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CASE STUDY

ADENOID BASAL CELL CARCINOMA: DIAGNOSTIC CHALLENGE OF RARE ENTITY

***,[1]Dr. Deepak Chandrakant Kelgandre, [2]Dr. Saurabh Sabnis, [1]Dr. Dinesh Rajput and [3]Dr. Roshan Chandwani**

[1]Department of Oral Pathology and Microbiology, YCMM and RDFS Dental College and hospital, Ahmednagar, Maharashtra
[2]Department of Oral Pathology and Microbiology, Saraswati-Dhanwantari Dental College & Hospital, Parbhani, Maharashtra
[3]Department of Oral Medicine and Dental Radiology, YCMM and RDFS Dental College and hospital, Ahmednagar, Maharashtra

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ABSTRACT

Basal cell carcinoma (BCC) is the most common malignant tumor of skin. The most common site (80%) is head and neck, tumour also commonly seen on nose, eyelids, inner canthus of eye, behind ears etc. A number of histopathological subtypes of basal cell carcinoma have been defined. Out of which few are rare subtypes. BCC exhibits a varied morphology such as adenoid, keratotic, sebaceous, basosquamous, apocrine, eccrine or fibroepithelial. Adenoid type of BCC is one of the rare histopathological types of BCC which is difficult for diagnosis. Here we reported one such rare case of adenoid BCC.

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INTRODUCTION

Basal cell carcinoma (BCC) is the most common cutaneous tumor, accounting for approximately 60 -70% of all malignant diseases of the skin, first described by Jacob in 1827. (Jacob, 1827) It is more prevalent after the fourth decade of life and its peak incidence is at the 6th decade with male preponderance. (Betti *et al*., 1997) Up to 80% of all the lesions are found on the head and neck, with a variable clinical presentation ranging from a papulo-nodular lesion, erythematous plaque to an ulcerated destructive lesion (rodent ulcer). BCCs can exhibit both a variety of growth patterns (superficial, nodular, micro-nodular or infiltrating) and a variety of types of differentiation, such as adenoid, keratotic, sebaceous, baso-squamous/ metatypical, pilar, apocrine, eccrine or fibroepithelial. It is exclusively seen on sun exposed and hair bearing skin especially of the face. About one-third of BCC occurs on sun protected area, suggesting factors other than solar exposure playing a role such as genetic susceptibility. (Betti *et al*., 1997) It consists of plugs and clusters of basal cells, with various clinical manifestations in accordance with the presence of various morphological features, which to a certain extent correspond with the histological types. (Vantuchova and Curik, 2006) Adenoid type of BCC is a rare histopathological variant which can morphologically present as pigmented and non-pigmented nodule or ulcer. (Swagata A Tambe *et al*., 2013) A number of histopathological subtypes of basal cell carcinoma have been defined. Here, we report one such rare case of adenoid BCC.

Corresponding author:* **Dr. Deepak Chandrakant Kelgandre,
Department of Oral Pathology and Microbiology, YCMM and RDFS Dental College and hospital, Ahmednagar, Maharashtra

Case report

A 60-year-old male reported to our department with the chief complaints of ulceration and superficial bleeding from the nodule which is present on left side of the face since last 10 days. History revealed that an asymptomatic slow- growing nodule is present on the left side of the face below the eye since 1.5 years. The lesion had gradually increased to a size of 3 cm in diameter. (Figure 1) There was no history of pre existing skin condition, indigenous drug intake and trauma at the affected site prior to the appearance of lesion. Family members did not report the similar condition. The patient was a laborer by profession, which involved long hours of sun exposure. On examination, a single irregular ulceroproliferative lesion measuring about 1.5 × 2 cm in

diameter over the left side of midface region below the lower eyelid of left eye was present, with rolled out edges and sloping margins (Figure 1). The floor was formed by healthy granulation tissue and minimal slough discharge. On palpation ulcer was soft in consistency, mobile and not adherent to the underlying structures and borders were indurated. The regional lymph nodes were not enlarged and his general physical condition was stable. Laboratory investigations of a patient were normal. There was no evidence of metastases in both the cases on radiological investigations. The clinical impression was of an ulcerated BCC, and the patient was taken up for a wide local excision of the ulcerated lesion. Gross examination of specimen showed a raised nodule with a thin rim of skin at the periphery. It showed a central ulcer with crusting and irregular rolled borders. Histological examination showed thinned out epidermis with masses of basaloid cells in the dermis, predominant adenoid pattern with strands of basaloid cells in a lace like and reticulate arrangement, with many tubules and few cystically dilated spaces containing mucin (Figure2 & 3). Peripheral palisading of the basaloid cells was seen in some of the islands along with retraction artifact of the surrounding stroma and connection to the overlying epidermis was evident. (Figure 4) At places, the cells showed tubular differentiation with the lumina showing granular material. Some focal areas of melanin pigmentation were also evident. The infiltrating tumor involving the dermis is very well demarcated from the underlying subcutaneous tissue which was free of tumor cells and was composed of adipose tissue, dilated blood vessels with R.B.C's, hemorrhage and muscle tissue.

