CONDITION

Spinal arachnoiditis

Spinal arachnoiditis is inflammation and scarring around spinal nerves that can cause lasting pain and nerve problems.

WHAT IT IS
Inflammation and scarring around spinal nerve roots

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Burning pain, tingling or numbness, weakness, bladder or bowel changes

WHAT CAUSES IT
Spinal procedures, infection, bleeding, or chemical irritation

HOW IT IS DIAGNOSED
Symptoms plus MRI, sometimes CT myelography

MAIN TREATMENT
Pain control, rehabilitation, and support for nerve problems

CAN IT BE CURED?
No - existing nerve scarring is usually permanent

IS IT AN EMERGENCY?
Sometimes - new bladder problems or rapidly worsening weakness

LONG-TERM OUTLOOK
Often chronic; symptoms may stabilize, fluctuate, or progress

Overview

Spinal arachnoiditis is inflammation of the arachnoid, one of the thin membranes surrounding the spinal cord and nerve roots. The inflammation can lead to scar tissue that makes nerve roots stick together. This is often called adhesive arachnoiditis .

It most often affects nerves in the lower back, although it can occur elsewhere along the spine. These nerves carry signals for movement, sensation, bladder and bowel control, and sexual function. Scarring around them may disrupt those signals.

Spinal arachnoiditis is not cancer and is not contagious. It is also different from meningitis, which is usually a sudden infection or inflammation of the membranes around the brain and spinal cord.

The condition can cause long-lasting nerve pain and changes in sensation or strength. Symptoms do not always match the amount of scarring seen on a scan. Some people have clear imaging changes but limited symptoms, while others have major symptoms that affect daily life.

There is no treatment that reliably removes established scarring. Care therefore focuses on reducing symptoms, maintaining movement and independence, and managing specific nerve-related problems.

Symptoms

Symptoms may begin gradually or follow a spinal procedure, infection, injury, or bleeding. They can affect one or both sides of the body.

Nerve pain is common. It may feel burning, shooting, electric, stabbing, or like deep aching. Pain can occur in the lower back, buttocks, legs, or feet. Less often, symptoms involve the upper back, chest, or arms.

Other possible symptoms include:

Symptoms may worsen with prolonged sitting, standing, walking, or certain spinal movements. The pattern is not the same for everyone. Pain and fatigue may also interfere with sleep, work, exercise, relationships, and mood.

New loss of bladder or bowel control, numbness around the genitals or inner thighs, or rapidly worsening weakness needs urgent assessment. These symptoms can also occur with cauda equina syndrome, in which the nerves at the bottom of the spine are severely compressed.

- Tingling, numbness, crawling sensations, or unusual sensitivity to touch
- Muscle cramps, spasms, stiffness, or twitching
- Leg weakness, poor balance, or difficulty walking
- Changes in reflexes or coordination
- Bladder urgency, difficulty starting urination, or poor bladder control
- Constipation, loss of bowel control, or altered sexual function

Causes and risk factors

Arachnoiditis develops after irritation or inflammation within the spinal canal. This can result in fibrosis, meaning thick scar tissue, around the nerve roots.

Possible causes include:

Cases have also been reported after other injections or procedures around the spine. However, it can be difficult to prove that one procedure directly caused the condition. Prior surgery, bleeding, infection, and existing spinal problems may also contribute.

Modern water-based imaging contrast agents are different from the older oil-based products historically associated with arachnoiditis.

Sometimes no clear cause is found. Arachnoiditis is not generally considered an inherited condition.

- Spinal surgery, especially repeated or complicated procedures
- Infection involving the spinal membranes, such as tuberculosis or some fungal infections
- Bleeding into the space around the spinal cord
- Direct spinal injury
- Chemicals or medicines introduced into the fluid around spinal nerves
- Older oil-based contrast agents once used for myelograms

Diagnosis

Diagnosis is based on your symptoms, medical history, examination, and spinal imaging. A clinician may ask about previous spinal operations, injections, infections, injuries, bleeding, or older myelograms.

A neurological examination checks strength, sensation, reflexes, balance, and walking. Bladder, bowel, and sexual symptoms may also be discussed because they provide important information about nerve function.

MRI is the main imaging test. It can show nerve roots that are clumped together, stuck to the edge of the spinal sac, or surrounded by scar tissue. Contrast material may be used in some cases to help assess inflammation and exclude other causes.

CT myelography may be considered if MRI cannot be performed or does not provide enough information. For this test, contrast is placed into the fluid around the spinal nerves before CT images are taken. It is more invasive than MRI.

Nerve tests such as electromyography, or EMG, may help assess nerve damage but do not confirm arachnoiditis by themselves. There is no blood test that confirms the condition.

Other conditions can produce similar symptoms. These include a slipped or herniated disc, spinal narrowing, tumors, infection, multiple sclerosis, peripheral nerve damage, and cauda

equina syndrome. Imaging findings must therefore be considered alongside your symptoms and examination.

Treatment and management

There is no standard treatment that reverses established nerve scarring. Management is usually coordinated around the symptoms that affect you most.

Medicines may be used for nerve pain, muscle spasms, or other types of pain. Options can include medicines originally developed for seizures or depression because some of them also reduce nerve pain. Ordinary pain relievers or anti-inflammatory medicines may help certain symptoms. Stronger pain medicines are considered individually because their benefits and risks can change with long-term use.

Physical rehabilitation may focus on comfortable movement, strength, balance, posture, and pacing. An exercise plan should account for neurological weakness and avoid repeatedly provoking severe symptoms. Occupational therapy can help with home activities, work adjustments, mobility aids, and energy conservation.

