A 56-year-old female presenting for a routine skin check complained of pruritus in her gluteal crease near the rectum. Examination of the area revealed a 2.5cm x 3.0cm melanocytic macular lesion with irregular borders without scale (Figure 1). The patient had no personal or family history of skin cancer but did report a history of tanning bed use.

A deep shave biopsy of the lesion showed hyperkeratosis and parakeratosis with epidermal hyperplasia. There was increased cellularity with loss of maturation sequence present in the epidermis. Cytologically atypical keratinocytes extended through the full thickness of the epidermis, and mitotic figures were appreciated. There was an increase of melanin pigment throughout the lesion. There was no evidence of invasive neoplasm (Figure 2A-2B). Immunohistochemical stains for Melan-A and MITF revealed scattered melanocytes within the lesion without evidence of melanocytic proliferation (Figure 2C-2D).

**PIGMENTED BOWEN’S DISEASE IN REVIEW**

These histological findings were consistent with melanocyte colonization of squamous cell carcinoma (SCC) in situ or pigmented Bowen’s disease (BD). Pigmented BD is an extremely rare form of SCC in situ, making up less than two percent of cases. Pigmented BD is most commonly seen in sun-protected areas of patients with higher Fitzpatrick skin types, although it can also be seen in patients with lower Fitzpatrick skin types and in areas of ultraviolet (UV) exposure, as in our patient. Cases have also been reported in the conjunctiva, oral mucosa, and under the nails. Lesions typically present as slow-growing, well-defined pigmented plaques with scaly, verrucous, velvety, or flat surfaces.

Factors involved in the development of BD include UV radiation exposure, ionizing radiation, human papillomavirus infection, arsenic exposure, and trauma. Factors that contribute to pigmentation in some instances, however, remain unclear. One hypothesis is that melanocytes arising from stem cells in hair matrices or from neural crest cells colonize these lesions, resulting in hyperpigmentation. It has also been proposed that the release of cytokines from atypical keratinocytes stimulates an increased production of melanosomes and melanocytes. Some cases of pigmented BD and pigmented SCC have been observed overlapping with solar lentigines and seborrheic keratoses, so it has been suggested that the pigmentation could be attributed to their origination from these benign hyperpigmented lesions.

Pigmented BD is difficult to distinguish from other pigmented neoplasms with physical examination alone. Some unique dermoscopic features of pigmented SCC have been described, including presence of vessels and brown-gray dots arranged linearly along the periphery of the lesion. On histology, pigmented SCC is characterized by melanin pigment retention inside atypical keratinocytes plus increased atypical dendritic melanocytes without atypia of melanosomes. It is important to differentiate pigmented BD from other histologically similar melanocytic lesions, including melanoma, pigmented seborrheic keratosis, melanoacanthoma, pigmented pilomatricoma, pigmented actinic keratosis, pigmented BCC, and squamo-melanocytic tumors.

In general, those with Bowen’s disease tend to have good outcomes due to the tendencies for slow growth and responsiveness to treatment. Pigmented BD is treated with the same methods as non-pigmented BD. Topical treatment options include 5-fluorouracil and imiquimod. Surgical interventions include excision and Mohs micrographic surgery for lesions in...
cosmetically sensitive areas. Lastly, destructive therapies include cryotherapy and photodynamic therapy. There is little evidence demonstrating superiority of one treatment over another, however, it has been suggested that photodynamic therapy has minimal scarring compared to other methods. Although it is associated with more scarring, cryotherapy is a favorable option for patients with multiple lesions due to simplicity, availability, and lower associated cost.

The authors have no conflicts of interest to declare.

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