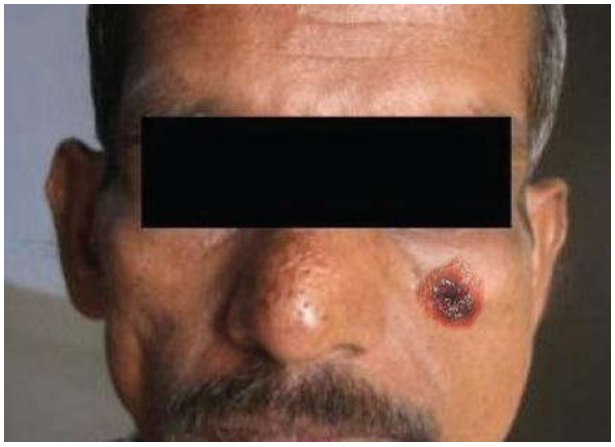

Figure 1. Clinical examination of a patient

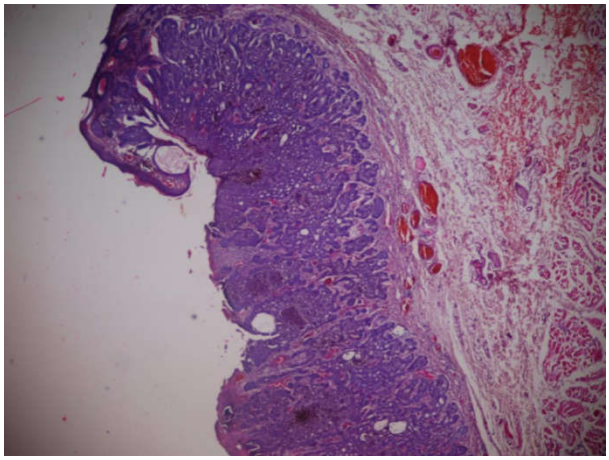

Figure 2. 4X Magnification showing ulceration of the epidermal surface associated with an invading tumor of hyperchromatic epithelial cells

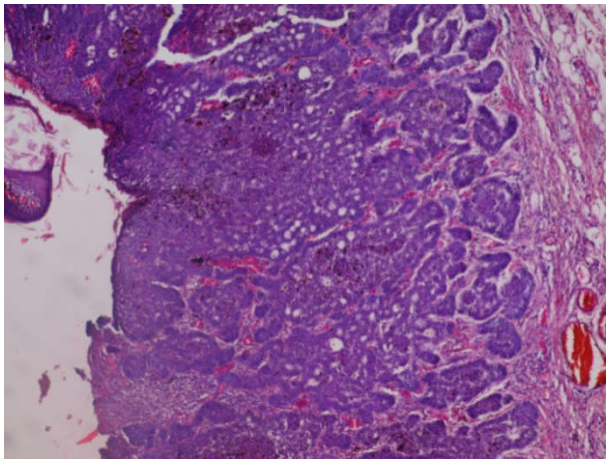

Figure 3. 10X Magnification showing ulceration of the epidermal surface associated with an invading tumor of hyperchromatic epithelial cells form nodules in a lace-like pattern

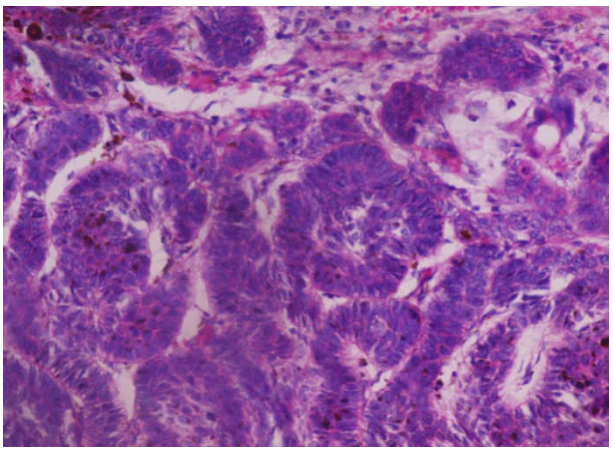

Figure 4. 40X Magnification showing basaloid epithelial tumor cells arranged in a tubular form, peripheral cells arranged in a Palisading arrangement, amorphous granular substance present in the lumen

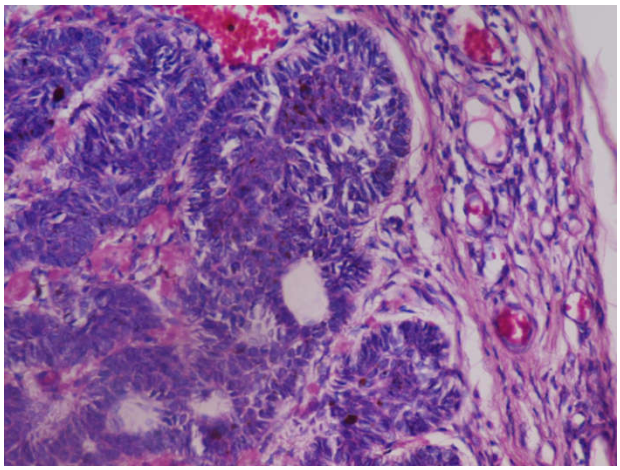

Figure 5. 40X Magnification showing basaloid epithelial tumor cells arranged in a lace like & tubular form, amorphous granular substance present in the lumen which is stained with Alcian blue special stain

