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Case Report

A rare case of granular cell tumour of the buccal mucosa and its surgical management-A case report

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ABSTRACT

Granular cell tumour also called as Arbikoss off tumour, because it is first reported by Arbikossoff in 1926. It is a rare soft tissue benign neoplasm. Mostly affecting women more than men in the 4^{th} to 6^{th} decades of life, with 70% occurring on dorsum of tongue and 5% involving the buccal mucosa also include other sites like gingiva, hard palate, lips. The clinical presentation of lesion mimics malignant oral squamous cell carcinoma hence a thorough clinical examination and prompt management is necessary. Hereby we present a uncommon case of granular cell tumour involving the right buccal mucosa. Its surgical excision, and closure with collagen membrane including follow up.

1. Introduction

Granular cell tumour is the benign mesenchymal neoplasm arising from schwann cells. previously it was considered as tumour arising from myoblasts so called as granular cell myoblastoma, but later changed to granular cell tumour arising from schwann cells neural origin.[1] In 2005, granular cell tumour (GCT) was first introduced in the WHO's classification of tumours. At the same time S100-negative "non-neural" granular cell tumours also been identified which may not derive from neural tissue.[2] Though the etiopathogenesis of the disease is not clear but clinicopathological data suggests possibility of local metabolic or reactive process may be the cause for disease development.[3] All age groups and genders can be affected. May be the hormonal influence in females aid in differentiation of stem cells into schwann cells thus creating a possibility of highest prevalence of disease in women than menin 4^{th} to 6^{th} decade of life.[3] Although it can occur anywhere in the body but most common sites are skin, oral cavity, digestive tract. Considering oral cavity granular cell tumour has strong site predilection for dorsum of tongue than other sites.[4] The treatment plan for such benign oral lesions is surgical excision, chemotherapy or radiation therapy depending on the lesion extent of involvement. Once the lesion is surgically excised it requires a dressing material to prevent surgical site infection, bleeding, pain masticatory stress. Oral surgeries result in large mucosal defects. These defects need a temporary dressing materials like Skin grafts, buccal fat pad, nasolabial graft and tongue flap were commonly used. The problem of skin graft is the presence of adnexal tissue and donor site morbidity. Buccal fat pad is difficult to handle and suture. The xenograft, bovine-derived collagen membrane is reliable option for dealing with such oral mucosal defects.[4]

2. Case Presentation

A 60years old female patient visited with a chief complaint of nodular growth in the right cheek mucosa since

