The pterygopalatine extension of fat tissue extends to the pterygopalatine fossa and inferior orbital fissure. The temporal extension can be divided further into 2 parts: superficial and deep. The superficial part of the temporal process of the BFP stays between the deep temporal fascia, temporalis muscle, and tendon. The anterior end of it turns around the anterior rim of the temporalis muscle and continues with the deep part. The deep part of the temporal process lies behind the lateral orbital wall and frontal process of the zygoma and turns backward into the infratemporal space.5,8

The BFP derives its blood supply from the buccal and deep temporal branches of the maxillary artery, transverse facial branches of the superficial temporal artery, and branches of the facial artery. The branches from different sources form the lobar subcapsular plexus by freely anastomosing with each other. Owing to its rich blood supply, it can be considered as a pedicled graft with an axial pattern. The rich blood supply may explain the high success rate with this flap. It may also be one reason for the quick epithelialization of the fat.5,8 Epithelisation of the transferred BFP begins in a week and is completed within 6 weeks. At about 6 weeks, the graft is covered with healthy-looking oral mucosa. Although the histologic process of epithelization has not been fully documented, it seems that the superficial layer of fat tissue is replaced by granulation tissue and is finally covered by stratified squamous epithelium migrating from the regions neighboring the margins of the flap. It is very well documented that the surface of the fat is replaced by fibrous tissue at least to the depth of a 6- to 8-mm biopsy specimen.6,9

Literature shows that defects up to 6 x 5 x 3 cm have been successfully closed, but considering the manipulation required in adapting the flap to the defect, a guideline needs to be laid down for maxillary defects: 4 cm and up to 6 cm for buccal or retromolar defects.5

Verrucous carcinoma is a well differentiated form of oral squamous cell carcinoma that exhibits a distinctive clinicopathologic characteristics. Clinically this tumor is slow growing, locally aggressive, penetrates into the underlying connective tissue with blunt and well-defined borders, and spreads mainly by lateral extension with a lack of ability to metastasize. It is a relatively uncommon variant of squamous cell carcinoma of the oral cavity.10

The macroscopic appearance depends on the duration of lesion, the degree of keratinization and the changes in adjacent mucosa. The fully developed verrucous carcinoma appears as an exophytic, gray to red lesion with a rough, papillomatous surface with fine, finger-like surface projections.11

Majority of the lesions are found involving the buccal mucosa, alveolus, vestibule depicting a typical thick white cauliflower-like growth. Verrucous carcinoma constitutes 2 to 4.5% of all forms of squamous cell carcinomas, occurring more commonly in male’s peaks at 5th decade and above age and having a close connection with use of tobacco in some form.12

Verrucous carcinoma has a remarkable prognosis with a more conservative surgical treatment as it does not readily undergo metastasizes to regional lymph nodes, however, in later stages, it may involve adjacent tissues. Few incidences metastasis from OVC has been documented.1,11

An important consideration in treatment planning for OVC is to determine the need for neck dissection, as the aggressive clinical presentation of the tumor may sway clinical judgment in favour of performing a radial neck dissection as in case of squamous cell carcinoma. However, results of various studies in the literature suggest that lymph node metastasis in case of OVC is rare and a selective dissection should be performed if metastatic nodes are evident along with excision of only adjacent nodes.13

**CONCLUSION**

Overall oral verrucous carcinoma have an excellent prognosis with conservative surgical interventions without the necessity of aggressive radical dissections. Neck dissection is generally not required unless there are signs of lymphadenopathy. Due to the unique qualities of the BFP, such as its easy accessibility, location, rich blood supply, and high rate of epithelialisation, it is rightly termed as a “versatile flap”. Its clinical success is credited to its abounding vascular supply, decreased donor-site morbidity, ease of harvest, and a decreased incidence of complications.

**REFERENCES**


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