Balo's Disease
Variants and Subtypes of Multiple Sclerosis

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Balo's disease is a rare progressive form of multiple sclerosis with a strong viral association that primarily affects young adults.

MS Variants

Several variants and subtypes of multiple sclerosis (MS) have been reported including Balo disease, Marburg multiple sclerosis and various syndromes such as optic neuritis, transverse myelitis, and acute disseminated encephalomyelitis.

Balo disease, which is also known as concentric sclerosis, encephalitis periaxialis concentrica, or leukoencephalitis periaxalis concentrica, is a rare progressive form or variant of multiple sclerosis. Although Balo disease usually develops in adults, primarily young adults, it can also occur as a variant of multiple sclerosis in children.

Symptoms

Symptoms in Balo disease are similar to symptoms in multiple sclerosis and include:

* Headache
* Gradual paralysis
* Seizures
* Involuntary muscle spasms
* Loss of cognitive function

Symptoms vary depending on the specific areas of the brain that are affected. Unlike symptoms in multiple sclerosis, which tend to wax and wane (relapsing-remitting disease), symptoms in Balo disease are usually rapidly progressive.

Disease Course

In multiple sclerosis the myelin sheath that surrounds and protects nerve fibers is destroyed or demyelinated. The oligodendrocyte cells that produce myelin are also destroyed. Balo disease is characterized by bands of intact myelin alternating with concentric rings of demyelinated nerve fibers that occur in various parts of the central nervous system.

Lesions in Balo disease belong to the MS lesion pattern III, which is known as distal oligodendrogliopathy. These lesions are found in the central nervous system white matter of the cerebral hemispheres, cerebellum, brainstem, spinal cord, and optic chiasm.
Symptoms may progress over a period ranging from several weeks to 2-3 years. Often, disability and death occur within months although recently there have been reports of a self-limiting form of Balo’s disease with some remission.

**Who Is Affected?**

Balo’s disease is most likely to occur in adults although people of all ages may be affected. Unlike multiple sclerosis, Balo’s disease is most common in Chinese and Philippino populations.

An association has been made with primary human herpesvirus 6 (HHV-6) infection, which causes a disease similar to that of infectious mononucleosis, and Balo disease. In one report, a 13-year old girl developed the large white matter lesions characteristic of Balo disease 4 days after a viral episode marked by fever and fatigue related to human herpesvirus 6 infection. In HHV-6 infection, severe neurological symptoms are known to occur with reactivation of latent virus. HHV-6 is suspected of causing subtype III of multiple sclerosis.

**Diagnosis**

Diagnosis is made upon biopsy, which shows alternating bands of myelinating and demyelinating nerve fibers in the white matter of the central nervous system. Imaging tests are used to rule out space-occupying lesions such as tumors.

**Treatment**

Flares in Balo disease are often controlled with corticosteroids. In cases where a viral trigger is suspected, antiviral medications are often used. Intravenous immunoglobulin therapy has also shown benefits.

**Resources:**


American Autoimmune Related Diseases Association, Incorporated.

United Leukodystrophy Foundation.