

Erythematous Indurated Plaque on the Chin in an Elderly Man

Clinical Findings

A 65-year-old man, farmer by occupation, presented with an asymptomatic, slowly progressing plaque on his chin for 9 months. His medical and family histories were non-contributory. Physical examination revealed a 3 × 3 cm erythematous, indurated, round plaque with central ulceration, crusting and rolled-out borders on the left side of the chin. Few telangiectasias were present on the margins of the lesion [Figure 1a]. No regional lymphadenopathy was noted. The differential diagnoses considered were nodular basal cell carcinoma (BCC), squamous cell carcinoma (SCC), keratoacanthoma, microcystic adnexal carcinoma (MAC), cutaneous leishmaniasis and fixed cutaneous sporotrichosis. The dermatoscopic evaluation showed central ulceration, arborizing vessels, shiny white blotches, and few light brown areas [Figure 1b]. A punch biopsy specimen was obtained and sent for histopathological evaluation.

Histopathological Findings

Histopathological examination showed atrophic epidermis with focal ulceration. Dermis showed the presence of a tumor originating from the basal epidermis. The tumor was composed of basaloid cells, infiltrating as thin elongated cords and islands splaying the dermal collagen bundles. Most of these islands and cords displayed prominent peripheral palisading. Individual tumor cells had hyperchromatic nuclei and scant cytoplasm. At places, peritumoral clefting was seen, though it was not prominent [Figure 2a and b]. Perimuscular and focal perineural invasion were noted [Figure 2c]. A computed tomography scan of the chest and abdomen was unremarkable.

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Diagnosis

Infiltrative basal cell carcinoma.

Discussion

Though BCC is the most common malignant cutaneous neoplasm in the Western population, it is less common than squamous cell carcinoma in dark-skinned Indian patients. Histopathological subtypes of BCC are varied, ranging from less aggressive forms like nodular and superficial to those with more aggressive behaviour, such as infiltrative, micronodular and basosquamous.^[1] Infiltrative type comprises 7.4% to 15.2% of all BCCs and is locally invasive.^[2]

Infiltrative BCC presents as an ill-defined flat, indurated whitish plaque, which frequently shows ulceration. It is commonly distributed on the face and upper trunk. Dermoscopy reveals arborizing vessels, multiple erosions, white areas, and multiple blue-grey globules. Dermoscopic findings in our case helped us to narrow down our diagnosis to most likely BCC as favored by the presence of central ulceration, arborizing vessels and shiny white blotches. SCC was largely ruled out based on the absence of keratin/scales, white circles, hairpin, and linear-irregular vessels. Further, as whitish clods and linear vessels were not seen in our patient, MAC was also considered unlikely.

Histopathology of infiltrative BCC demonstrates a poorly circumscribed tumor with cords and thin long strands of basaloid cells that penetrate deeply between collagen fibers. Connection to the overlying epidermis, peripheral palisading, and retraction clefts are variable findings.^[3] It exhibits dispersed rather than expansile growth pattern, with wider and deeper extensions than clinically visible as compared to nodular BCC.^[3]

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Access this article online

Website: www.idoj.in

DOI: 10.4103/idoj.IDOJ_549_19

Quick Response Code:



How to cite this article: Mehrotra K, Khullar G, Chanana C, Agrawal M. Erythematous indurated plaque on the chin in an elderly man. Indian Dermatol Online J 2020;4:667-9.

Received: 10-Dec-2019. **Revised:** 14-Mar-2020.

Accepted: 08-Apr-2020. **Published:** 13-Jul-2020.

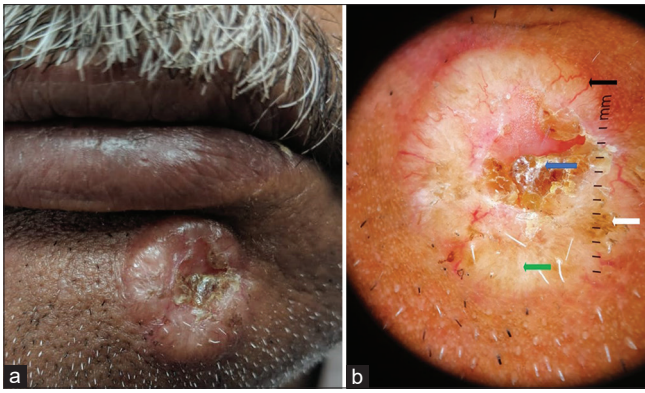


Figure 1: (a) Erythematous indurated plaque of size 3 × 3 cm with central ulceration and telangiectasias on the margins. (b) Dermoscopy showing central ulceration (blue arrow), arborizing vessels (black arrow), shiny white blotches (green arrow) and few light brown areas (white arrow) (DermLite 4, original magnification ×10)

