

Case Report

CLEAR CELL BASAL CELL CARCINOMA- AN UNUSUAL ENTITY IN AN INDIAN MALE

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ABSTRACT

A 68 year old Indian male presented with an ulcerated lesion over the face for one and half years. Clinical examination raised a suspicion for Basal cell carcinoma (BCC), which was then biopsied and examined histopathologically. Microscopic examination of the biopsy specimen revealed sheets and nests of clear cells with hyperchromatic nucleus and vacuolated cytoplasm along with few signet ring cells and also notable peripheral palisading around the cell nests. The sections demonstrated cytoplasmic PAS as well as cytokeratin 5/6 positivity, however, S-100 staining was negative. Thus, differentiating this lesion from other suspicious diagnoses, like- sebaceous cell carcinoma, eccrine porocarcinoma, hidradenocarcinoma, clear cell variants of squamous cell carcinoma and melanoma. Hence, a diagnosis of clear cell BCC was ascertained. Clear cell variant of BCC is an uncommon subtype with ambiguous pathogenesis and prognosis. Hence, we find it important to report this case here.

Keywords: Basal cell carcinoma, Clear cell variant, Indian male

INTRODUCTION

Basal cell carcinoma (BCC) is amongst the most common type of skin cancers worldwide after melanomas and has higher incidence in the fair skinned people (Mora and Burris, 1981). It is superseded by squamous cell carcinoma in the Asian population and the dark skinned people (Talvalkar, 1970), where basal cell carcinomas are less common. The true incidence of basal cell carcinoma is largely unknown especially in our Indian scenario (Scotto *et al.*, 1983). BCC occurs most commonly over the head and neck region (80%) and predominantly in older males (Scotto *et al.*, 1974). They are usually slow growing tumors which may be locally aggressive in some individuals. The histopathological diagnosis of BCC is characterized by sheets, cords and nests of tumor cells resembling basal cells of the epidermis with nests showing peripheral palisading. A retraction artefact can usually be observed between the nests and stroma. There is a well determined connection of the nests with the overlying epidermis. Histopathologically there are various variants of BCC, including Superficial, Nodular (solid), Micronodular, Infiltrating, Fibroepithelial, basal cell carcinoma with adnexal differentiation, Basosquamous carcinoma, keratotic basal cell carcinoma; rare variants like cystic, adenoid, sclerosing/morpheiform, infundibulocystic, pigmented and still other rarer variants- clear-cell type, granular cell and giant cell types (LeBoit *et al.*, 2006). It is important to categorise and diagnose these variants in order to establish their clinical importance and prognosticate them in future. Amongst these, the clear cell variant is a rare entity (Reck *et al.*, 1996). It mimics several other malignant skin lesions and thus, the significance of identification of this entity as a variant of BCC. Further unusual to report, is its occurrence in an Asian (Indian) male.

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CASES

A 68 year old male presented to the surgery outpatient with an ulcerated lesion over the left side of face near nose for one and half years (Figure-1a). The lesion was gradually increasing in size. There was no history of trauma of any kind. On physical examination, the ulcerated lesion was 4 X 3 X 1 cm in size. The ulcer was irregular in shape with rolled out pearly margins. It was firm in consistency. There was no associated pain. There was no palpable lymphadenopathy. Rest of the local and systemic examination was normal.

Routine haematological investigations were normal. X-ray of the face was normal. A presumptive clinical diagnosis of Basal cell carcinoma was made.

A needle biopsy was carried out as an outpatient procedure under local anaesthesia. A biopsy piece measuring 0.8 x 0.3 x 0.2 cm, from the lesion was sent for the histopathological examination. The lesion was firm in consistency, ulcerated and with hemorrhagic spots. The specimen was fully processed for further microscopic examination.

