

Pitted keratolysis

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Sir,

Punctate keratolysis (PK) manifests as small, superficial, pitted erosions on the weight-bearing areas of the foot. These lesions, which may appear yellow or brown, may occasionally secrete fluid and cause a mild burning sensation on the soles. Patients often cite foot odor and the unsightly appearance of the lesions as their primary concerns.

While PK is generally asymptomatic at the outset, discomfort and itching may develop later on. The condition is strongly associated with plantar hyperhidrosis, with males being more frequently affected than females, especially among individuals in professions that involve prolonged wearing of closed footwear. In this particular case, a thirty-year-old patient sought medical attention, albeit without presenting any symptoms beyond pain and itching, as PK frequently goes unnoticed by patients until incidentally detected during clinical examination [1-3].

A thirty-year-old patient presented with Sutton's nevus on the lateral region of the right neck. During the dermatological examination, a localized dermatosis was found on the plantar surface of the toe tip, consisting of rounded shallow pits, some with a map-like appearance (Figs. 1a and 1b).

The rest of the physical examination was within normal limits. There was no significant family or personal medical history. The patient had not noticed these lesions on the tiptoes, and it was during this visit that this dermatosis was observed.

Based on these clinical findings, a diagnosis of punctate keratolysis was made, and a 10% formaldehyde formula was prescribed twice daily for four weeks.

Punctate keratolysis (PK) is an infection that affects the feet, caused by various bacterial agents such as *Corynebacterium*, *Micrococcus*, *Dermatophilus*, etc., and typically results in small erosions on the soles [1].

It has been demonstrated that the prevalence of the disease is higher in the military personnel, athletes, industrial workers, teenagers, and young adults, undoubtedly linked to their activities. Punctate keratolysis is a common condition in clinical practice, with a prevalence estimated to be 1–2% in tropical areas and up to 13% among athletes [2].

Nevertheless, it is considered an underdiagnosed condition, due to both the lack of awareness and patients often mistaking it for fungal infections, as well as their failure to seek medical advice. Instead of seeking medical advice, many patients with bromhidrosis may be using antifungal and antiperspirant creams, or even ointments, which may exacerbate skin maceration [1,2].

Clinical manifestations consist of a characteristic triad: moisture, body odor associated with hyperhidrosis (bromhidrosis), and skin lesions on the soles of the feet, consisting of superficial circular hyperpigmented patches in the stratum corneum or small elongated erosions. Less frequently, patients may experience a sensation of heat, pain, or burning when walking. If left untreated, the humid environment along with lesions in the stratum corneum may promote superinfection by other infectious agents [2].

By conducting thorough patient interviews, physical examinations, and evaluations of footwear, the physician may accurately diagnose plantar punctate keratolysis. According to patient histories, the condition typically originates on the skin between the toes (rather than in the web space) before spreading to other

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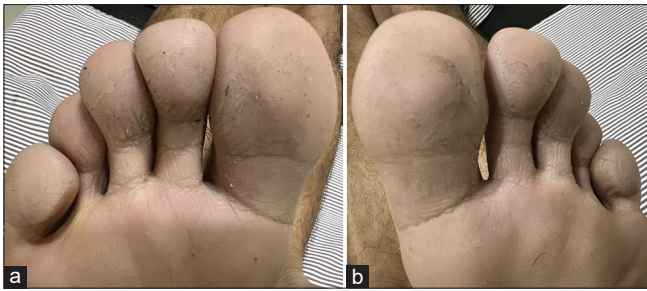


Figure 1: (a and b) Rounded, shallow pits, some with a map-like appearance.

areas of the feet and body. This location experiences significant friction, which may account for its initial involvement. While previous research has only reported one study documenting initial involvement in this area, our study identified other common initial sites, such as the ball of the foot, heel, and underside of the toes, all of which are areas subject to pressure and are traditionally associated with PK. It is widely recognized that the condition tends to worsen seasonally, with exacerbations commonly occurring during both summer and monsoon seasons [3,4].

Involvement sites on the skin of the sole included the areas between the toes, the undersides of the toes, the balls of the feet, the heels, the arches, and the spaces between the toes. Lesions on the sole skin were described as distinct, multiple, and crater-like pits varying in size from 1 mm to 1 cm, displaying a dirty, grayish appearance attributed to the production of a dark bacterial pigment, and occasionally merging to form patches in select areas. While the involvement of the sole skin is recognized, the occurrence of lesions on the skin between the toes and the toe web spaces is rarely documented. Additionally, erythematous and crusted lesions have not been previously reported in cases of PK [1,4].

The unpleasant odor is caused by sulfur compounds such as thiols, sulfides, and thioesters produced by these microorganisms. Factors that may increase susceptibility to the condition include excessive sweating, prolonged wearing of tight-fitting shoes, elevated skin pH, humid environments, poor foot hygiene, obesity, and immunodeficiency. While PK may affect individuals of any age, it is more commonly

observed in adolescents and young adults, with a higher prevalence among males likely due to their frequent use of tight-fitting footwear. Diagnosis primarily relies on clinical assessment. In cases where diagnosis is uncertain, diagnostic aids such as Wood's lamp examination, direct examination after skin scraping, cultures, and biopsy may be employed [1,5].

The primary treatments typically involve the use of topical antibiotics such as clindamycin, erythromycin, mupirocin, and fusidic acid applied once or twice daily. Additionally, benzoyl peroxide may be applied topically once or twice daily, as it exhibits both antimicrobial and keratolytic properties, proving effective in treatment. In cases where resistance is encountered, oral antibiotics such as clindamycin and erythromycin may be recommended [2,5].

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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