Bullous Pemphigoid

**What is bullous pemphigoid?**

Bullous pemphigoid is a subepidermal autoimmune blistering disease. “Bullous” means blistering and “pemphigoid” comes from the Greek word pemphix and means bubbles. Bullous pemphigoid is the commonest type of autoimmune blistering disease, with an incidence of 12.1 to 66 new cases per million per year.

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**What causes it?**

There are two main layers of the skin, the epidermis (the very top layer) and the dermis (the deep layer). The area between these layers is known as the basement membrane zone. Bullous pemphigoid occurs when cells of the body’s immune system produce proteins (autoantibodies) which attack and damage specific proteins of the basement membrane zone (known as BP180 and BP230), which are critical in attaching the top layer of skin cells (the epidermis) to the underlying layer (the dermis). If the basement membrane proteins are damaged, the top and bottom layers of the skin separate, causing blister formation.

The cause of the immune attack on the skin is unknown. It may occur several years after damage to the nervous system or muscle system although how these events are related is unknown.

**What does it look like?**

Bullous pemphigoid can occur at any age but it usually affects older individuals with onset in the late 70s. There have been rare cases reported in infants and children.

Bullous pemphigoid can look initially like dermatitis or urticaria (hives) with red itchy bumps and patches. Unlike hives, these patches do not move around or disappear. The condition may stay like this for months until blisters eventually start to form. The blisters are typically large, tense, fluid filled and very itchy. They occur most frequently on the skin of the body folds and trunk. There is typically no mucosal membrane involvement.
What other problems can occur with this condition?
Approximately half to one third of affected individuals also have neurological disease such as dementia, Parkinson’s disease and cerebrovascular disease.

Other possible associations include malignancy, psoriasis, primary diabetes mellitus, as well as neuroleptic and diuretic drug use.

How is it diagnosed?
As it often takes some time for the blisters to emerge, diagnosis may be delayed.

The following tests are usually required:
- **Skin biopsies** - biopsy of the edge of a blister for routine pathology; biopsy of skin close to a blister can be sent for direct immunofluorescence which looks for deposition of the autoantibodies in the skin.
- **Blood tests** - these test for autoantibodies in the blood.

How is it treated?
There is currently no cure for the condition. Treatments are personalised to the individual and directed towards reducing blister formation, relieving the pruritus (itchiness), promoting wound healing and minimising the side effects of treatment.

Individuals with mild disease
- **Potent topical corticosteroid**
Individuals with more aggressive disease

**Oral medications** are often required. These can include:

- **First-line treatment**
  - Oral prednisolone

- **Second-line treatments**
  - Topical immunomodulators (e.g. tacrolimus)
  - Tetracyclines
  - Dapsone
  - Azathioprine
  - Mycophenolate
  - Methotrexate
  - Intravenous immunoglobulin
  - Rituximab

**What is the likely outcome of this condition?**

Unfortunately, bullous pemphigoid has a one-year mortality rate of 20-40% which is approximately two to three times higher than the aged-matched normal population. Factors associated with a worse prognosis include: advanced age; more extensive disease; higher prednisolone dosage use; and the presence of other medical conditions.

This information has been written by Dr Cathy Zhao, Dr Belinda Welsh and Professor Dedee Murrell