Hematoxylin and eosin (H&E) stained paraffin sections revealed sheets and nests of clear cells in the dermis with hyperchromatic nucleus and vacuolated cytoplasm, along with few signet ring cells (Figure-1c, 1d). There was also notable peripheral palisading in the cell nests (Figure-1b). The clear cells were striking in appearance with a single large vacuole in their cytoplasm and a dark, condensed nucleus at the periphery. The sections showed notable cytoplasmic positivity for Per-iodic acid Schiff (PAS) stain in the tumor cells (Figure-2a). The tumor cells were also strongly positive for cytokeratin 5/6 (Figure-2b). However, there was no definite staining of tumor cell nests with S-100 immunostain (Figure-2c). A diagnosis of clear cell variant of basal cell carcinoma was thus made, based on the histopathology of the lesion.

The lesion was excised surgically with as wide a margin as possible considering the region of the face close to nose. Patient recovery was uneventful in postoperative period. One year follow up of the patient has shown no recurrence so far.

DISCUSSION

Basal cell carcinoma is a group of malignant cutaneous tumours characterised by the presence of lobules, nests, bands or cords of basaloid cells having oval nuclei and relatively little cytoplasm (LeBoit *et al.*, 2006). The nuclei resemble those of basal cells of the epidermis, but do not show intercellular bridges. Tumor nests show peripheral palisading of nuclei and clefting artifact between the epithelium and the stroma.

Basal cell carcinomas (BCC) develop predominantly in older men with fair sun-damaged skin. UV radiation, arsenic and ionizing radiation exposure are predisposing factors (LeBoit *et al.*, 2006). These lesions are rare in the dark skinned Indian population, which was however, true in our case. Face and head and neck region are the most common locations. A typical lesion consists of a slowly enlarging ulcer surrounded by a pearly, rolled border. This represents the so-called rodent ulcer. Most BCCs are non-metastasising but only locally aggressive, however, in those which spread, initial involvement of a lymphnode is found in 50 % cases (Mikhail *et al.*, 1977). In the present case there was no lymphadenopathy. Aggressive large deep ulcerative growths especially over the face may destroy the eyes and nose, penetrate the skull and invade the dura mater turning fatal (Dvoretzky *et al.*, 1978). X ray of the face was normal in this case with no signs of deep aggressive involvement of bone or duramater despite close proximity to the nose.

No substantial evidences of the prognosis of the rare variants of BCC have been gathered so far and neither is much clear about the prognostic value of the clear cell variant in particular, which has only been mentioned in few case reports so far^[6], more so none to our knowledge in the Indian set up. Hence, reporting such variants will help establish clinically significant conclusions by future researchers. In the clear cell basal cell carcinoma, the clear cell pattern may occupy all or part of the tumor islands. The clear

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cells contain vacuoles filled with glycogen which often cause peripheral displacement of the nucleus, giving the cells a signet-ring appearance (Cohen and Zaim, 1988).

The differential diagnoses of clear cell basal cell carcinoma pay important diagnostic challenges. They include sebaceous carcinoma which can be distinguished by its foamy-bubbly cytoplasm containing lipid and starry nucleus with PAS negativity, clear cell squamous cell carcinoma which are also negative for

