Bone & Joint Infections

Joint infections are called septic or infectious arthritis. An infected joint may damage cartilage and tissue very quickly. This may destroy the joint. Bone infections (*osteomyelitis*) may last for years. Joints may become stiff if left untreated. Germs (*bacteria*) are the most common cause. Other causes include viruses and fungi, but these are more rare. Bone and joint infections usually come from injury or infection elsewhere in your body; the germs are carried to your bones or joints through the bloodstream.

CAUSES

- Blood-carried germs from an infection elsewhere in your body can eventually spread to a bone or joint. The germ (*bacterium*) staphylococcus is the most common cause of both osteomyelitis and septic arthritis.
- An injury can introduce germs into your bones or joints.

SYMPTOMS

- Weight loss.
- Tiredness.
- Chills and fever.
- Bone or joint pain at rest and with activity.
- Tenderness when touching the area or bending the joint.
- Refusal to bear weight on a leg or inability to use an arm due to pain.
- Decreased range of motion in a joint.
- Skin redness, warmth and tenderness.
- Open skin sores and drainage.

RISK FACTORS

Children, the elderly and those with weak immune systems are at increased risk of bone and joint infections. It is more common in people with HIV infections and with people on chemotherapy. People are also at increased risk if they have surgery where metal implants are used to stabilize the bone. Plates, screws or artificial joints provide a surface that bacteria can stick on. Such a growth of bacteria is called biofilm. The biofilm protects germs from medications which kill germs (*antibiotics*) and bodily defenses. This allows germs to multiply. Other reasons for increased risks include:

- Having previous surgery or injury of a bone or joint.
- Being on high-dose corticosteroids and immunosuppressive medications that weaken your body's resistance to germs.
- Diabetes and long standing diseases.
- Use of intravenous street drugs.
- Being on hemodialysis.
- Having a history of urinary tract infections.
- Removal of your spleen (*splenectomy*). This weakens your immunity.
- Chronic viral infections such as HIV/AIDS.
- Lack of sensation such as paraplegia, quadriplegia or spina bifida.

DIAGNOSIS

- Increased numbers of white blood cells in your blood may indicate infection. Some times your caregivers are able to identify the infecting germs by testing your blood. Inflammatory markers present in your bloodstream such as an erythrocyte sedimentation rate (ESR or sed rate) or c-reactive protein (CRP) can be indicators of deep infection.
- Bone scans and X-ray exams are necessary for diagnosing osteomyelitis. They may help your caregiver find the infected areas. Other studies may give more detailed information. They may help detect fluid collections around a joint, abnormal bone surfaces, or be useful in diagnosing septic arthritis. They can find soft tissue swelling and find excess fluid in an infected joint or the adjacent bone. These tests include:
  - Ultrasound.
  - CT (*computerized tomography*).
  - MRI (*magnetic resonance imaging*).

- The best test for diagnosing a bone or joint infection is an aspiration or biopsy. Your caregiver will usually use a local anesthetic. He/she can then remove tissue from a bone injury or use a needle to take fluids from an infected joint. A local anesthetic is a medication like Novocain. It numbs the area to be biopsied. Often biopsies are done in the operating room under general anesthesia. This means you will be asleep during the procedure. Tests performed on these samples can identify an infection.

TREATMENT

- **Treatment can help control long-standing infections, but infections may come back.**
- Infections can infect any bone or joint at any age.
- Bone and joint infections are rarely fatal.
- Bone infection left untreated can become a never-ending infection. It can spread to other areas of your body. It may eventually cause bone death. Reduced limb or joint function can result. In severe cases, this may require removal of a limb. Spinal osteomyelitis is very dangerous. Untreated, it may damage spinal nerves and cause death.
- The most common complication of septic arthritis is osteoarthritis with pain and decreased range of motion of the joint.

Some forms of treatment may include:

- If the infection is caused by bacteria, it is generally treated with antibiotics. You will likely receive the drugs through a vein (*intravenously*) for anywhere from 2 to 6 weeks. In some cases, especially with children, oral antibiotics following an initial intravenous dose may be effective. The treatment you receive depends on the:
  - Type of bacteria.
  - Location of the infection.
  - Type of surgery that might be done.
  - Other health conditions or issues you might have.
- Your caregiver may drain soft tissue abscesses or pockets of fluid around infected bones or joints. If you have septic arthritis, your caregiver may use a needle to drain pus from the joint on a daily basis. He/she may use an arthroscope to clean the joint or may need to open the joint surgically to remove damaged tissue and infection. An arthroscope is an instrument like a thin lighted telescope. It can be used to look inside the joint.
- Surgery is usually needed if the infection has become long standing. It may also be needed if there is hardware (such as metal plates, screws or artificial joints) inside the patient. Sometimes a bone or muscle graft is needed to fill in the open space. This promotes growth of new tissues and better blood flow to the area.

PREVENTION

- Clean and disinfect wounds quickly to help prevent the start of a bone or joint infection. Get treatment for any infections to prevent spread to a bone or joint.
- **Do not smoke**. Smoking decreases healing rates of bone and predisposes to infection.
- When given medications that suppress your immune system, use them according to your caregiver's instructions. Do not take more than prescribed for your condition.
- Take good care of your feet and skin, especially if you have diabetes, decreased sensation or circulation problems.

SEEK IMMEDIATE MEDICAL CARE IF:

- You cannot bear weight on a leg or use an arm, especially following a minor injury. This can be a sign of bone or joint infection.
- You think you may have signs or symptoms of a bone or joint infection. Your chance of getting rid of an infection is better if treated early.

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