

# Keratosis Punctata of the Instep

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*We present a case of keratosis punctata involving the instep of both feet in addition to palmar and plantar creases, a finding not previously reported to our knowledge. We also discuss a closely related entity, keratosis punctata palmaris et plantaris (KPPP), and why we believe our case does not simply represent a variant of keratosis punctata of the palmar creases (KPPC).*

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**K**eratosis punctata of the palmar creases (KPPC) is a common condition, also referred to as keratotic pits of the palmar creases, punctuate keratosis of the palmar creases, keratoderma punctata, hyperkeratosis penetrans, lenticular atrophica of the palmar creases, and hyperkeratosis punctata of the palmar creases. It has been suggested that this condition occurs solely in the palmar creases<sup>1</sup> and was originally believed to be a variant of Kyrle disease.<sup>2</sup> Some confusion exists between KPPC and keratosis punctata palmaris et plantaris (KPPP). The primary lesions of KPPC are discrete, sharply marginated, hyperkeratotic, 1- to 5-mm in diameter, conically shaped depressions that are confined to the flexural creases of the palms. The primary lesion of KPPP is a dome-shaped, yellow-to-flesh-colored, 1- to 3-mm in diameter, scaling papule distributed over the entire palmar surface, ventral wrist, medial aspects of the

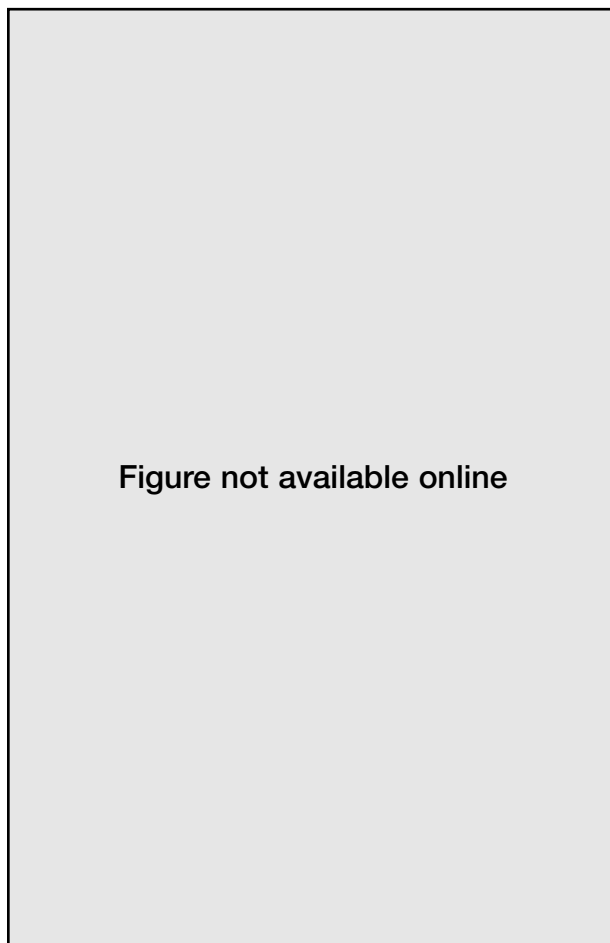


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**Figure 1.** Keratotic pits in the palmar and plantar creases.

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feet, and, less commonly, soles of the feet.<sup>3</sup> Small pits remain after the removal of the hyperkeratotic plugs and will eventually re-form.<sup>1,4</sup> The 2 conditions may occur concurrently.<sup>5,6</sup>

## Case Report

A 39-year-old black woman presented to the dermatology clinic with a lifelong history of rough spiny lesions on her palms and soles. Physical examination revealed round, conical, keratotic pits in the palmar and plantar creases (Figure 1). Pits also were noted on the medial plantar surfaces, where

they were not all localized to the plantar creases (Figure 2). The patient reported that her father had similar lesions in the same distribution. No treatment had been attempted. A 12% ammonium lactate lotion was prescribed, but at follow-up, the patient noted only mild improvement.

### Comment

African American men are affected most frequently with both KPPC and KPPP, with a prevalence of 1.9% to 3.1% and 11%, respectively.<sup>1,3</sup> Age of onset for KPPC is generally between 15 and 40 years. Although KPPP may also present as early as 15 years of age, the range at presentation extends to 70 years. Lesions of KPPC are asymptomatic and tend to be multiple. They may, however, be aggravated by friction, becoming verrucoid or surrounded by calluses. Increase in size and number of lesions may be noted, but they do not coalesce. Pain and tenderness may occur in some patients and may be severe enough to necessitate surgical treatment. Keratolytics and topical retinoids provide only minimal improvement.<sup>1,5</sup>

Both conditions may be caused by an abnormal hyperproliferative response in genetically predisposed people, possibly induced by trauma,<sup>1</sup> and may represent an abnormal variant of callus formation. An autosomal-dominant transmission pattern has been suggested for both KPPC and KPPP. Histologically, both are similar, with the most notable difference being that KPPP characteristically has a papular appearance, while KPPC demonstrates an epidermal depression; both demonstrate compact hyperkeratosis without parakeratosis and have a variable granular layer, ranging from thinned to normal or mildly increased. KPPC has been associated with Dupuytren contractures, pterygium inversum unguis, dermatitis herpetiformis, and psoriasis.<sup>1</sup> In addition, KPPP is associated with a potential risk for developing lung and bladder malignancies.

The differential diagnosis for punctate hyperkeratoses of the palms and soles includes porokeratosis of Mibelli, punctate porokeratosis, acrokeratoelastoidosis, focal acral hyperkeratosis, palmar and plantar pits of the basal cell nevus syndrome, keratosis follicularis, other palmoplantar keratodermas, verruca, and arsenical keratoses.

In conclusion, the presenting lesions on the involved areas of our patient's palms and soles were punctate, supporting the diagnosis of KPPC; none of the lesions were papular. Although KPPC and KPPP may coexist, we believe that we have found



Figure 2. Conical pits both in and between plantar creases.

an unusual variant of KPPC involving the creases of the instep of both feet, in addition to the palmar and plantar creases.

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