Psychological treatment does not mean the symptoms are imagined. Approaches such as cognitive behavioural therapy can help with sleep, stress, coping, and the effects of persistent pain.

Treatment may also address specific complications. This can include bladder assessment, bowel management, sexual health support, treatment for depression or anxiety, and equipment to reduce falls.

The role of spinal injections is uncertain, and some procedures may carry additional risks when there is already inflammation or scarring around spinal nerves. A specialist can explain why a proposed procedure is being considered and what alternatives exist.

Surgery is not a routine cure. Removing scar tissue can be difficult, and new scarring may form. Surgery may be considered in selected situations, such as a blocked flow of spinal fluid, a tethered spinal cord, a fluid-filled cavity called a syrinx, or another treatable structural problem. Expected benefits and the risk of recurrence should be discussed carefully.

Neuromodulation, including spinal cord stimulation, may be considered for selected people with persistent pain. It changes pain signalling rather than removing arachnoid scarring, and it does not help everyone.

Complications

Ongoing nerve damage can lead to chronic pain, reduced sensation, muscle weakness, and difficulty walking. Limited movement may contribute to loss of fitness, joint stiffness, falls, or increasing reliance on mobility aids.

Nerve problems can also interfere with bladder emptying or control. Incomplete emptying may increase the risk of urinary infections or kidney problems if it is severe and untreated. Bowel and sexual function may also be affected.

Persistent pain and disrupted sleep can contribute to depression, anxiety, social isolation, or difficulty working. These effects deserve treatment in their own right.

Less commonly, severe scarring can disturb the flow of cerebrospinal fluid, the clear fluid around the brain and spinal cord. This may contribute to a syrinx or other neurological problems requiring specialist assessment.

Prevention

Spinal arachnoiditis cannot always be prevented. Some cases follow necessary surgery, serious infection, bleeding, or an event that could not have been predicted. Other cases have no identifiable cause.

Healthcare safety measures can reduce some risks. These include sterile techniques, appropriate treatment of spinal infections, careful control of bleeding, and avoiding substances known to irritate tissues inside the spinal canal. Older oil-based myelography contrast agents are no longer routinely used.

If you are considering a spinal procedure, arachnoiditis is not a reason to avoid treatment automatically. The likely benefits, alternatives, and known risks should be considered for that specific procedure and medical problem.

Living with it and what to expect

Spinal arachnoiditis is usually a long-term condition. Existing scar tissue often remains, but symptoms do not follow one predictable path. They may stay fairly stable, fluctuate over time, or gradually become more limiting. A flare in pain does not always mean that nerve damage is progressing.

Regular follow-up may be useful when symptoms affect mobility, bladder or bowel function, sleep, or medicine use. Repeat MRI is not always needed for stable symptoms. It may be arranged when there is a significant neurological change or concern about another spinal problem.

Many people need to balance activity with rest. Remaining as active as safely possible can support strength and general health, but forcing activity through severe symptoms may cause a prolonged flare. Rehabilitation can help identify a sustainable level.

Practical changes may include alternating sitting and standing, planning rest periods, using supportive footwear, adapting work tasks, or using a cane, walker, or wheelchair when needed. Mobility equipment can improve safety and independence rather than represent treatment failure.

Long-term pain care may need adjustment over months or years. A treatment that once helped may become less useful, or new problems may emerge. Routine reviews are a chance to assess function, side effects, sleep, mood, and personal goals rather than focusing only on a pain score.

When to get medical help

Arrange a routine medical appointment if you develop persistent burning or shooting pain, unexplained numbness, muscle spasms, weakness, or changes in walking. Assessment is also appropriate if known symptoms are gradually worsening or interfering with sleep and daily activities.

Seek prompt medical advice for new urinary difficulty, repeated urinary infections, worsening constipation, new sexual dysfunction, frequent falls, or a noticeable decline in leg strength.

Get emergency medical help for:

These symptoms do not always mean arachnoiditis has worsened. They can signal spinal nerve compression or infection that needs urgent assessment.

- New loss of bladder or bowel control
- Inability to urinate with increasing lower abdominal discomfort
- New numbness around the genitals, buttocks, or inner thighs
- Rapidly worsening leg weakness or inability to walk
- Severe back pain with fever, confusion, or recent serious infection

Common questions

Is spinal arachnoiditis the same as a trapped nerve?

No. A trapped nerve usually involves pressure at one particular point, such as from a herniated

disc. Arachnoiditis involves inflammation and scarring around one or more nerve roots within the spinal canal. Both can cause pain, numbness, or weakness.

Can spinal arachnoiditis be cured?

There is currently no reliable cure that removes established scarring and restores affected nerves. Treatment can still reduce symptoms, improve function, and address bladder, bowel, mobility, or sleep problems.

Will arachnoiditis always get worse?

Not always. Some people have stable symptoms for long periods, while others experience flares or gradual change. Symptoms can also change without clear progression on MRI. New weakness or bladder and bowel problems should still be assessed.

Can arachnoiditis be seen on an MRI?

MRI can show patterns associated with arachnoiditis, such as clumped or displaced nerve roots. Imaging alone is not enough because similar appearances can occur after surgery or with other conditions. The scan must be interpreted with your symptoms and history.

Can I exercise with spinal arachnoiditis?

Many people can remain active, but the type and amount of exercise need to match their strength, balance, and symptoms. Low-impact, paced activity may be more manageable than repeated high-impact movement. A rehabilitation professional can help develop a safe plan.

Does arachnoiditis shorten life expectancy?

Arachnoiditis itself is not usually considered life-shortening. It can, however, cause substantial disability and complications involving mobility or bladder function. Monitoring and treating these problems can protect health and independence.

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