A rare case of pigmented Bowen disease of the nail fold

Sushmita Pradhan, Si-Liang Xue

To the Editor: Bowen disease (BD) is a squamous cell carcinoma in situ that can progress into invasive carcinoma. Pigmented BD is a rare variant of squamous cell carcinoma in situ that can be diagnosed pathologically. It is usually characterized by slow-growing, well-defined, and non-uniform hyperpigmented plaque. It is also characterized by the increased melanin pigment in the epidermis or papillary dermis in addition to the alteration of BD. In a study, 7 (1.67%) of 420 BD cases were pigmented. Although the exact underlying mechanism of pigmented BD is unclear, pigmentation is due to the presence of an increased number of melanocytic hyperplasia by hypertrophic dendritic processes dispersed through the tumor. Pigmented BD with no scaling and keratosis indicates well-differentiated stages of atypical keratinocytes developing melanin. Later atypical keratinocytes result in loss of pigmentation, keratosis, and scaling. Herein, we present a rare case of pigmented BD on the proximal nail fold.

A 29-year-old Chinese woman presented with a 4-year history of an increasing brown-black uniformly pigmented patch on the proximal nail fold of the left fourth finger [Figure 1A]. She denied the previous history of trauma, wart, or tumor. Immunohistochemistry for human papillomavirus (HPV) antigen, carcinoembryonic antigen, HMB45, epithelial membrane antigen, cytokeratin (CK)8/18, S100 were negative; immunostains for P53, CK5/6, and some parts of P16 were positive and Ki-67 (MIB-1) was 40% positive. Dermatologic examination revealed a slow-growing brown-black pigmented patch measuring approximately 2.0 cm × 1.5 cm with a normal surface in the lateral side of the proximal nail fold, with neither color modification nor longitudinal melanonychia on the nail plate. Complete excision with a 0.3-cm margin around the lesion was performed. Histopathologic examination of the specimen revealed the presence of hyperkeratosis, para-keratosis, dyskeratotic cells, apoptotic keratinocytes with irregularly arranged tumor cells with atypical nuclei [Figure 1B]. Pigmented BD of the proximal nail fold was confirmed. The second phase of healing following complete excision allowed the wound to close and heal. There has been no recurrence over an 11-month follow-up period.

In the present case, we presumed the etiology of the pigmented patch was idiopathic as the patient had no history of sun, arsenic exposure, virus/HPV infection, trauma, or radiation. It is reported that high-risk mucosal HPVs play an important role in the development of BD in the periungual region. Although HPV is highly detected in digital BD, this case demonstrated no symptoms or signs of HPV infection. It should be differentiated from malignant melanoma by micro-Hutchinson sign, melanonychia, and immunohistochemical staining.

The case is noteworthy for its unusual pigmented lesion, rare location in proximal nail fold, negative HPV in digital BD, and idiopathic etiology rarely reported in a young Chinese individual. The presence of a uniformly pigmented patch in the present case could help us prompt our understanding for a thorough physical examination and biopsy as squamous cell carcinoma is highly invasive. Therefore, timely recognition around the nail fold may prevent delayed diagnosis and fatal metastasis.

Declaration of patient consent

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

Conflicts of interest

None.

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