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Research Letter

Porokeratoma treated with topical 5% 5-fluorouracil cream

What is known about this subject in regard to women and their families?

- Porokeratoma is a rare lesion with distinct pathologic features that make diagnosis challenging.
- Porokeratoma has historically been treated with excision.
- In patients who are cosmetically sensitive, particularly women, excision may not be a desirable treatment option.

What is new from this article as messages for women and their families?

- Porokeratoma can be successfully treated with topical 5% 5-fluorouracil cream.
- Topical 5% 5-fluorouracil is a safe and practical alternative to surgical intervention, especially in patients who are cosmetically sensitive. It is also useful in sites such as the hands, where excision can compromise daily function and occupational activities.

Dear Editors,

Porokeratoma is a rare diagnosis consisting of a solitary tumor-like lesion with distinct pathologic features (Walsh et al., 2007). Porokeratomas are often difficult to diagnose and have been most reliably treated with excision and less reliably treated with cryotherapy and laser therapy. Acitretin has been found to be effective as a combination therapy with multiple lesions (Batalla et al., 2013; Kanitakis et al., 2009; Takiguchi et al., 2010; Walsh et al., 2007; Xu et al., 2020). We describe the first case of a porokeratoma successfully treated with topical 5% 5-fluorouracil (5-FU) cream.

A 65-year-old woman presented with a solitary, tender, enlarging lesion on her left hand over several months' duration. She had no personal or family history of porokeratosis or history of immunosuppression. Physical examination revealed a 1.7×1.4 cm pink scaly plaque with a hyperkeratotic border on the left fourth metacarpal (Fig. 1A). Shave biopsy revealed a well-demarcated lesion with papillated to verrucous epidermal hyperplasia. Broad vertical tiers of parakeratosis compatible with cornoid lamellae were present in the stratum corneum, beneath which were dyskeratotic cells in the epidermis. In the upper dermis, there was a perivascular and interstitial chronic inflammatory infiltrate composed of lymphocytes and histiocytes (Figs. 2A and B). These findings were compatible with a diagnosis of porokeratoma.

The patient was offered an excision given that the lesion was symptomatic and interfered with her occupation as an esthetician. Due to concerns that surgery would result in loss of mobility and dexterity, as well as reduced cosmesis, the patient declined and requested a less-invasive treatment. A decision was made to trial topical 5-FU.

The patient applied 5-FU twice daily to the lesion for 7 weeks. Application consisted of 2-, 3-, and 2-week treatment courses, each followed by a 2-week holiday for epidermal healing. She had a robust but tolerable inflammatory response with no adverse effects. Post-application redness and scaling diminished with each treatment course, as did lesion tenderness and size (Figs. 1A–C). The lesion was completely resolved at the 13-week follow-up, with no recurrence 2.5 years later (Figs. 1D and E).

Porokeratoma presents as a solitary, hyperkeratotic papule or nodule in patients with no history of porokeratosis. Histologically, the epidermis of a porokeratoma is acanthotic without central atrophy. The cornoid lamellae are embedded throughout the thickened stratum corneum and not just at the periphery of the lesion, as typically seen in porokeratosis (Kanitakis et al., 2009; Walsh et al., 2007). Additionally, porokeratosis has been associated with squamous cell carcinoma. Although there are no documented cases of malignant transformation in porokeratoma, given its similarity to porokeratosis, treatment is recommended (Batalla et al., 2013; Kanitakis et al., 2009; Takiguchi et al., 2010; Xu et al., 2020).

Topical 5-FU inhibits thymidylate synthase and induces apoptosis in cells with a high mitotic rate. It is most commonly used in the treatment of actinic keratosis but has been used off-label for porokeratosis. Considerations of 5-FU treatment were discussed prior to initiation and included local skin irritation and length of treatment. Although erythema and scaling occurred, these were expected, limited to the treated area, and resolved within the appropriate time course. Our patient was satisfied with this conservative, nonsurgical approach, because it did not interfere with her occupation or daily activities. We are hopeful that this case will alert providers to 5-FU as a safe, noninvasive, and durable treatment option for porokeratoma.

