Pompholyx

Synonyms: dyshidrotic eczema, cheiropompholyx or cheiropompholyx and dyshidrotic dermatitis (this implies that the condition is related to sweat glands but this association is unproven)

Pompholyx comes from the Greek word for bubble.

Epidemiology[^1]

This is a dermatitis or eczema of unknown aetiology, characterised by an itchy vesicular eruption of the hands, fingers and soles of the feet. It can be acute, recurrent or chronic and is difficult to treat effectively. It is more common in spring and summer and in countries with warmer climates. A Portuguese study found that pompholyx was the third most common type of hand eczema[^2]. A French study reported a female-to-male preponderance of 1.18:1 and a mean age of 35 years[^3].

Pathophysiology[^1]

The term dyshidrosis indicates a sweating abnormality but histology reveals no evidence of eccrine (sweat) gland involvement. Histologically, the vesicles are intra-epidermal with little or no inflammatory change. Hyperhidrosis is, however, an associated condition in 40% of patients and this could account for the confusion[^3].

Aetiology[^3]

One study proposed that the aetiology involved a complex immunological process which involved complement, myeloperoxidase (a lysosomal protein stored in azurophilic granules of the neutrophil) and T cells[^1]. There are a number of commonly identified aggravating factors such as emotional stress, allergic contact dermatitis and allergens such as chromate, neomycin or nickel. There is an association with atopy and tinea pedis but both pompholyx and tinea pedis are likely to occur with sweaty feet and causation is not proved. A genetic form has been identified[^4]. HIV infection and treatment of HIV-infected individuals with antiretroviral therapy (ART) have both been associated, as has intravenous immunoglobulin therapy[^5, 6].

Presentation[^7]
The condition may be acute, chronic or recurrent. 80% involve the hands, 12% the feet and 8% both areas:

- The affected areas are the centre of the palms or soles.
- It is usually symmetrical.
- After several hours of itching or burning in the hands, feet or both, the eruption develops. Tiny vesicles, about 1 or 2 mm in diameter, erupt, first along the lateral aspects of the fingers and then on the palms or soles.
- Palms and soles may be red and wet with perspiration.
- Later in the course there may be unroofed vesicles with inflamed bases, possibly accompanied by peeling or rings of scale or lichenification.
- Transverse furrows can develop on the nail when eruptions occur in the periungual area or nail matrix.
- Vesicles may break out in waves.
- The vesicles usually persist for three or four weeks and disappear spontaneously.

Differential diagnosis

- Pustular psoriasis.
- Fungal infection.
- Bacterial infection/bullous impetigo.
- Recurrent focal palmar peeling (or keratolysis exfoliative).
- Dysidrosiform bullous pemphigoid.
- Acropustulosis of infancy.
- Juvenile plantar dermatosis.
- Bullous pemphigoid.
- Linear IgA disease with (haemorrhagic) pompholyx.
- Contact dermatitis - allergic or irritant.
- Pemphigoid gestationis.
- Pemphigus vulgaris.
- Dyshidrosis-like variant of adult T-cell leukaemia/lymphoma.
- Pityriasis rubra pilaris.
- Epidermolysis bullosa.
- Subcorneal pustular dermatosis.
- Erythema multiforme.
- Contact urticaria syndrome.
- Fixed drug eruptions.
- Friction blisters.
- Herpes simplex.

Investigations

Investigations are not usually necessary, as the diagnosis can invariably be made clinically. However, in cases which do not respond to treatment, culture and sensitivity to exclude bacterial infection, punch biopsy to exclude fungal infection and patch testing for contact dermatitis should be considered. Serology for human T-cell lymphotropic virus type 1 (HTLV-1) should also be performed to rule out dyshidrosis-like variant of adult T-cell leukaemia/lymphoma.

Management

The condition is self-limiting but, as it can be intensely itchy, symptomatic treatment may be in order. In practice, many patients require a combination of treatments.

- Burow’s solution (10% aluminum acetate in a 1:40 dilution), is a drying soak that can be used if the lesions ooze.
- Large blisters can be drained under aseptic conditions.
- Antibiotics are only required if secondary infection occurs.
- Strong topical steroids to control itching, and cold compresses (eg, a 1:10,000 solution of potassium permanganate), are the usual first-line treatment. From a practical point of view, strong topical steroids work in the ‘active’ phase - as the blisters are developing. Once they have dried, skin emollients with occlusion (such as plastic gloves overnight) may be useful to prevent cracking of the skin.
- Second-line treatment may be oral steroids.
- Long-wave PUVA (= psoralen combined with long-wave ultraviolet A) treatment has been used.
Severe cases may be treated with methotrexate, azathioprine, mycophenolate mofetil or ciclosporin\(^{11,12}\).

If nickel sensitivity has been documented, a nickel chelator such as sulfiram (Antabuse\(^{©}\)) may be helpful\(^{13}\).

Aluminum chloride 20% and iontophoresis may help if hyperhidrosis is a problem.

Botulinum A toxin has been very helpful in some patients\(^{14}\).

Treatments currently undergoing evaluation include systemic alitretinoin (an endogenously occurring physiological vitamin A derivative)\(^{15}\), topical bexarotene, leukotriene receptor antagonists, leukotriene synthesis inhibitors, phosphodiesterase-4 inhibitors and monoclonal antibodies\(^{1}\).

The use of radiotherapy is also being explored in selected patients\(^{10}\).

**Complications**

Secondary bacterial infection may occur. Emotional stress may have aggravated the disease and now the disease aggravates the stress.

**Prognosis**

Most patients recover spontaneously in three to four weeks but some have a chronic and unremitting course.

**Further reading & references**


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