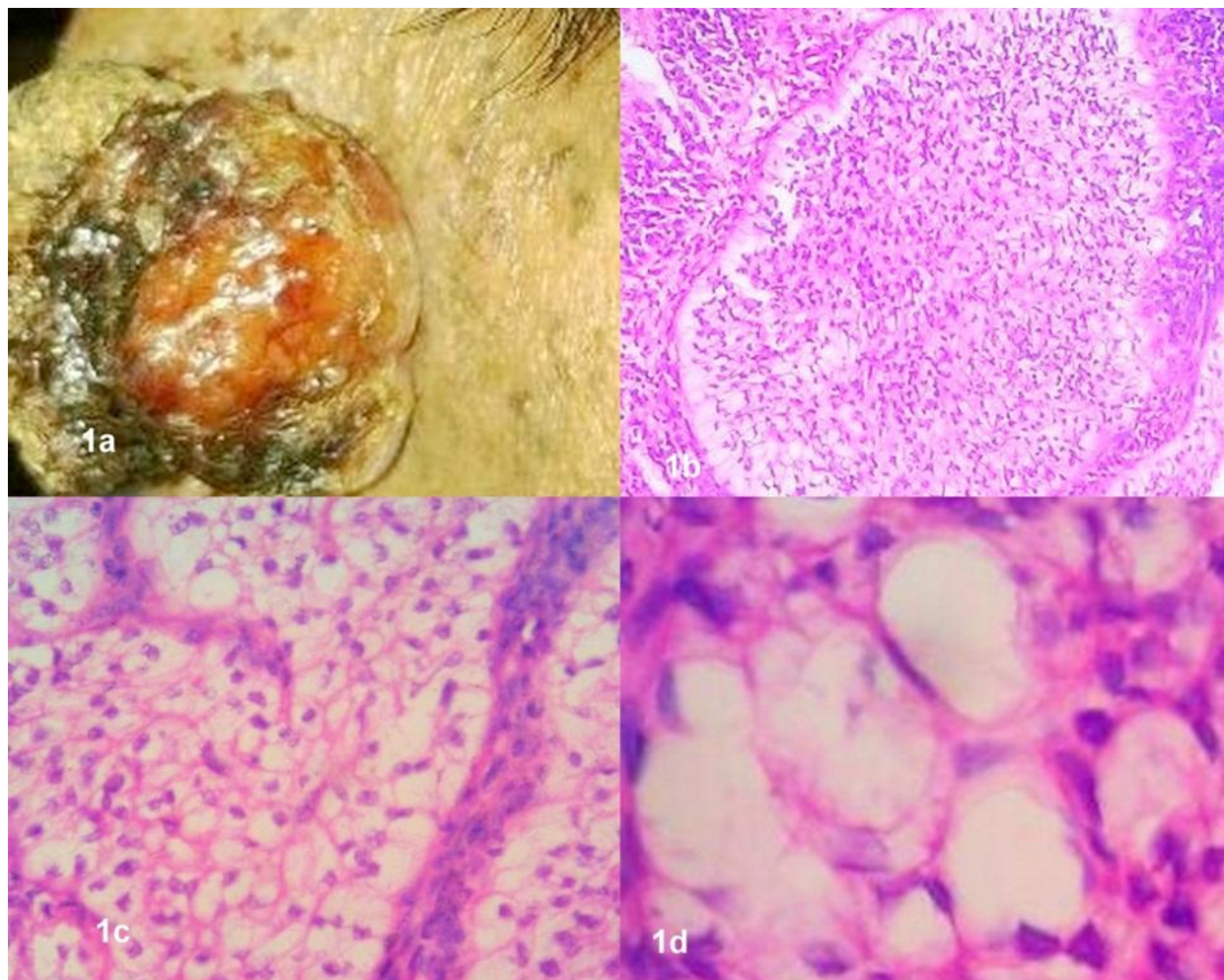


Figure 1: a) Shows ulcerated lesion over left side of face near nose, b) Shows a nest of clear tumor cells with peripheral palisading (H&E x 40), c) Shows nests with cells having hyperchromatic nucleus and vacuolated cytoplasm (H&E x 100), d) Shows signet ring cells (H&E x 400).

PAS stain and show foci of keratinisation or keratin pearls. In our case, there was notable cytoplasmic positivity for PAS stain in the tumor cells, indicating presence of glycogen in the cytoplasm, which ruled out the above two differentials. Eccrine porocarcinoma is another close mimic but is negative for cytokeratin 5/6, which was strongly positive in the present case in all the tumor nests. Diagnosis of hidradenocarcinoma can be ruled out by a negative S-100 as in our case inspite of being PAS positive, as hidradenocarcinoma stains positive for both PAS and S-100. Clear cell melanoma is usually positive for S-100, unlike the current case (Sarma *et al.*, 2011).

A confirmatory diagnosis of Clear Cell Basal Cell Carcinoma was ascertained after exclusion.

