

Quiz

Recurrent Pustular Lesions on Palms and Soles



Figure 1 and 2. Multiple pustules with erythematous-dark brown macules on palms and soles

A 50 years old male presented with multiple pustules on the palms and soles for the past 6 months. The lesions started as pustules over right palm. It was asymptomatic and healed spontaneously with leaving reddish area for a brief period. Similar lesions kept appearing and later on, both palms and soles were involved. However, lesions did not develop elsewhere. Rest of the history was largely non-contributory except for patient being a smoker. On examination, multiple tiny yellow to white pustules, usually 2–5 mm in size, were found on palms and soles. The lesions on palms were present mostly on the sides of the palms and thenar eminence (**Figures 1 and 2**). Few isolated lesions were seen on central palm;

however, distal palm and digits were largely uninvolved. On feet, the lesions were present largely on the borders i.e. the medial and lateral borders of the feet and back of the heel. Rest of the foot was largely not involved. There was striking symmetry of lesions on palms as well as soles. Few erythematous and brownish macular lesions were noted along with pustules. Rest of the mucocutaneous examination was unremarkable. Scalp, mucosa, elbows, knee and nails were lesion free. Gram's stain and KOH mount from lesion did not reveal any organism. The histopathology from the lesion is shown in **Figures 3 and 4**.

What is the diagnosis?

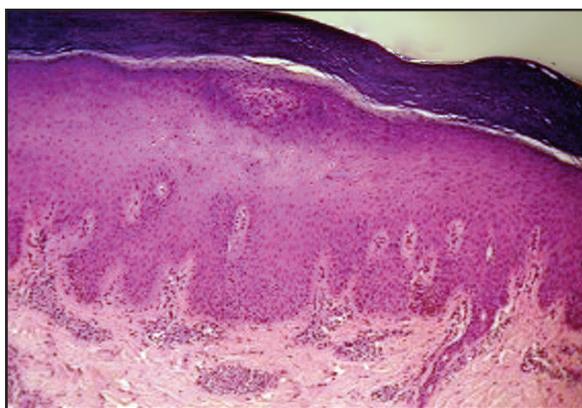


Figure 3. H&E stain X 100

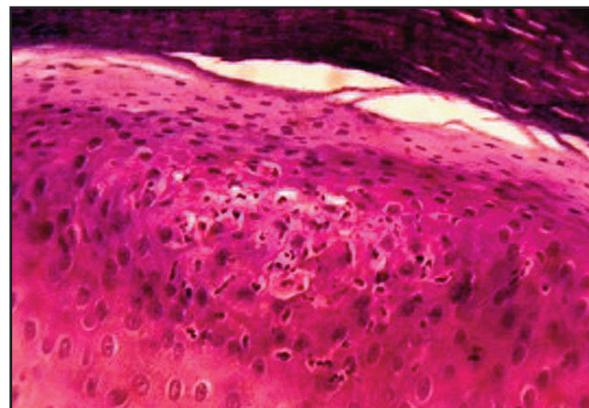


Figure 4. H&E stain X 400

Palmoplantar Pustulosis

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Abstract

Observations: A 50 years old male presented with multiple pustules on the palms and soles. Dermatologic examination revealed multiple tiny yellow to white pustules, usually 2–5 mm in size on palms and soles. The lesion was diagnosed as palmoplantar pustulosis according to clinicopathological findings.

Discussion

Pustulosis Palmaris et plantaris (also known as pustulosis of palms and soles,[1] persistent palmoplantar pustulosis, pustular psoriasis of the Barber type, and pustular psoriasis of the extremities) is a chronic recurrent pustular dermatosis localized on the palms and soles and is characterized histologically by intraepidermal vesicles filled with neutrophils [2, 3]. The incidence of palmoplantar pustulosis is very low as compared to psoriasis [2].

