

Basaloid Squamous Cell Carcinoma Involving the Alveolar Ridge, Buccal & Lingual Vestibule - A Case Report

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Abstract :

Background: Basaloid squamous cell carcinoma of oral mucosa is a rare and aggressive variant of squamous cell carcinoma. They can be differentiated from squamous cell carcinomas by their distinct clinical and histopathological features. **Methods:** 45 year old female patient presented with extra oral exophytic mass and intra-oral ulcerative lesion on right buccal mucosa and vestibule. The patient was referred for routine blood examination and radiography followed by incisional biopsy. The biopsy specimen was fixed, processed and stained with Hematoxylin and Eosin for further microscopic examination. **Results:** On microscopic examination basaloid cells were seen proliferating along with dysplastic squamous cells in the connective tissue stroma. **Conclusion:** Based on the histopathological findings a diagnosis of 'Basaloid squamous cell carcinoma' was made. The patient was referred to department of Oral and Maxillofacial Surgery for excision of the lesion followed by radiotherapy.

Keywords: Basaloid, Squamous, Comedonecrosis, Variants

Introduction :

Basaloid Squamous cell carcinoma (BSCC) is a rare and aggressive variant of squamous cell carcinoma (SCC). It was first described as a separate entity by Wain et al (1986)¹ and was included in the revised edition of WHO classification in 1991.² BSCC is considered a high grade variant of SCC that arises in upper aerodigestive tract i.e supraglottic larynx, base of tongue, pyriform sinus and palatine tonsils.¹ In the oral cavity BSCC has a predilection for tongue. However it is also found in other locations such as floor of mouth, palate, retromolar area, buccal mucosa and gingiva.³ BSCC presents most commonly in older men in the sixth and seventh decade of life.⁴ Because of advanced stage at presentation oral BSCC is prognostically worse.⁵ We report a case of a 45 year old female who was diagnosed with BSCC of alveolar ridge, buccal and lingual vestibule.

Case Report :

A 45 year old female patient reported to Sinhgad Dental College and Hospital, Pune with a complaint of pain in right lower jaw since 2 to 3 months. Patient noted a painless ulcer 3 months back in the lower right buccal vestibule area. The ulcer gradually increased in size to involve the extra-oral tissues too. Extra-orally the exophytic mass extended superoinferiorly from lower border of mandible to 1.5 cm above it and anteroposteriorly from angle of mandible to premolar area. The borders of the ulcer were indurated. Mild tenderness and pus discharge was noted. Intra-orally the ulcer extended anteroposteriorly from buccal vestibular area of 43 to 47 and mediolaterally from buccal vestibule crossing the alveolar ridge to the lingual vestibule (Fig. 1). Because of the ulcer the patient had limited mouth opening. 46 and 47 showed grade III mobility. Right submandibular lymph nodes were palpable and fixed. Patient gave a positive history of tobacco use in the form of mishri and quid 6 to 7 times a day

for more than 25 years. Quid was placed in the right buccal vestibule.

OPG showed ill-defined radiolucency in right body of mandible extending from mesial of 43 to distal of 47. Areas of greater radiolucency are seen within the radiolucency indicative of cortical expansion. Thinning of lower border of mandible and floating teeth appearance was observed (Fig. 2).

After carrying out routine blood investigations, an incisional biopsy was taken. The specimen was fixed in formalin, processed and stained with hematoxylin and eosin. Microscopic examination of stained section showed dysplastic stratified squamous epithelium. The basal cells of the epithelium were columnar with hyperchromatic nuclei and scanty cytoplasm. These basaloid cells were proliferating in the underlying connective tissue along with squamous cells and forming ductular solid areas, the centre of which is filled with keratin. Comedo-necrosis was also seen within the islands of tumour cells. Chronic inflammatory cells were seen between the proliferating neoplastic epithelial cells (Fig. 3, 4 and 5). Based on the histopathological findings a diagnosis of 'Basaloid squamous cell carcinoma' was made. The patient was referred to department of Oral and Maxillofacial Surgery for excision of the lesion followed by radiotherapy.

Discussion :

BSCC was first described by Wain et al primarily in the upper aerodigestive tract.¹ In the oral cavity only 45 cases have been reported so far⁵ chiefly occurring in men of 6th and 7th decade⁴ with a strong predilection for base of tongue (61%) and floor of mouth (30%).⁵ The present case is seen in a 45 year old female affecting alveolar ridge, buccal and lingual vestibule thus showing an uncommon age, sex and site involvement.