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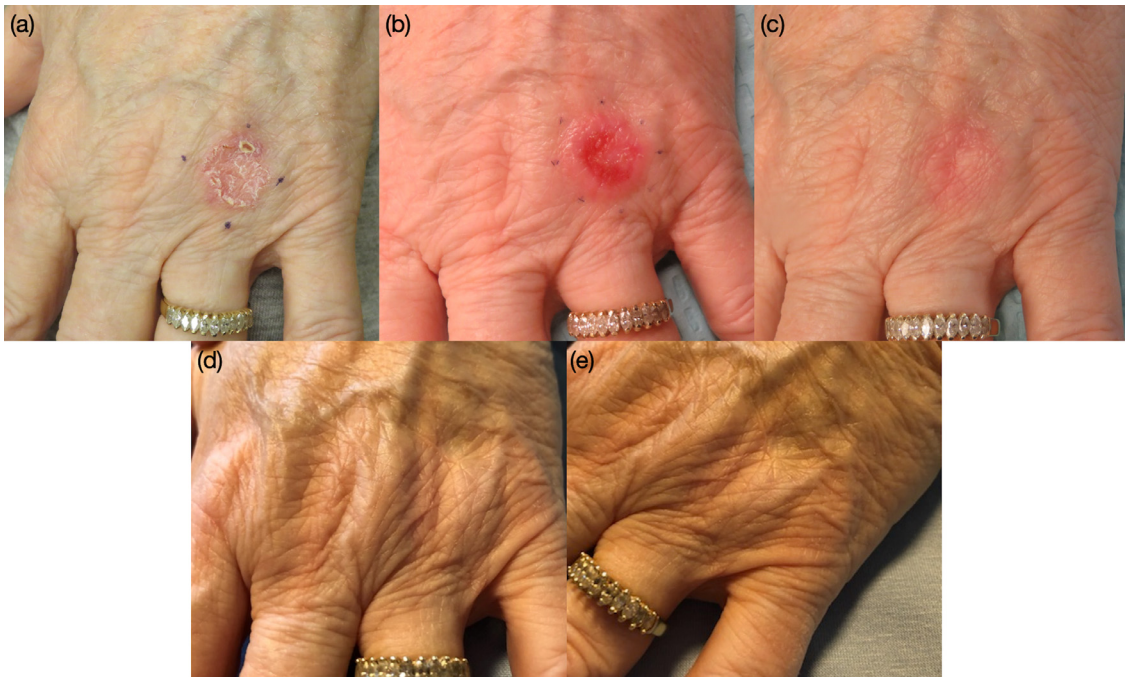

Fig. 1. Clinical progression of the porokeratoma. (a) Clinical appearance prior to initiation of 5-fluorouracil (5-FU), (b) 4 weeks after initiation of 5-FU, (c) 13 weeks after initiation of 5-FU with resolving erythema and lesion resolution, and (d, e) 2.5 years after 5-FU with no recurrence of the lesion.

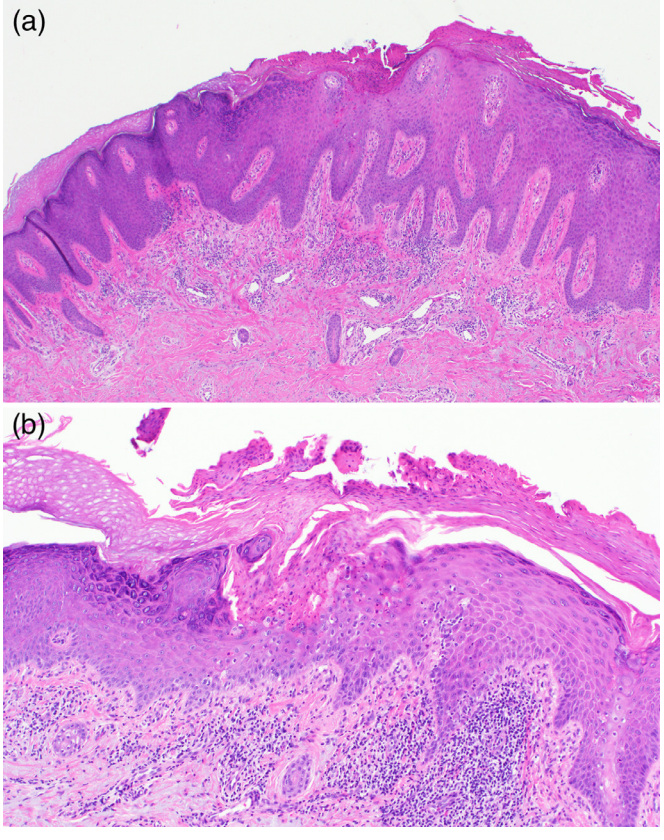

Fig. 2. Histopathology of the porokeratoma. (a) At low magnification, there is hyperkeratosis and parakeratosis, epidermal hyperplasia, and a superficial perivascular lymphohistiocytic infiltrate (hematoxylin-eosin stain; original magnification × 40). (b) High-power view showing cornoid lamellae (hematoxylin-eosin stain; original magnification × 100).

Conflict of Interest

None.

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