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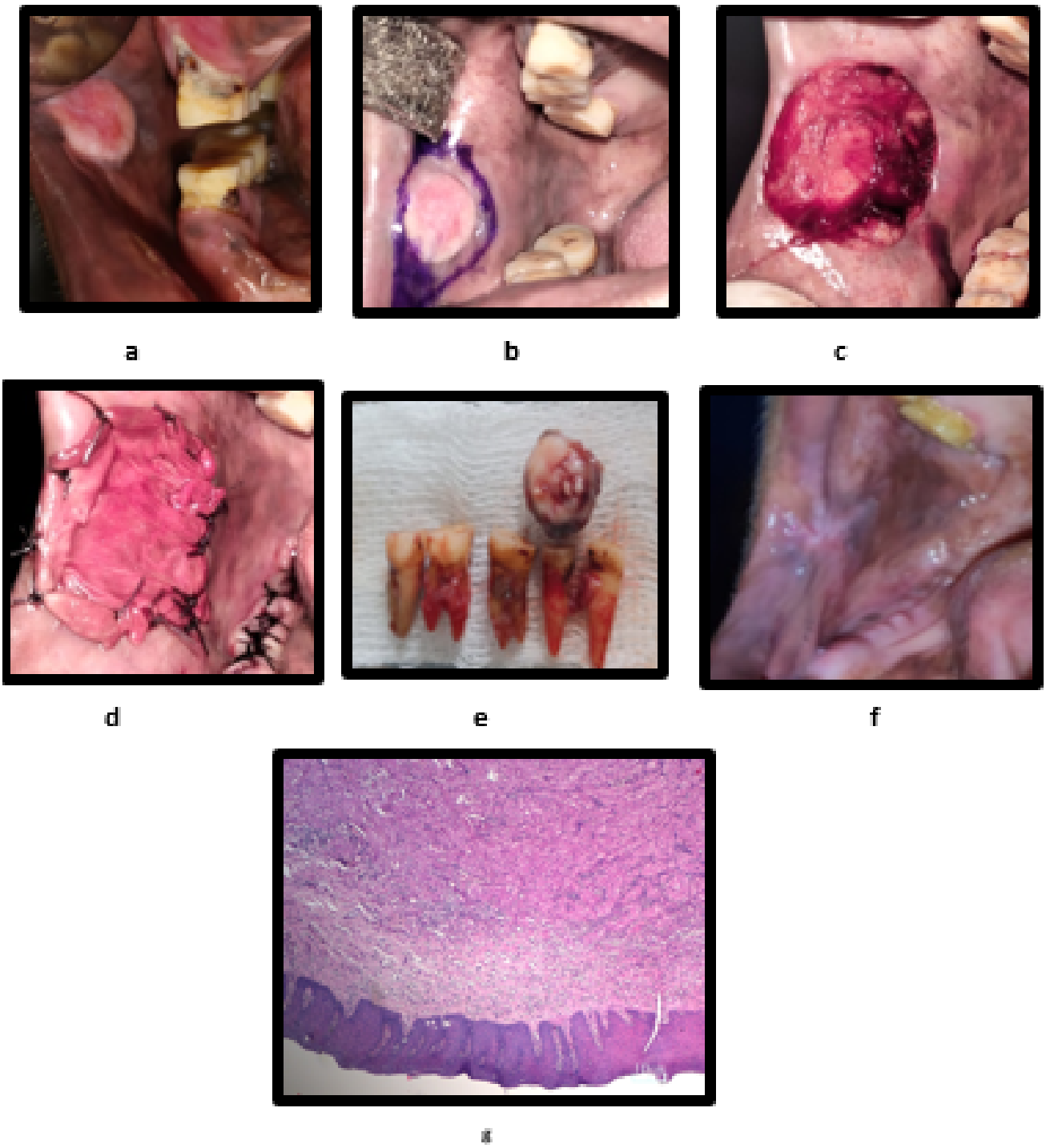

Figure 1: a; oral image **b;** Surgical sitemarking **c;** Surgical excision d; Collagen reconstruction **e;** Excised specimen **f;** Follow up after 6 months **g;** slide

6months.she was apparently alright before 6months then she noticed a growth on her cheek mucosa which is gradually increasing in size, pink to reddish in appearance, no associated pain or bleeding present. On further history taking patient gives history of diabetes mellitus under medical management since 6years also patient has a habit of mishri application since ten years with a frequency of thrice a day. On extra oral examination face appears bilaterally symmetrical, no lymphadenopathy present. Intra oral examination revealed firm solitary, round soft tissue growth on the right buccal mucosa which is about 1*1cm with pinkish appearing surface and indurated margins, melanosis of adjacent mucosa. Traumatic occlusion was also noted on mastication. After complete clinical examination we made a provisional diagnosis of traumatic fibroma, erythroplakia turning into malignancy or any benign soft tissue neoplasm. As the lesion is less than 1cm in size and nonpalpable lymphnodes we planned for excisional biopsy and closure of the surgical defect with collagen membrane. Routine blood investigations advised and three days antibiotic prophylaxis was given. All routine blood investigations were in normal physiological limit with controlled sugar levels. Excisional biopsy was performed including 2mm of safety margin under local anaesthesia, betadine irrigation was done and haemostasis achieved. surgical defect was closed with 5*5cm collagen membrane, stabilised with bolster dressing for 3 days. Post operative instructions was given, advised to take oral fluids and soft diet. Encouraged to maintain oral hygiene. Excised specimen was sent for histopathological examination. Patient called for checkup regularly wound healing was uneventful and collagen membrane was completely mucolysed after 6months.Histopathological features suggested granular cell tumour of buccal mucosa. patient kept under follow up for 2years and no recurrence was noted.