Histologically BSCCs feature solid basaloid appearing dysplastic islands with biphasic pattern showing comedonecrosis and pseudoglandular pattern, foci of squamous differentiation with or without keratin pearls and surface mucosal epithelium showing dysplastic features.¹

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Fig.1: Photograph showing ulcerated growth on right buccal mucosa

Fig.2: Radiograph showing radiolucent destructive lesion in the mandible

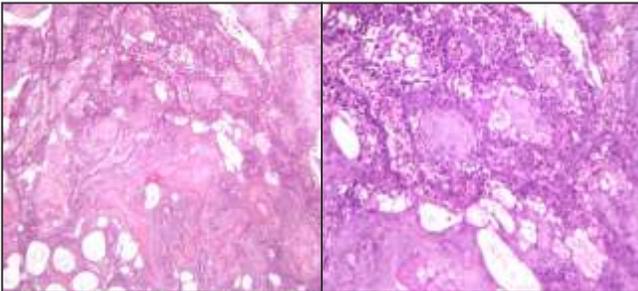


Fig.3: Photomicrograph showing squamous as well as basaloid cells

Fig.4: Photomicrograph showing basaloid cells having palisaded appearance

The cell of origin is a single totipotential cell capable of divergent differentiation and located either in the basal cell layer of the surface epithelium or within seromucous glands.^{1, 3}

The basaloid component is defined by 4 features.⁶

1. Solid growth of cells in a lobular configuration closely apposed to the surface mucosa.
2. Small crowded cells with scant cytoplasm.
3. Dark hyperchromatic nuclei without nucleoli.
4. Small cystic spaces containing material resembling mucin.

Ultrastructurally basaloid cells are polygonal with finely dispersed chromatin in pale nuclei. Cytoplasm contains desmosomes, rare tonofilaments and free ribosomes. Electron microscopically, the cyst like spaces seen in light microscope are lined with basement membrane material and filled with loose stellate granules or replicated basal lamina arranged in parallel stacks or globular masses.^{6,7}

Squamous epithelium requires presence of 2 or more of the following features^{6,8}

1. Individual cell keratinization
2. Intercellular bridging
3. Keratin pearl formation
4. Cells arranged in mosaic pattern

Ultrastructurally squamous component contains well formed desmosomes and clumps of tonofilaments. Immunohistochemistry shows predominant expression of

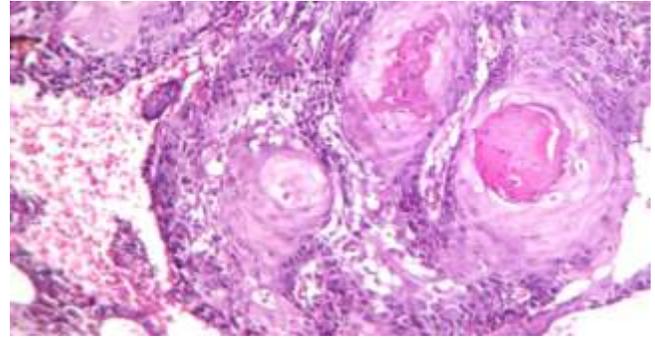


Fig.5: Photomicrograph showing keratin pearls along with basaloid cells

keratin 14 and 19 at the periphery.^{6,9}

BSCCs should be differentiated histologically from adenoid cystic carcinoma, adenosquamous carcinoma, polymorphous low grade adenocarcinoma, small cell undifferentiated carcinoma, basal cell adenosquamous carcinoma, salivary duct carcinoma and neuroendocrine carcinoma.^{5,10}

BSCCs have an aggressive clinical course than their stage matched conventional SCC. Most BSCCs are diagnosed at advanced clinical stages with nodal and distant metastasis thus having an unfavorable prognosis. Studies done by Ricardio et al showed higher positivity for AgNOR, PCNA, p53 and higher expression of MMP-1, MMP-2 and MMP-9 for BSCCs as compared to conventional SCCs suggesting an aggressive behavior.^{11,12}

Conclusion :

1. BSCCs have distinct clinical and histological features.
2. They are aggressive and have poorer prognosis than conventional SCCs.
3. BSCCs are very often misdiagnosed as adenoid cystic carcinoma.
4. Commonly seen in men of 6th to 7th decade in base of tongue but present case is seen in 45 year old female in alveolar ridge, buccal and lingual vestibule.

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