Among other differential diagnoses considered clinically, SCC was ruled out based on the absence of nests of squamous epithelial cells arising from keratinocytes and extending into the dermis with keratin pearl formation. Keratoacanthoma is characterized by exo-endophytic growth with invaginating well-differentiated keratinizing squamous epithelium on the sides and bottom of the lesion. The center shows a keratin-filled crater with lipping of the surrounding edges. Keratinocytes are large and have eosinophilic glassy cytoplasm. Atypia and mitosis are usually absent. The dermis contains dense infiltrate of eosinophils and neutrophils. MAC is a deeply infiltrative tumor with keratin horn cysts, nests of basaloid cells in the upper dermis, and eosinophilic secretion in tadpole-shaped ducts in the deeper dermis with surrounding sclerotic stroma. Leishmaniasis shows granulomatous infiltrate with plasma cells and the presence of intracellular parasites. In fixed cutaneous sporotrichosis, there is pseudoepitheliomatous hyperplasia along with suppurative granulomas in the dermis. Yeast forms may be demonstrated.

Histologically, desmoplastic trichoepithelioma may be considered as a differential diagnosis, however, absence of features like keratinous cysts, hair papillae-like structures or abortive hair follicles, and dense fibrous stroma ruled out this possibility.

Mohs micrographic surgery is the treatment of choice for facial BCCs with infiltrative histology. Though a demanding technique, it provides an accurate histological assessment of tumor margins.^[4] Positive surgical margins and subsequent tumor recurrence are reported to be highest for the infiltrative variant.^[2] Factors associated with increased risk of recurrence of BCC include the site (central face, nose, chin), infiltrative pattern, size more than 1 cm, poorly defined borders, perineural invasion, immunosuppression, and history of previous irradiation.^[5] There are anecdotal reports of the use of medical therapies in infiltrative BCC such as topical imiquimod 5% cream^[4] and oral vismodegib.^[1] Pulmonary metastases have been reported in infiltrative BCC.^[6]

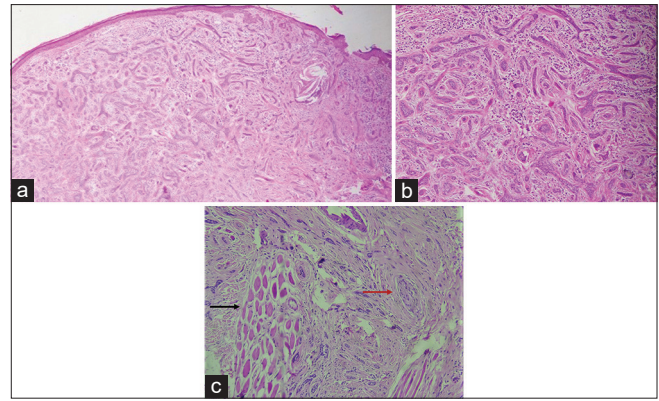


Figure 2: (a) Scanner view showing an atrophic epidermis with small nests arising from the epidermis focally, along with thin cords of basaloid cells dispersed throughout the dermis (hematoxylin-eosin, ×40). (b) Higher magnification showing strands of basaloid cells permeating through the collagen fibers. At some places, retraction spaces between the tumor cords and stroma are seen. The tumor cells show peripheral palisading, hyperchromatic nuclei and scanty cytoplasm (hematoxylin-eosin, ×100). (c) Strands of medium-sized basaloid cells infiltrating as islands and cords. Few entrapped skeletal muscle fibers (black arrow) and nerve twigs (red arrow) are seen in the deep dermis (hematoxylin-eosin, ×400)

We referred our patient to Plastic surgery, where wide local excision with 0.5 cm disease-free margin and Limberg flap was performed. The excised specimen showed features of infiltrative BCC and the tumor margins were uninvolved. Our patient had no evidence of local recurrence or metastasis after 1 year of follow-up and has been advised regular examination.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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