

Blanchable Erythematous Patches on the Fingers

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A 12-year-old boy presented with well-defined, blanchable, erythematous patches on the distal bilateral palmar aspects of the second to fifth fingers of 2 years' duration. The patient stated that he skateboarded daily throughout the year and swam once weekly in the summer months. Furthermore, the patient cited frequent contact with the rough undersurface of the skateboard and concrete road surfaces while skateboarding. He stated that the lesions were always present and worsened in the summer months. The lesions had an occasional burning sensation when they were more prominently erythematous, and the patient denied any pattern of exacerbation, numbness, bleeding, or itching. There was no notable family history or evidence of systemic disease.

WHAT'S THE DIAGNOSIS?

- erythema multiforme
- hand-foot-and-mouth disease
- irritant contact dermatitis
- punctate palmoplantar keratoderma
- scleroderma

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The authors report no conflict of interest.

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THE DIAGNOSIS: Irritant Contact Dermatitis

The diagnosis of irritant contact dermatitis secondary to skateboarding is similar to pool palms, a benign, self-limiting irritant contact dermatitis.¹ We propose that contact with concrete surfaces during skateboarding can lead to a presentation similar to pool palms. In our case, it was likely that the finger pulpitis noted in the physical examination was due to daily skateboarding rather than once-weekly swimming. Furthermore, the fingertip contact with concrete in pool palms is similar to the rough surface exposure on the skateboard.

Pool palms is more commonly reported in children due to their participation in sports and other activities with recent exposure to rough surfaces, most commonly the floor of swimming pools.² The condition resolves after eliminating exposures.³ The frequency and duration of exposure to rough surfaces in swimming pools leading to development of this condition is unknown.

There have been mixed reports on the pathogenesis of pool palms. Some literature supports the idea that it is a wet dermatitis, a combination of prolonged water contact, friction, chemicals, and microbes leading to a chronic dermatitis. This theory states that the primary factor influencing the development of erythematous patches on the fingers, palms, and soles is the hyperhydration of the corneal layer at these sites.⁴ A different theory attributes pool palms to a mechanical origin, such as repeated microtrauma from contact with the rough concrete surfaces of swimming pools.⁵ This theory further states that the chemicals in pool water, such as chlorine and sodium hypochlorite, rarely produce irritant, allergic, or urticarial reactions.³

Based on these theories, we hypothesized that fingertip pulpitis can result from activities other than swimming (eg, skateboarding). Our case supports the latter theory on fingertip pulpitis in pool palms being a result of frictional dermatitis rather than wet dermatitis because we attributed our patient's findings to contact with rough surfaces during skateboarding. Although the patient did swim, he only did so once weekly in the summer months, and the lesions had been persistent for 2 years consistently. His skateboarding hobby was more frequent, and he endorsed contact of the pads of the bilateral second to fifth fingers to the rough surfaces of the road and skateboard. The patient did not have lesions on the toes, further supporting the hypothesis that skateboarding led to the current presentation.

In children, hand-foot-and-mouth disease classically presents with oval-shaped, erythematous vesicles on the palmar surfaces of the hands and feet and generally is accompanied by fever and sore throat.⁶ Furthermore, unlike in our case, the viral exanthem usually would be present for up to 3 weeks and would not persist for more than 2 years. Erythema multiforme has an erythematous color and can present on the palms; however, the lesions have a classic targetoid appearance. It would be unique for erythema multiforme to present only on the fingertips rather than more diffusely on the palms or in other areas such as the face.⁷ Limited cutaneous sclerosis (scleroderma) initially can present with edematous pitted scars on the digital tips; however, with time the fingers will have a taut, white, shiny appearance that can develop into contractures and debilitating ulcerations.⁸ In our patient, the plaques did not advance to any further disease. Lastly, in contrast to our patient, punctate palmoplantar keratoderma presents as hyperkeratotic, firm, translucent, or opaque papules on the palms and soles. Over time, the papules can appear verrucous or callouslike.⁹ In our case, the plaques on the fingertips were erythematous rather than translucent or opaque papules.

Our case raises questions on whether prior reports of pool palms can be attributed to other activities involving contact with rough surfaces. More research is needed on the frequency and duration of rough surface exposure resulting in fingertip pulpitis.

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