The relationship of palmoplantar pustulosis (PPP) to psoriasis is controversial [4, 5]. Presence of typical psoriasis elsewhere, or a personal or family history of psoriasis, or the future development of psoriasis vulgaris links it to psoriasis. However, most often, typical PPP often occurs in the absence of such evidences [4, 5, 6]. This independent occurrence and the absence of immunogenetic associations characteristic of psoriasis in such patients indicate that PPP may represent a separate and distinct entity. Three potential candidate genes for psoriasis susceptibility reside within PSORS1 locus on chromosome 6, HLACw6, HCR WWCC and the CD5N5. A recent immunogenetic study demonstrated categorically that PPP is not associated with any of the three candidate genes [2]. Furthermore, PPP is more common in females and unlike

psoriasis, there is no seasonal variation, and it tends to start at a later age [5].

It usually affects adults between the ages of 50 to 60 years. It rarely occurs in childhood and may run in families [1, 2]. The aetiology is largely unknown, but it has been found most commonly in smokers [7] and ex-smokers and it does not necessarily go away when the patient quits smoking [2]. An immunohistochemical study of biopsies of palmar skin revealed an altered staining pattern for nicotinic acetylcholine receptors in PPP—the authors suggested that an abnormal response to nicotine in patients with PPP resulted in inflammation [2, 8]. PPP usually starts without obvious provocation. Stress may also be a factor [7]. Septic foci have been blamed [1, 4, 7] but their removal may not cure the eruption. An association with sterile inflammation of joints, most commonly of anterior chest, has been observed [1, 2]. SAPHO syndrome, which consists of synovitis, acne, pustulosis, hyperostosis and osteitis and chronic recurrent multifocal osteomyelitis have been an established association [1, 2].

The eruptions of PPP involve both hands and feet usually, sometimes may be limited only to hands or feet. The thenar eminence is the most common affected site. However, pustules usually appear on the sides of the palms, soles, heel, insteps and the flexor

part (bending area) of the fingers and toes in crops. In severe cases, the whole palm and sole can be involved. Digital lesions are uncommon. A striking symmetry of the lesions on the hands or feet is very often noted [1, 2]. Sometimes, a solitary lesion persists for weeks or months before others appear. The evolution of lesion is very characteristic. It starts as tiny sterile pustules. Initially, the content is yellow in appearance and gradually turns brown. It heals spontaneously with crust formation or scaling. Removal of scale leaves a glazed dull-red or dark brown surface. Normally, pustules in all stages of evolution are seen and may be of diagnostic value. Sometimes, scaling may be so prominent that only redness and scaling are seen. It is largely asymptomatic. Itching is variable; more often the patient complains of 'burning' discomfort in the lesions [2, 3, 4, 5].

Vesicobullous tinea, pustular bacterid [3] and pompholyx are the most common differential diagnosis. Vesicobullous tinea is usually asymmetrical or unilateral. The toe clefts may be involved and it is seen commonly in hot weather. Microscopy and culture confirm the diagnosis. Pompholyx with secondary infection may have similar appearance but is more painful. There will be seasonal variation and it would not be associated with red-brown macules, so characteristic of PPP. Histopathology can be helpful in doubtful cases. Sometimes, it needs to be differentiated from chronic allergic contact dermatitis and dyshidrosiform bullous pemphigoid [1, 2, 3].

The histopathological changes are essentially psoriatic, but the central feature is a fully developed, large pustule within the epidermis, unilocular and full of neutrophils. There is some overlying parakeratosis. The acrosyringium is involved in the inflammation, and there are at times large numbers of eosinophils and mast cells present [2, 4].

The usual course is prolonged. The condition varies in severity and may persist for

many years. Sometimes spontaneous remission does occur but is more often temporary than permanent. It is very resistant to treatment [2]. Potent topical steroids under occlusion is the first line of therapy. Other agents used locally are tazarotene and anthralin. In resistant and severe cases, systemic therapy with acitretin, methotrexate, cyclosporine or biological agent may be required [2].

Our case presented with multiple tiny yellow coloured pustules interspersed with some older dried pustules that were dark brown in colour. The lesions were mostly on the palms and soles, especially over the thenar eminences and the instep of the feet. He was a chronic smoker by habit. The histopathology showed the presence of hyperkeratosis, parakeratosis and intraepidermal pustules containing plenty of neutrophils (Figure 3, 4) So, the case was diagnosed as PPP based on characteristic clinical presentation and histopathology.

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