

Picture Stories

Pitted keratolysis: An incidental finding in a 10 year old girl

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Introduction

Pitted keratolysis (PK) is a common bacterial infection of the skin, manifesting as non-inflammatory superficial pits¹. It mainly affects the stratum corneum of the plantar surface². It is common among athletes and people who wear occlusive foot wear for prolonged periods^{2,3,4}.

Case report

A 10 year old girl presented to the paediatric ward with a history of swelling and pain around the left ankle joint of 2 days duration. Clinically it was diagnosed as cellulitis of the overlying skin around the ankle joint and was treated with oral co-amoxiclav therapy with a prompt response. During assessment of the foot for a focus it was noted that she had thickened hyper-pigmented areas on both heels (Figures 1 and 2). These areas were non tender. Examination revealed the affected areas were full of small pits of different sizes and shapes.

Patient's mother stated that these lesions started to appear two months ago and gradually increased in size and were static in size over the last 2-3 weeks. She said that this was initiated during the rainy season where her daughter had to wear wet socks and shoes for a prolonged duration. Except for mild itching when she wore socks and shoes for a longer duration she was asymptomatic and had not sought any medical advice up to date. She was referred to the consultant dermatologist and was diagnosed as "pitted keratolysis" and was commenced on topical erythromycin and fusidic acid.

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Figure 1: Hyper-pigmented areas on both heels



Figure 2: Hyper-pigmented area on heel

Discussion

Pitted keratolysis is a common bacterial infection which mainly affects the stratum corneum of the plantar surface. This was first reported in a Ceylonese patient in 1910, by Castellani under the term "Keratoma plantare sulcatum"⁴. PK has a worldwide distribution and the prevalence does not differ significantly based on age, sex, or race⁴.

The chief bacterial agents responsible for PK include *Corynebacterium sp.*, *Micrococcus sedentarius*, and *Dermatophilus congolensis*^{2,4}. All these bacteria proliferate and produce proteinase which open small pits or craters by destroying the superficial skin layer⁴. These lesions are multiple, about 0.5 to 7 mm in diameter and appear mainly in the weight-bearing areas of the soles⁴.

KP is common in athletes and in individuals using occlusive footwear such as boots for long periods. Humidity aggravates it. The symptoms reported by affected persons are hyperhidrosis, foot odour and sometimes itching or burning while walking, but most cases are asymptomatic^{1,4}. Diagnosis is chiefly based on the unique clinical findings on the soles. The main differential diagnoses are tinea pedis and plantar warts⁴.

PK is effectively treated with topical antibiotics. Frequently used antibacterial agents are erythromycin solution or gel, 1% clindamycin hydrochloride solution, fusidic acid cream and mupirocin cream⁴. KP has an excellent prognosis and effective treatment clears both lesions and odour in 3-4 weeks. Various prophylactic measures are recommended for PK. These include avoiding use of occlusive footwear, using absorbent cotton socks, wearing open toed sandals and washing feet with soap and keeping them dry. In some it may help to reduce any associated hyperhidrosis with application of antiperspirant⁴.

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