Clinical Findings

A 38-year-old man, hailing from Himachal Pradesh, presented with a mildly itchy plaque of 3 months duration on the shin of the right leg. The lesions started as small, erythematous papules which gradually increased in size and coalesced to form a bigger plaque with overlying yellowish-brown crusting. No history of local trauma was recollected. He was not a diabetic. On examination, a well-defined, erythematous plaque with yellowish crusting and few scattered, pin-point hemorrhagic areas were present on the pretibial area of the right leg [Figure 1]. There was no inguinal lymphadenopathy or lesions elsewhere on the body.

Histological Findings

Skin biopsy from the plaque revealed parakeratosis, acanthosis with full thickness dysplasia, loss of polarity, and increased mitosis; the dysplasia also involving the epidermal portion of eccrine duct and hair follicle [Figures 2-4]. Upper dermis showed dense lymphomononuclear infiltrate without evidence of invasion, granulomatous inflammation, or neutrophilic infiltrate. Results of special stains for microorganisms including periodic acid Schiff for fungus were negative.

Tissue culture did not reveal any growth. Routine hematological investigations were within normal limits, while enzyme-linked immunosorbent assay for human immunodeficiency virus was non-reactive.

What is your diagnosis?

A. Superficial granulomatous pyoderma gangrenosum
B. Chromoblastomycosis
C. Bowen’s disease
D. Blastomycosis

Discussion

First described by John Bowen in 1912, Bowen’s disease is a type of squamous cell carcinoma in situ, although a small proportion of cases can show invasive growth.[1] Several etiological factors of Bowen’s disease have been reported, such as chronic sun exposure, arsenic exposure, immunosuppression, human papilloma virus, ionizing radiation, among others. It occurs usually in adults and commonly presents as a well-defined, erythematous, scaly or crusted plaque varying in size from a few millimetres to several centimetres. Rare variants include psoriasiform, verrucous, hypertrophic, atrophic, and pigmented types.[2] Lesions are usually solitary, although multiple lesions can occur in 10–20% of patients. The commonly involved sites are the trunk, flexures, the perianal, subungual, and genital regions. Histologically, Bowen’s disease is characterized by full thickness dysplasia of the epidermis. There is complete loss of polarity, with mitosis seen away from the basal layer. It can be differentiated from actinic keratosis by the fact that dysplasia usually involves the epidermal portion of hair follicles and eccrine ducts in the former. Though usually persistent or progressive, partial spontaneous regression can occasionally occur.

The common differential diagnoses for such a crusted plaque on the leg, as in the index case, include subcutaneous fungal infections like chromoblastomycosis, blastomycosis, granulomatous variant of pyoderma gangrenosum, among others. Although clinical differentiation among these entities is difficult, subtle clinical clues are of immense value. The presence of multiple hemorrhagic dots signifying fungal colonies on a crusted nodulo-plaque
lesion was a pointer toward chromoblastomycosis, although the lack of a hyperkeratotic or verrucous nature of the lesion was against it. Superficial granulomatous pyoderma gangrenosum (SPG), a variant of pyoderma gangrenosum, typically presents as a single, superficial, granulomatous ulcer with an elevated edge. Associated trauma could support pyoderma gangrenosum in the context of pathergy. Blastomycosis is a sub-acute or chronic, deep mycosis caused by *Blastomyces dermatitidis*. It primarily affects the lungs; sometimes affecting the skin, bones, central nervous system, and genitourinary system, among other sites. Primary cutaneous form is very rare and usually follows local trauma, presenting as an erythematous, indurated area, developing into a chancre with associated lymphangitis and lymphadenopathy. Constitutional symptoms may be present.

Blastomycosis-like pyoderma was also considered among the differentials but was ruled out due to absence of pustules and negative culture findings.

Histological examination of skin biopsy in these entities often reveals clues aiding in their differentiation. In chromoblastomycosis or blastomycosis, there is presence of epithelioid cell granulomas in the dermis, with central neutrophilic collection, producing suppurative granulomas. There is variable acanthosis of the overlying epidermis; however, dysplasia is never seen. Special stains for fungus such as PAS and Grocott methenamine silver stain highlight the fungal yeast forms. SPG is histologically characterized by presence of neutrophilic collection in the dermis admixed with variable degree of lymphocytes, plasma cells, and histiocytes. There may be secondary vasculitis. Epidermal dysplasia is absent in SPG.

Our patient presented with an unusual clinical presentation of Bowen’s disease that closely mimicked that of...
chromoblastomycosis and superficial pyoderma gangrenosum. Histology played a crucial part in clinching the diagnosis.

**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.

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Nil.

**Conflicts of interest**

There are no conflicts of interest.

**Diagnosis**

C. Bowen’s disease.

**References**

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