Blistering Conditions

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Blisters are an accumulation of fluid lying within the epidermis (intra-epidermal) or just below it (sub-epidermal).
Vesicles are small (less than 5mm) blisters, bullae are larger lesions.

They occur for a multitude of reasons;

- **Trauma**
- **Infection** – HSV, VZV, Bullous impetigo, Staphylococcal scalded skin syndrome
- **Drug induced**
- **Eczema-** pompholyxtype on palms and soles
- **Erythema Multiforme/ Stevens Johnson Syndrome/Toxic Epidermal Necrolysis**
- **Immunobullous disorders**- Bullous Pemphigoid, Pemphigus Vulgaris, Linear IgA disease, Pemphigoid Gestationis
- **Congenital disorders** – Epidermolysis Bullosa

When diagnosing a patient with a blistering skin condition think about the following;

- Age of patient
- Distribution and size of lesions
- History of skin condition
- Past medical history
- Systemic features

Consider performing bacterial and viral swabs if suspecting an infective cause
If bullae are tense, aspiration with a sterile needle allows the roof of the lesion to adhere to the underlying base. This can alleviate pain and improve healing time.
General supportive treatment would include washing with a bacteriostatic agent such as Dermol 500 lotion and application of copious bland emollients, such as 50:50 paraffin mix.

Infective causes

Herpes Simplex Virus – a common viral infection which usually presents with localised blistering. In patients with an impaired skin barrier it can cause more widespread complications. Eczema herpeticum is a severe condition which presents with multiple vesicles and erosions in a patient with pre-existing eczema. Patients often feel systemically unwell and may require admission for intravenous anti-viral treatment (acyclovir).
HSV infection can also be a trigger for the development of erythema multiforme.

Varicella Zoster Virus (chicken pox)– again a relatively common viral infection which tends to be more severe if caught in adulthood. Widespread vesicle are seen, some of which may be haemorrhagic. Patients who are immunosuppressed are at risk from disseminated primary varicella infection and CNS/lung complications.
Herpes Zoster (shingles) is due to reactivation of the dormant VZV on a sensory nerve root. Patients classically report pain occurring in one or two adjacent dermatomes followed by a blistering rash. In immunosuppressed patients a widespread multidermatomal blistering eruption can be seen with systemic complications.

Bullous Impetigo- certain strains of Staph.aureus produce an exfoliative exotoxin causing cleavage of the epidermal desmogleins. Patients present with blisters of varying sizes often on the face, trunk and extremities. They may have signs of more classic impetigo as well, yellow crusting and scale. Bacterial swabs should be taken from affected areas and also from the nose, axillae and groins. They respond quickly to appropriate antibiotics.

Staphylococcal scalded skin syndrome (SSSS) – this is caused by the release of epidermolytic toxins from strains of staphylococcus aureus. It generally affects young children.
Parents report fever, generalised malaise and then widespread erythema of the skin, similar to a burn. Later superficial flaccid blisters develop and desquamation occurs. The diagnosis is usually made clinically, occasionally a skin biopsy may be required to help differentiate from other conditions eg. TEN.
Swabs should be taken from the skin, nose, throat, axillae and groins. Family members should also be swabbed for staphylococcal carriage.
Patients generally require admission and treatment with intravenous antibiotics. Eroded areas of skin should be treated with a bland emollient such as 50:50 paraffin mix. The prognosis is generally good with treatment, however sepsis may develop.

Eczema, SJS/TEN- see relevant chapters.

Immunobullous disorders

Bullous Pemphigoid- this tends to affect middle aged or elderly patients, childhood bullous pemphigoid is very rare. It is due to antibodies attacking some components of the basement membrane causing the subepidermal blister.
Patients may present with an erythematous pruritic rash prior to the development of blisters. It may be localised or more generalised, some patients may have oral erosions. Blisters tend to be large (bullae) and may be filled with clear, cloudy or blood stained fluid.
To confirm the diagnosis a skin biopsy with immunofluorescence is normally performed. The circulating antibodies in blood serum can also be detected with indirect immunofluorescence.

If severe blistering is present patients may need admission.
Initial treatment is with oral steroids (0.5-1mg/kg/day) or if disease is more localised potent topical steroids eg.dermovate.
Long term patients may require immunosuppressive agents eg. Azathioprine, methotrexate, mycophenolate mofetil.

Pemphigus vulgaris – another rare auto immune blistering disorder. Patients tend to be middle-aged or elderly.
This condition commonly affects the mucous membranes; patients may report painful eyes, erosions in the mouth and on the genitalia. Skin lesions are thin walled flaccid bullae. These are easily ruptured leaving painful erosions.
Diagnosis usually requires a skin biopsy with immunofluorescence. The responsible antibodies attack desmoglein 3 which is responsible for binding the keratinocytes of the epidermis together.
To halt disease progression oral steroids are usually required at high doses (1mg/kg/day). Other immunosuppressive agents are then used to maintain disease control.

Other rare immunobullous conditions to consider are;
Linear IgA disease
Dermatitis Herpetiformis
Pemphigoid gestationis
For more information www.dermnetnz.org is a helpful website.