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**Photo vignette**

**Linear adamantinoid basal cell carcinoma in the axilla**

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**Abstract**

We present a case of asymptomatic deeply pigmented linear plaque with rolled borders that we encountered in an elderly Indian male over a sun protected site, the left axilla. The diagnosis of linear adamantinoid basal cell carcinoma was confirmed on histopathological examination.

**Keywords: Linear Basal cell carcinoma, Basal Cell Carcinoma in axilla**

**Introduction**

Linear basal cell carcinoma (LBCC) is a recently described, but uncommon, entity. The most common histological presentation of BCC is of nodular subtype with low rate of recurrence similar to other morphological types of BCC. However, up to 40% of LBCC cases demonstrate high risk subtypes with high recurrence rates, such as micronodular, infiltrative, adamantinoid, and morpheic subtypes [1,2]. Herein we report the first case of linear BCC that occurred under the left axilla in the Indian population

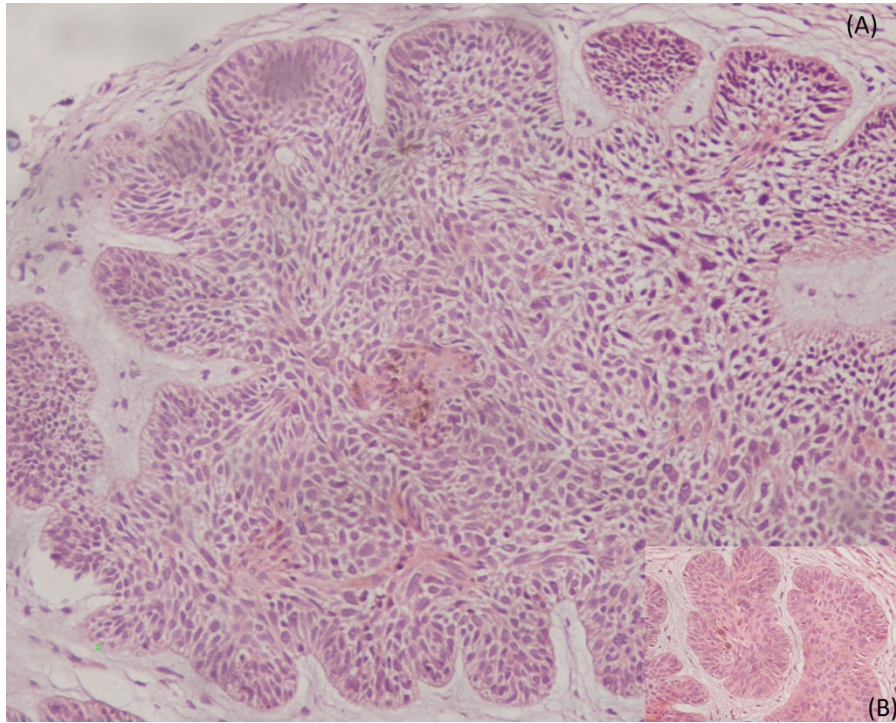
**Case synopsis**

A 65-year-old man with Fitzpatrick skin type V presented to the department of dermatology for an asymptomatic, pigmented, linear plaque in the left axilla present for 10 years. It started as a dark colored papule and progressed gradually over the next 5-6 years along the left axillary fold. There was no history of trauma or previous lesion at that site. Cutaneous examination revealed a linear, pigmented plaque measuring 6 cm in length and varying in width from 5 mm anteriorly to 1cm posteriorly with rolled borders, lying in between the anterior to the posterior axillary folds of the left arm (Figure 1). Family history and personal medical history were unremarkable.



**Figure 1.** Asymptomatic linear pigmented plaque of 6cm length. Biopsy from the center of the plaque revealed pigmented adamantoid basal cell carcinoma.

Skin biopsy revealed nests of basaloid cells in the epidermis with mitotic figures. Peripheral palisading and clefts were also seen (Figure 2). The inner layer of cells showed elongated nuclei and stellate cytoplasm stretched as thin connecting bridges across empty spaces. Histopathology was consistent with basal cell carcinoma of adamantinoid variety. Patient was referred to the plastic surgery department and a wide local excision was performed.



**Figure 2.** Histopathologic examination on hematoxylin and eosin stain on 100x (a) shows nests of basaloid cells in the epidermis with mitotic figures. Peripheral palisading is also seen. There are retraction clefts and melanin pigment laden cells. The inner layer cells showed elongated nuclei and stellate cytoplasm suggestive of adamantinoid bcc. Inset (b): Close up view (400x) of basaloid cells with palisading appearance and mitotic figures.

## Discussion

Linear basal cell carcinoma (LBCC) is a very rare morphological variant first described by Lewis [3] in 1989. LBCC is classically described as a linear pigmented lesion with straight, well defined edges and length much longer than breadth (length: width ratio of minimum 3:1) as in our patient [4]. LBCC occurs in people over 60 years of age in more than 90% of cases. LBCC occurs equally in both sexes with an age ratio similar to that of other forms of basal cell carcinoma [5]. The peri-ocular region is the most commonly affected site followed by the neck, trunk, lower face, axilla, inguinal skin crease, and scrotum [5]. Since 1989, 37 cases in the English literature and 10 cases in the Japanese literature have been reported. Out of these, three cases were present in the axilla.

The low incidence of LBCC relative to the high incidence of basal cell carcinoma (BCC) found worldwide may be partly explained by the lack of objective criteria to define LBCC. This may have led to under recognition of many cases. The presence of BCC at sites other than head and neck region is also uncommon, requiring a high degree of suspicion for diagnosis.

BCCs have mostly been classified according to histological type. Many classification systems have been proposed by authors in the past, ranging from 4 types by Rippey et al in 1998 [8] to 26 types described by Wade and Ackerman et al in 1978 [9]. Adamantinoid type is an uncommon variant of BCC, which shows great histological similarity to ameloblastoma or adamantinoma. Solid masses of basaloid cells with peripheral palisading of cells is seen. Inside this layer, cells show elongated nuclei with stellate cytoplasm stretched as thin, connecting bridges across empty spaces, as seen in adamantinoma. Berk et al in a randomized retrospective case control study observed that BCC with adamantinoid histopathologic features tend to be clinically more aggressive. In their study, adamantinoid BCC required more stages for clear histologic margins and had larger post-Mohs defects [10].

The linearity of this variant of BCC has been explained by Pierard et al[6]. In the reticular dermis, counterparts of skin tension lines exist consisting of parallel orientation and straightening of thin collagen bundles and elastic fibers. These parallel bundles lie perpendicular to the direction of muscle contraction. The linearity of this tumor may therefore relate to stromal interaction with

relaxed with skin tension lines coupled with muscle contraction constraining growth in one direction [5]. Although, we are not so certain that this is a plausible explanation because the basaloid cells are generally more superficial.. Other authors have speculated on the possibility of a koebner phenomenon, although history of trauma was present only in three out of 48 cases. A few cases have also been reported on old surgical scars and sites of previous radiotherapy [7]. Enough evidence exists to implicate trauma and radiation as causative factors. Excision is the treatment of choice. In treating LBCC it is essential to resect the lesion carefully to prevent tumor recurrence, bearing in mind that subclinical extension of tumor cells is more extensive than the clinical lesion [5]. It is possible that the linearity of the lesion may suggest a more rapid spread of tumor cells and hence may warrant a prompt biopsy or excision.

## Conclusion

LBCC is a distinct clinical morphological variant of BCC with the potential for wider sub clinical extension, but no cases of metastatic spread have been reported.

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