3. Discussion

Granular cell tumours were first explained by a Russian pathologist Abrikosoff in 1926. With the advancement in immunohistochemistry and electron microscopy the granular cell tumour of muscle derivation (myoblastoma) changed to schwanian derivation.[1] Granular cell tumours of S-100 Negative of nonneural origin were also identified apart from neural origin.[1] The aetiology is not clearly know but believed to be associated with gene mutation of PTPN11 gene and abnormal RAS/MAPK cell signalling pathways like Leopard, Noonan syndromes in which affected individuals present with multiple granular cell tumours,45 to 65% of cases, found in the head and neck region.[1] Intraorally GCT presents in areas such as the lip, tongue, palate, gingiva and buccal mucosa. The tongue is the most common site of presentation, accounting for more than 70% of oral GCTs, while 5% of lesions have been reported to be located in buccal areas.[5,6] These tumours typically present as solitary, painless sub mucosal nodules less than 3-4 cm large and may be found incidentally.[7] Affect both genders equally with slight female predominance with incidence rate of 0.03%.[8] Clinical appearance of ulceration and ill-defined borders can often mimic malignant pathology and may be misdiagnosed as squamous cell carcinoma.[9] Such lesions managed by surgical excision, chemotherapy or radiation therapy. surgical excision with negative margins and regular follow up of granular cell tumours of all locations either benign or malignant lesion, in case of positive margins there are chances of recurrence.[1] Recurrence in GCT (7%), Malignant transformation and distant metastasis, which is about10% and 2%, respectively.[10] For chemotherapy, radiation therapy there are limited studies with minimal success rate when used in malignant or metastatic diseases and require more randomized clinical trials to prove efficacy of therapy in granular cell tumour.[11] Here we performed complete wide local excision and collagen membrane reconstruction in present case considering smaller size of lesion and negative lymphnodes. Collagen membrane is bovine derived xenograft previously used in extra oral wounds and burns. Though it is difficult to handle it's biocompatibility, devoid of allergic reaction and availability made its use extensively in oral and maxillofacial defects when compared to other grafts like skin and mucosal flaps or platelet rich fibrin.[12] Usually, oral surgeries lead to raw defects if left uncovered has highest chances of getting infected because of moist oral environment, microorganisms and food ingestion if it is compounded by poor oral hygiene even has higher chances of getting infected, so to prevent such problems provide temporary dressing whenever possible. And there are enough documented studies suggesting that wound healed with less complications when temporary dressing is provided rather leaving the defect.[13] Once collagen is placed it undergo collagen lysis(inflammatory reaction) and eventually sheds off within a month resembling adjacent healthy mucosa. Some unique properties of collagen are it acts as hemostatic agent by providing stable coagulum, reduces pain by covering sensory nerve endings, acts as chemotactic agent by attracting endothelial and fibroblasts to initiate early healing process. At most important character is it prevents donor site morbidity,[14,15] Because of various advantages of the collagen membrane it can be preferred as a temporary material for coverage of the defect. On histopathological examination granular cells can vary widely with various cell and nucleus morphology. Immunochemistry staining for S-100 antibody is critical in making a definitive diagnosis.[16] The first line treatment option for GCTs involves surgical resections and its low recurrence rate, low malignant transformation potential and slow growth rate for oral cases contribute to favourable prognoses. A broad surgical margin with the removal of a

portion of adjacent soft tissue may be necessary to avoid recurrence as the tumour.[16]

4. Conclusion

Granular cell tumour presents a unique clinical presentation of sessile, solitary or multiple submucosal nodular growth which require wide local excision and regular follow up to prevent recurrence and malignant transformation, distant metastasis. Hence the diagnosis, treatment and follow up is important in dealing with such case presentations.

4.1. Learning point

Never overlook any pathology. Thorough clinical examination and prompt management is always required.

5. Source of Funding

None.

6. Conflict of Interest

None.

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