To confirm the mucineous secretion within the tubule an Alcian blue special staining was done which showed a positive staining. (Figure 5) Immunohistochemical examination was also done to confirm the diagnosis, staining with anti-bcl-2 monoclonal antibody showed cytoplasmic staining throughout

the lesion but staining for other markers like S-100, epithelial membrane antigen (EMA), and cytokeratin (CK-7) were showed negative results. Considering all histological findings diagnosis of adenoid type of BCC was made. The lesion was completely excised with good postoperative course and good outcome without recurrence in past three years follow-up.

DISCUSSION

BCC has been described as the most common malignant neoplasm of humans. (Lacour, 2002) The incidence of BCC is about 2000 case per 100 000 population, and the morbidity varies depending on the geographic width and patient age with growing tendency for individuals above 50 years of age. (Ajay Kr. Singh *et al*., 2014) The BCC affects mainly sun exposed areas, in 80% of patients it appears in the head and in half of them affects the skin of cheeks and nose. The tumour has slow progression and metastases are found in only 0.5% of the cases. But it can result in considerable local destruction and disfigurement when treatment is neglected and inadequate. The main etiological factor is chronic UV exposure at the expense mostly UVB rays with length 290-320 mm. In our case patient is also a labor who works whole day under the sun exposure. Besides ultraviolet radiation there are other exposure carcinogens such as exposure to the ionizing radiation, arsenic, industrial chemical substances such as vinyl chloride, polycyclic aromatic hydrocarbonates as well as alkalizing agents. There is no uniform and generally accepted classification of BCCs. A number of histopathological subtypes of basal cell carcinoma have been defined. According to WHO (2006) and rosai (2004) Patterson (2006) and Rippy (1998) predominantly six to ten types i.e., nodular, superficial, infiltrative, micronodular, fibroepithelial, basosquamous, keratotic, pigmented, adenoid, sclerosing type. In which few are more common other is less and very few are rarer. Here we reported such a rare case of an adenoid variant of BCC. Rare variants, like cystic, adenoid, morphoeiform, infundibulocystic, pigmented, clear-cell, signet ring cell, granular giant cell, adamantanoid, & schwannoid, account for less than 10% of all BCCs. (Kossard *et al*., 2006) There is paucity of literature on exact incidence of adenoid BCC but Bastiaens, *et al*. reported the incidence of 1.3%. (Bastiaens *et al*., 1998) It is often regarded as a low grade malignancy compared to other subtypes like nodular and morpheic form which are of high grade. Hussain *et al* reported an incidence of only 6.67% of the adenoid BCC among all the histopathological types of BCC of the eyelids, and this variant in its pure form is less often seen. (Hussain *et al*., 2011) BCC is an epithelial malignant tumour with a low malignant potential, consisting of cells which look like the basal epidermis layer. The diagnostic histological features, common for all types of tumour, are basaloid cells with a thin pale cytoplasm surrounding round or oval nuclei with a rough granulated chromatin pattern. The peripheral borderline cell layers are characteristic by palisade arrangement and the surrounding stroma is often separated by artificially creates slits. (Sexton *et al*., 1990) Mitotic figures and intercellular bridges are also present but not as a common finding as present in squamous cell carcinomas. Basal cell carcinoma with glandular or ecrine differentiation i.e adenoid variants shows arrangement of cells in intertwining strands and radilly around islands of connective tissue, resulting in a tumour with lace like pattern. The lumina may be filled with colloid substance or with amorphous granular material. All these diagnostic features were present in our case. Histological examination is the gold standard for diagnosis of BCC, although immunohistochemistry has been played a major role to rule out the other same looking lesions. In our case immunohistochemistry showed homogenous cytoplasmic staining for anti-bcl-2 monoclonal antibody, this feature is useful in differentiating BCCs from trichoepitheliomas. Also, S-100, EMA, and CK-7 were showed a negative done staining thereby excluding an adenoid cystic carcinoma. Sujata Jetley *et al* concluded that adenoid basal cell carcinoma in its pure form is a rare lesion and needs to be differentiated from cutaneous Adenoid cystic carcinoma and cutaneous apocrine carcinoma. (Sujata Jetley *et al*., 2013)

Treatment of basal cell carcinoma includes surgical, mohs surgery, electic cauterization and curettage, cryotherapy, roentgen therapy, laser treatment, s-fluoruracil, imiquimod, interferon alpha, photodynamic therapy etc (Kikushi *et al*., 1996). As BCC shows slow progress and numerous therapeutic methods are available, BCC should not be underestimated, it can destroys the underlying tissues and can metastases to the distant sites in the body which is a life threatening.

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