

SPINAL INFECTIONS



NORTH AMERICAN
SPINE SOCIETY
PUBLIC EDUCATION
SERIES

WHAT ARE SPINAL INFECTIONS?

The vertebral column (bones), the intervertebral discs, the dural sac (the covering around the spinal cord), or the space around the spinal cord may become infected in a number of circumstances. The infection may be caused by bacteria or fungal organisms.

Spinal infections may occur following surgery or spontaneously in patients with certain risk factors. Risk factors for spinal infections include poor nutrition, immune suppression, human immunodeficiency virus (HIV) infection, cancer, diabetes, and obesity.

Surgical risk factors include a long surgical time, instrumentation, and re-operations. Infections occur in up to 4% of surgical cases, despite the numerous preventative measures that are taken. The likelihood of an infection increases with the number of operations in an area. Most postoperative infections occur between three days and three months after the time of surgery.

WHAT ARE THE SYMPTOMS?

The symptoms of a spinal infection include fever, chills, headache, neck stiffness, pain, wound redness and tenderness, and wound drainage. In some cases patients may notice new weakness, numbness, or tingling sensations in the arms and/ or legs.

The symptoms may be very severe, or they may be very subtle in some cases.

HOW IS IT DIAGNOSED?

The diagnosis of a spinal infection begins with a history and physical. Your doctor will ask questions to screen for risk factors for spinal infections.

Your doctor may order a series of tests to look for an infection if one is suspected. These tests may include plain x-rays, computerized tomography (CT or CAT) scans, or MRI scans. In some cases further, specialized testing is required when the diagnosis is still in question. These include nuclear medicine bone scans and nuclear medicine tagged white blood cell scans.

Your doctor will want to obtain cultures to determine the type of bacteria or fungus that is causing the infection. Blood cultures are often obtained to screen for evidence of infection. Cultures of your wound or the area of infection may be taken. In cases of deep infections of the vertebrae (bone) or the intervertebral disk, a needle culture may be required. This is often done with x-ray guidance with local anesthetic medication given at the needle entry site.

Your doctor may also order additional blood tests to screen for signs of an infection. These tests include a white blood cell (WBC) count, c-reactive protein (CRP) and an erythrocyte sedimentation rate (ESR). These values may be slightly elevated after an operation, but usually return to normal values within a few weeks. Abnormal elevation may represent a sign of infection.

WHAT ARE THE TREATMENT OPTIONS?

The nonsurgical management of spinal infections consists of antibiotic or antifungal medications. The type and the duration of the treatment depends on the severity of the infection and the organism causing the infection.

Antibiotics or antifungal medications may be necessary intravenously (IV) and/ or orally. The duration of the treatment typically ranges from as short as 7-10 days, to as long as 6-12 weeks.

You may need to have a special intravenous line, called a central line, placed for a long course of antibiotics. This allows, in some cases, for the medications to be administered at home with the assistance of a home health care agency or a visiting nurse. Your doctor may recommend using a brace to support the spine until healing occurs and to help with the pain.

Surgery may be required for many postoperative infections to wash away much of the bacteria and infected tissue. In addition, surgery may be required in cases where there is evidence of instability of the spine as a result of the infection. In cases in which there is severe weakness as a result of a spinal infection, surgery may be required to relieve the pressure on the spinal cord caused by the infection.

WHAT ARE THE SURGICAL OPTIONS?

The surgical options to treat spinal infections range from simply washing out the wound and re-closing to more extensive debridements and removal of infected tissues.

In some cases it is not possible to close the wound at the time of surgery, and a packing dressing is left in place. This is often changed two to three times a day until the wound heals over a period of several weeks.

WHAT ARE THE LONG-TERM IMPLICATIONS?

A combination of surgery and long term antibiotics are often required to completely treat some spinal infections.

During the course of your treatment, your doctor may follow your white blood cell (WBC) count along with your C-reactive protein (CRP) or erythrocyte sedimentation rate (ESR) as markers of the response to therapy. These levels may be elevated in the early period after surgery, but they usually return to normal within a few weeks.

Re-elevation or failure of these values to return to normal after treatment may indicate recurrent or residual infection.

A vertical graphic on the right side of the page, rendered in a light grey color against a purple background. It depicts a stylized human spine with vertebrae and intervertebral discs, shown in a slightly curved, anatomical perspective.

FOR MORE INFORMATION,
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