Psoriasis of Hands and Feet (including Palmoplantar Pustulosis)

Synonyms: psoriasis palmoplantaris, psoriasis palmaris et plantaris

Psoriasis predominantly affecting the palms and soles takes two forms:

- Erythematous scaly plaques typical of psoriasis elsewhere in the body.
- More generalised thickening and scaling (keratoderma).

Palmoplantar pustulosis (PPP) is a chronic inflammatory skin condition. It is considered by some to be a variation of psoriasis and occurs in patients with other types of psoriasis\(^1\). However, the nature of the link with psoriasis is unclear and there are significant differences. Neuroendocrine dysfunction of the sweat glands has been implicated in the pathogenesis\(^2\). See the 'Palmoplantar pustulosis' section at the end of this article.

See also separate Psoriatic Nail Disease article.

Epidemiology

The prevalence of psoriasis has increased in the UK in recent years. It was 2.3% (2,297 cases per 100,000) in 1999 but 2.8% (2,815 per 100,000) in 2013\(^3\). There was, however, no associated increase in incidence. This suggested that patients with psoriasis were living longer, although reasons for this are unclear. A proportion of these patients, usually with psoriatic lesions elsewhere, will have psoriasis involving the feet and hands.

Visual appearance

Presentation

- Red scaly plaques.
- Hyperkeratotic areas.
- Central palm or weight-bearing areas of the soles.
- Well demarcated.
- Painful cracking and fissuring.

Differential diagnosis

- Hyperkeratotic eczema.
- Tinea pedis.
- Palmoplantar pustulosis (PPP) (see section below).

Management
Primary care management

- Classical psoriatic lesions can be treated with a vitamin D ointment (calcipotriol/Dovonex® or tacalcitol/Curatoderm®) or dithranol (Dithrocream®/Micanol®).
- In palm and sole psoriasis, both hyperkeratosis and inflammation are usually present and may require separate treatments:
  - Hyperkeratosis usually needs to be treated with a keratolytic agent such as 2% salicylic acid ointment BP.
  - This can be alternated morning and evening with a topical steroid (usually potent, due to the thick skin at this site)[1].

When to refer[4]

- Where there is diagnostic uncertainty.
- For further patient counselling and education.
- Where topical treatment has failed, or treatment has not been tolerated.
- Where there is significant physical, psychological, social or occupational difficulty.

Further treatments

Further treatment options in secondary care include low doses of oral retinoids with psoralen combined with ultraviolet A (PUVA) or UVB phototherapy, methotrexate, ciclosporin or acitretin. Calcineurin inhibitors such as tacrolimus or pimecrolimus and biological agents such as infliximab and alefacept have been used with some success[5].

Complications

Pain can restrict the use of hands or walking.

Prognosis

Psoriasis of the hands and feet tends to be persistent and, in some, quite resistant to treatment.

Palmoplantar pustulosis

The cause of PPP is unknown. It is probably autoimmune in origin as there is an association with other autoimmune diseases, particularly coeliac disease, thyroid disease and type 2 diabetes[1]. PPP was thought to be a localised form of pustular psoriasis but about 10-20% of patients with PPP have psoriasis elsewhere. It is therefore now considered that they are distinct conditions with different genetic backgrounds[1].

Epidemiology

The condition is rare in Europe but more common in the East[6]. It occurs much more commonly in smokers and ex-smokers. It may run in families and rarely occurs in childhood. Gluten sensitivity and tonsillar streptococcal infection have been implicated in some cases[7].

Presentation

PPP typically presents as multiple sterile pustules on the palms and soles (initially yellowish fading to brown macular pinpoint lesions).
Affected areas may become red, scaly and frequently painful. Eruptions of pustules occur unpredictably and may return repeatedly over years.

**Differential diagnosis**
- Infected eczema - less defined, white vesicles rather than pustules, swabs often grow *Staphylococcus aureus*.
- Acute pompholyx is an episodic form of eczema affecting the palms and soles with bullae formation, which frequently becomes infected.
- Tinea pedis - commonly unilateral or asymmetrical erythema, scaling and pustules. Toe clefts and nails are usually involved.
- Reiter's disease - gross palmar and plantar lesions may occur (keratoderma blennorrhagica) which are histologically indistinguishable from psoriasis. This also affects the mouth and penis.
- Acrodermatitis continua of Hallopeau (ACH): a rare indolent form of psoriasis with sterile pustular changes and dactylitis affecting the distal digits and nails [8].

**Primary care management**[1, 9]
Evidence-based treatment for PPP is contentious.

Those who claim that PPP is simply a variation of psoriasis believe that the condition should be managed as per the guidelines for psoriasis but there is no consensus on this[10]. Various treatments have been used but none is generally accepted as universally effective[7]. A Cochrane review highlighted methodological problems with the studies designed to differentiate between the efficacy of different approaches[11].

- Encourage general measures:
  - Good footwear made from natural fibres.
  - Avoidance of even minor trauma.
  - Waterproof dressings over fissured areas.
  - Resting the affected area where possible.

- Emollients are important:
  - Apply thick greasy emollients to soften skin and prevent fissures.
  - Soak in warm water with emulsifying ointment.
  - Use salicylic acid ointment or urea cream to peel dead skin.
  - Wash with soap substitutes.

- Potent topical steroid ointments - eg, clobetasol propionate - may be used twice daily for limited periods. High-potency steroids are required in order to penetrate the thick skin of the hands and feet. Occlusion with cling film or dressings can enhance penetration but should not be used for more than five days in a row.
  - Coal tar is messy but can be applied directly, often mixed into an ointment base.
  - Calcipotriol can be helpful - apply twice a day and do not cover.

**When to refer**[1]
- Referral is primarily for help with diagnosis and treatment, or if symptoms are particularly disabling.
- Palms and soles are difficult sites to treat and PPP can be resistant to treatment so specialist advice may be required.

**Further treatments**[12]
Further treatment options which dermatologists can use include:
- Systemic retinoids - for example, acitretin, arotinoid ethyl ester.
- PUVA treatment to hands and feet (sometimes combined with systemic retinoids).
- Methotrexate[1].
- Etanercept is sometimes used. A good response to a combination of etanercept and alitretinoin has been reported[13].
- Phototherapy and ciclosporin have also been found helpful.

**Complications**
- Pain from lesions and associated fissuring may be significant.
- Walking and standing for long periods can exacerbate lesions on the soles of the feet.
- Manual activity can be uncomfortable if the hands are affected.
- Occupational and functional disability secondary to above.
- Pustulotic arthropy-sosteitis (sterile inflammatory osteitis of the sternoclavicular region) is a rare but severe complication of palmar pustulosis[14].

**Prognosis**
The condition tends to be chronic and poorly responsive to treatment[1].

**Further reading & references**
- Psoriasis Palmoplantaris; DermIS (Dermatology Information System)
- Pustular Psoriasis of the Palms and Soles; DermIS (Dermatology Information System)
- Pustular Psoriasis; Psoriasis Association
1. **Palmoplantar Pustulosis**, DermNet NZ
4. **Psoriasis**, NICE CKS, November 2017 (UK access only)
10. Diagnosis and management of psoriasis and psoriatic arthritis in adults; Scottish Intercollegiate Guidelines Network - SIGN (October 2010)

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