Bone & Joint Infections, Child

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*) can last for years (*become chronic*). Your child's joints may stiffen if left untreated. Germs (*bacteria*) are the most common causes. However, viruses and fungi can be the problem. Infection with fungi is rare.

CAUSES

Children have bacteria in the bloodstream commonly. An injury can produce a local environment conducive to bacteria multiplying and producing infection in a bone or joint. Generally the infection goes from the bone into the adjacent joint in children. Children may also get a bone or joint infection if bruising the bone causes bleeding (*hematoma*). It is at this location where bacteria can lodge and multiply.

SYMPTOMS

- Weight loss.
- Tiredness.
- Chills and fever.
- Bone or joint pain.
- Tenderness when touching the area or bending the joint.
- Your child limps and refuses to put weight on a leg or refuses to use an arm.
- Decreased range of motion in a joint.
- Skin redness, warmth and tenderness.
- Open skin sores and drainage.

RISK FACTORS

Children are at increased risk of bone and joint infections. It is even more common in children:

- With HIV infections.
- On strong medication to cure cancer (*chemotherapy*).
- If they have surgery where metal implants are inserted. Plates, screws or artificial joints provide a surface where bacteria can stick. Such a growth of bacteria is called biofilm. The biofilm protects germs from medications that kill germs (*antibiotics*) and bodily defenses. This allows germs to multiply.

Other reasons for increased risk include:

- Having an organ transplant from someone other than an identical twin. This is related to the anti-rejection drugs that are required.
- Having previous surgery on a bone or joint.
- Being on high-dose corticosteroids and immunosuppressive medications for an illness. These weaken your child'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 the spleen (*splenectomy*). This weakens immunity.
- Bed sores, especially in semi-quadriplegic or quadriplegic patients.

DIAGNOSIS

- Increased numbers of white blood cells in your child's blood may indicate infection. Sometimes your caregiver is able to identify the infecting germs by testing your child's blood.
- Bone scans and X-ray exams may be necessary for diagnosing osteomyelitis and may help your caregiver find the infected areas. They may help detect fluid collections around a joint, abnormal bone surfaces, or be useful in diagnosing septic arthritis or bone infection. They can find soft tissue swelling and find excess fluid in an infected joint. Other tests that may give more detailed information 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 child's caregiver will usually use a local anesthetic and sedation. The caregiver can then sample tissue from a bone injury or use a needle to take fluids from an infected joint. A local anesthetic numbs the area to be biopsied. Tests performed on the samples can find an infection and discover the cause.
- Blood tests such as Sedimentation Rate (ESR) and C-reactive Protein (CRP) are helpful in diagnosing infection.

TREATMENT

- **Treatment can help control long-standing infections. Infections may come back.**
- Infections can infect any bone or joint at any age.
- Bone and joint infections are rarely fatal. Most commonly, this is a problem of a child with a compromised immune system or a chronically sick child.
- Osteomyelitis left untreated can become a never-ending infection. It can spread to other areas of your child's body. It may eventually cause bone death. Reduced limb or joint function can result. In severe cases, this condition 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. Your child 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 depends on the:
  - Type of bacteria.
  - Location of the infection.
  - Type of surgery that might be done.
  - Other health conditions or issues your child might have.
- Your caregiver may drain soft tissue abscesses or pockets of fluid around infected bones or joints. If your child has septic arthritis, your caregiver may use a needle to drain pus from the joint on a daily basis. The caregiver may use an instrument like a thin lighted telescope (*arthroscope*) to clean the joint in the operating room. It can be used to look inside the joint. Or he/she may need to open the joint surgically to remove damaged tissue and infection.
- 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 open space. This promotes healing by the introduction of a new blood supply.

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 let your child smoke. Smoking decreases healing rates of bone. Smoking makes it harder for the body to fight germs.
- When giving medications that suppress your child's immune system, use according to your caregiver's instructions. Do not give more than prescribed for your child's condition.
- Take good care of your child's feet and skin, especially if your child has diabetes, decreased sensation or circulation problems.

SEEK IMMEDIATE MEDICAL CARE IF:

- Your child is refusing to put 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 your child may have signs or symptoms of a bone or joint infection. Your child's chances of getting rid of an infection are better if treated early.

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