TRANSVERSE MYELITIS

Demyelinating Central Nervous System Disease

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WHAT IS TRANSVERSE MYELITIS?

Transverse myelitis is an inflammation of both sides of one section of the spinal cord. This neurological disorder often damages the insulating material covering nerve cell fibers (myelin). Transverse myelitis interrupts the messages that the spinal cord nerves send throughout the body. This can cause pain, muscle weakness, paralysis, sensory problems, or bladder and bowel dysfunction.

Possible causes of transverse myelitis may include infections and immune system disorders that attack the body's tissues. It could also be caused by other myelin disorders, such as multiple sclerosis. Treatment for transverse myelitis includes medications and rehabilitative therapy. Most people with transverse myelitis recover at least partially. Those with severe attacks sometimes are left with major disabilities.

WHAT ARE THE SYMPTOMS?

Typical signs and symptoms include:

- **Pain.** Transverse myelitis pain may begin suddenly in your lower back. Sharp pain may shoot down your legs or arms or around your chest or abdomen. Pain symptoms vary based on the part of your spinal cord that's affected.
- **Abnormal sensations.** Some people with transverse myelitis report sensations of numbness, tingling, coldness or burning. Some are especially sensitive to the light touch of clothing or to extreme heat or cold. You may feel as if something is tightly wrapping the skin of your chest, abdomen or legs.
- **Weakness in your arms or legs.** Some people notice that they're stumbling or dragging one foot, or heaviness in the legs. Others may develop severe weakness or even total paralysis.
- **Bladder and bowel problems.** This may include needing to urinate more frequently, urinary incontinence, difficulty urinating and constipation.

HOW IS IT DIAGNOSED?

Transverse myelitis is diagnosed based on your answers to questions about your signs and symptoms, your medical history, a clinical assessment of nerve function, and test results. These tests, which may indicate inflammation of the spinal cord and rule out other disorders, include the following:

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- **Magnetic resonance imaging (MRI).** An MRI can show inflammation of the spinal cord, and other potential causes of the symptoms, including abnormalities affecting the spinal cord or blood vessels.
- **Lumbar puncture (spinal tap)** uses a needle to draw a small amount of cerebrospinal fluid (CSF), the protective fluid that surrounds your spinal cord and brain.
    - In some people with transverse myelitis, CSF may have abnormally high numbers of white blood cells or immune system proteins that indicate inflammation. Spinal fluid can also be tested for viral infections or certain cancers.
- **Blood tests** may include a test that checks for antibodies associated with neuromyelitis optica and MOG antibody-associated disease, both of which are conditions in which inflammation occurs both in your spinal cord and in the nerve in your eye. People with a positive antibody test are at increased risk of experiencing multiple attacks of transverse myelitis and require treatment to prevent future attacks.
- Other blood tests can identify infections that may contribute to transverse myelitis or rule out other causes of symptoms.

WHAT CAUSES TRANSVERSE MYELITIS?

The exact reason for transverse myelitis is not known. Sometimes there is no known cause. There are a number of conditions that appear to cause the disorder, including:

- **Viral and other infections** of the respiratory tract or the gastrointestinal tract may cause transverse myelitis. In most cases, the inflammatory disorder appears after recovery from the infection.
    - Viruses that can infect the spinal cord directly are herpes viruses, including the one that causes shingles and chickenpox (zoster), enteroviruses, and West Nile virus. Other viruses may trigger an autoimmune reaction without directly infecting the spinal cord.
- Rarely, parasites may infect the spinal cord, and certain bacteria such as Lyme disease can cause a painful inflammation of nerve roots of the spinal cord.
- **Multiple sclerosis** is a disorder in which the immune system destroys myelin surrounding nerves in your spinal cord and brain. Transverse myelitis can be the first sign of multiple sclerosis or represent a relapse. Transverse myelitis as a sign of multiple sclerosis usually causes symptoms on only one side of your body.
- **MOG antibody-associated disease.** In some patients with optic neuritis, antibodies against myelin oligodendrocyte glycoprotein (MOG) may be found in the blood.
- **Neuromyelitis optica (Devic's disease)** is a condition that causes inflammation and myelin loss around the spinal cord and the nerve in your eye that transmits information to your brain. Transverse myelitis associated with neuromyelitis optica usually affects both sides of your body.
- **Autoimmune disorders** probably contribute to transverse myelitis in some people. These disorders include lupus, which can affect multiple body systems, and Sjögren's syndrome, which causes severe dryness of the mouth and eyes.

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- Transverse myelitis associated with an autoimmune disorder may be a warning sign of neuromyelitis optica. Neuromyelitis optica occurs more frequently in people with other autoimmune diseases.
- **Vaccinations** for infectious diseases — including hepatitis B, measles-mumps-rubella and diphtheria-tetanus vaccines — have occasionally been associated as a possible trigger. However, at this time the association is not strong enough to warrant limiting any vaccine.

HOW IS TRANSVERSE MYELITIS TREATED?

Several therapies target the acute signs and symptoms of transverse myelitis:

- **Intravenous steroids.** You'll probably receive steroids through a vein in your arm over the course of several days. Steroids help reduce the inflammation in your spinal column.
- **Plasma exchange therapy.** People who don't respond to intravenous steroids may need plasma exchange therapy. This involves removing the straw-colored fluid in which blood cells are suspended (plasma) and replacing the plasma with special fluids.
    - It's not certain how this therapy helps people with transverse myelitis, but it may be that plasma exchange removes inflammatory antibodies.
- **Antiviral medication.** Some people who have a viral infection of the spinal cord may be treated with medications to treat the virus.
- **Pain medication.** Chronic pain is a common complication of transverse myelitis. Medications that may lessen muscle pain include common pain relievers, such as acetaminophen (Tylenol, others), ibuprofen (Advil, Motrin IB, others) and naproxen sodium (Aleve). Nerve pain may be treated with antidepressant drugs, such as sertraline (Zoloft), and anticonvulsant drugs, such as gabapentin (Neurontin, Gralise) or pregabalin (Lyrica).
- **Medications to treat other complications.** Your doctor may prescribe other medications as needed to treat problems such as muscle spasticity, urinary or bowel dysfunction, depression, or other complications associated with transverse myelitis.
- **Medications to prevent recurrent attacks of transverse myelitis.** People who have antibodies associated with neuromyelitis optica need ongoing medications, such as corticosteroids and/or immunosuppressants, to reduce their chances of more transverse myelitis attacks or developing optic neuritis.

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