Multiple Sclerosis Assessment

Multiple sclerosis is a chronic degenerative neurologic disorder characterized by nerve fiber demyelination. Although the disorder is commonly diagnosed in women between 20-50 years of age, affected individuals also include young teens, adult males, and older adults. Symptoms of multiple sclerosis include numbness, spasticity, and fatigue. The disorder causes motor issues such as paralysis and cerebellar signs such as nystagmus. Additional complications include urinary incontinence and optic neuritis. The patient may experience relapse and remission of symptoms. Refer to the Picmonic on "Multiple Sclerosis Interventions" for additional information.

PLAY PICMONIC

Cause/Mechanism

Nerve Fiber Demyelination

Nerve Fiber Unraveling-myelin

Multiple sclerosis is a chronic, progressive, degenerative disorder that affects the central nervous system. An environmental factor or virus triggers chronic inflammation. The inflammatory process causes disseminated demyelination of nerve fibers of the brain and spinal cord.

Assessment

Motor Issues

Motor with Issues

Multiple sclerosis causes motor issues such as trembling and weakness of the limbs, trunk, or head. Weakness may progress to paralysis. Weakness is caused by slowed transmission of nerve impulses related to inflammatory damage to the myelin sheath. Since chronic inflammation may destroy the myelin's ability to regenerate, the underlying axon may be damaged and cause permanent loss of nerve function resulting in paralysis.

Cerebellar Signs

Silver-cerebellum-bell Sign

Chronic inflammation may develop glial scar tissue and form hard, sclerotic plaques. The plaques may form throughout the white matter of the central nervous systems and affect the cerebellum. Nystagmus, or involuntary eye movement, is a symptom of cerebellar damage. Additional cerebellar signs include scanning speech, ataxia, dysarthria, and dysphagia.

Fatigue

Sleepy-guy

A significant percentage of patients with multiple sclerosis experience fatigue that may affect their ability to complete activities of daily living. Fatigue may be worsened by heat, humidity, and medication side effects. Drug therapy indicated to treat fatigue include amantadine (Symmetrel), pemoline (Cylert), modafinil (Provigil), and methylphenidate (Ritalin).

Paresthesias

Paris-t-shirt with Pins-and-needles

Paresthesias is described as a tingling or numbing sensation and is a common symptom related to the demyelination of nerve fibers. The patient may experience sensory abnormalities such as tingling and pain.

Spasticity

Spaz-tick

The patient with multiple sclerosis may experience spasticity in muscles chronically affected by the demyelination of nerve fibers. Muscle relaxants are indicated to help treat spasticity.

Urinary Incontinence

Urine In-continents

If the sclerotic plaque caused by chronic inflammation is located in areas of the central nervous system that control elimination, the patient will experience bowel and bladder dysfunction. The patient with multiple sclerosis may experience spastic or uninhibited bladder accompanied by urinary urgency and frequency. A lesion in the reflex arc controlling bladder function will cause flaccid or hypotonic bladder. Since they lack the sensation or desire to void, patients with flaccid bladders develop a large capacity for urine. Anticholinergics may be used to treat bladder dysfunction.

Optic Neuritis

Optics Nerve-on-fire

Patients with MS may develop optic neuritis. By recording electrical activity, evoked potential testing can diagnose visual abnormalities such as optic neuritis.

Considerations

Women Between 20-50 Years Old

Women with (20) dollar bill and (50) Cent

Multiple sclerosis commonly affects adults between 20 and 50 years of age. Adult females are two to three times more affected than adult males. Multiple sclerosis may also occur in young teens and much older adults.

Relapse and Remission of Symptoms

Play and Pause button

Individuals with MS often experience symptom relapse and remission. Degeneration of the myelin sheath causes symptoms such as weakness. However, myelin may regenerate and reverse symptoms. The remission of symptoms may be followed by a relapse of symptoms, as the inflammatory process is activated and causes damage to the myelin sheath. Repeated exacerbations progresses to deterioration of neurologic function.