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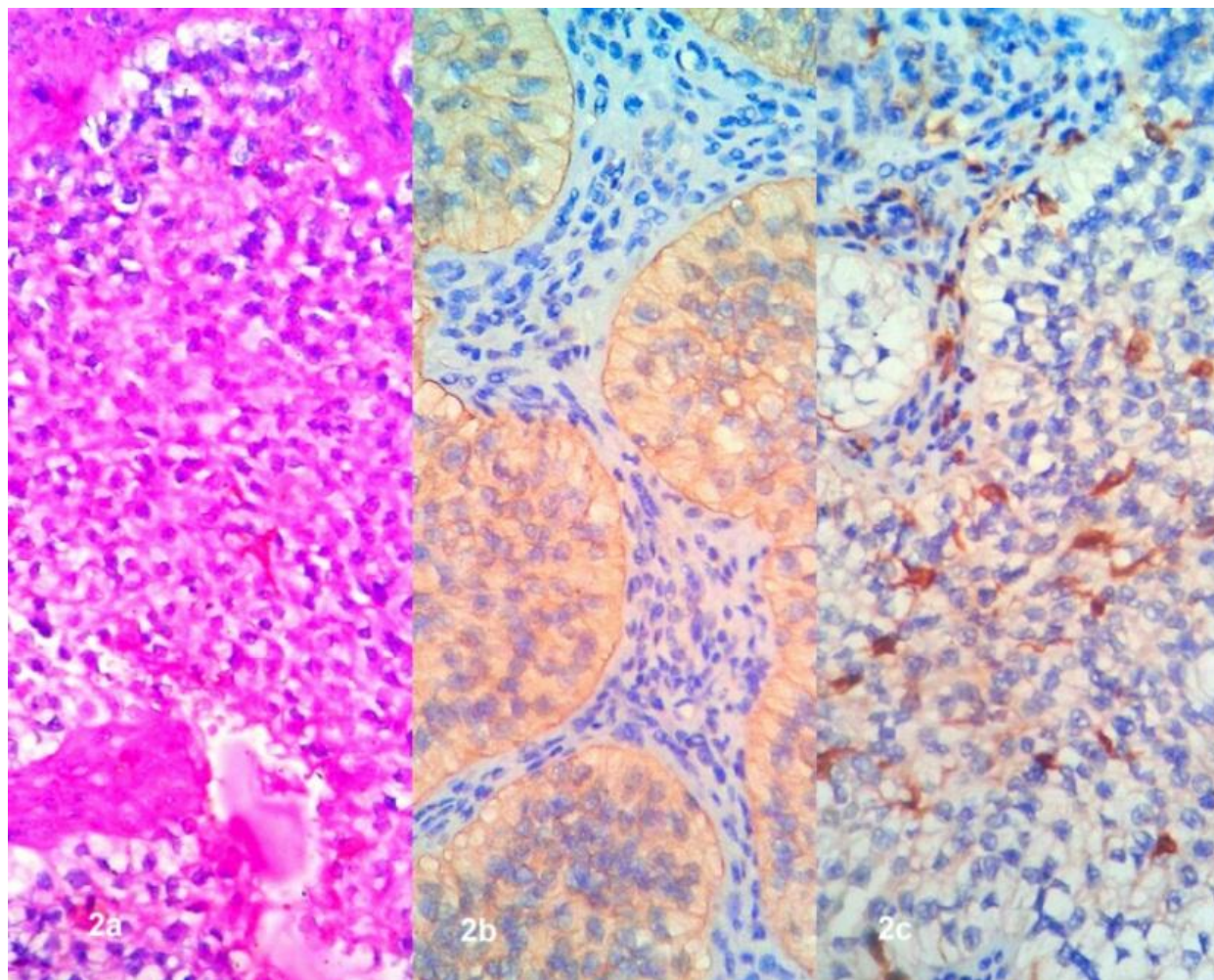


Figure 2: a) Shows cytoplasmic PAS positivity in tumor cells (PAS x 100), b) Shows strong cytoplasmic CK 5/6 positivity (CK 5/6 immunostain x 100), c) Shows negative staining with S-100 (S-100 immunostain x 100).

CONCLUSION

There is meagre information about this particular variant of BCC especially from the Indian subcontinent. Also, little is known regarding any special or specific factors that might lead to its development in a population which is not much exposed even to the commoner variants of BCC. The incidence of metastasis, the degree of aggressiveness as well as the rate of recurrence of this variant have not been elucidated in the literature. Hence, it could be interesting to report such variants in order to build up a foundation for future researchers.

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