Following up on a bone infection

Osteomyelitis is a bone infection. If treatment continues after a hospital stay, ask which clinician will check that it is working and who will handle medicines, dressings and test results.

Osteomyelitis is an infection of the bone. It is a rare but serious condition that affects two out of every 10,000 people and is most frequently caused by staphylococcus bacteria, a common type of germ found on the skin or in the nose.

There are three ways that staph, and other types of germs, can get into the bone:

- The bloodstream — Germs that have already been introduced to the bloodstream can sometimes enter the bone through a worn or weakened area.
- Injuries — A deep puncture wound or an open fracture can allow germs to reach bone. An infection in nearby tissue can also spread to bone. Other bone infections arrive through the bloodstream. Tell the clinician about recent injuries, wounds, surgery and changes such as spreading redness, pain, swelling, fever or drainage.
- Surgery — Bones can be contaminated by germs during surgeries like joint replacements or fracture repairs. It is also possible, though uncommon, to develop a bone infection after tooth extraction.

Sometimes osteomyelitis causes no symptoms, or appears only as generic symptoms that mimic many other conditions — fever, irritability, and fatigue, for example.

Other osteomyelitis symptoms include:

- Nausea
- Tenderness, redness and warmth in the area of the infection
- Swelling around the infected bone
- Lost range of motion

As people get older, their bones become less resistant to infection. Other osteomyelitis risk factors include:

- Recent injury or orthopaedic surgery — Severe puncture wounds, bone fractures, surgical incisions and implanted orthopaedic hardware give germs a pathway to enter the bone.
- Circulation disorders — Damaged or blocked blood vessels make it difficult for the body to distribute infection-fighting cells, so even small cuts can progress to large sores that expose bones and tissues to infections. Poorly controlled diabetes, peripheral artery disease (often related to smoking), and sickle cell diseases all impair blood circulation.
- Problems that require intravenous lines or catheters — Medical tubing used in intravenous therapy can increase a person's risk of developing a blood infection that leads to osteomyelitis.

- Conditions that impair the immune system — Poorly controlled diabetes, cancer treatments and corticosteroids compromise the immune system and make it difficult for the body to fight infections that could lead to osteomyelitis.
- Illicit drugs — People who use illicit drugs may introduce germs and bacteria into their bodies by using nonsterile needles or by not sterilizing their skin prior to injection.

Adults can suffer from either acute or chronic osteomyelitis, both of which typically affect their pelvis or vertebrae.

Chronic recurrent multifocal osteomyelitis, also sometimes called chronic nonbacterial osteomyelitis, is an inflammatory bone condition in which the immune system wrongly attacks normal bone, causing pain, redness and swelling. It usually begins in childhood between the ages of eight and fourteen and causes inflammatory flare-ups for many years. Though symptoms commonly decrease over time, medications and occupational therapy are often used to manage the effects of chronic recurrent multifocal osteomyelitis in children and young adults.

Osteomyelitis Complications

Modern treatment options are often sufficient for addressing bone infections, but osteomyelitis complications can sometimes occur. The infection and resulting inflammation may block blood vessels, thereby reducing the flow of oxygen and nutrients, causing the bone and surrounding tissue to die. This causes chronic osteomyelitis, which is severe, persistent and sometimes incapacitating.

Other osteomyelitis complications include:

- Bone abscess
- Bone necrosis (bone death)
- Septic arthritis
- Impaired growth
- Spread of infection
- Inflammation of soft tissue (cellulitis)
- Blood poisoning (septicemia)
- Skin cancer
- Chronic infection that doesn’t respond well to treatment

In some cases, osteomyelitis complications can be severe and even life-threatening, requiring extensive treatment and long-term acute care. In order to prevent these complications, it is critical for anyone experiencing bone infection symptoms to see a doctor immediately.

Osteomyelitis Recovery

The most common treatments for bone infections and osteomyelitis complications are surgery and antibiotics.

Depending on the infection’s severity, osteomyelitis surgery may include procedures that:

- Drain the infected area — Through an opening around the infected bone, a surgeon will drain pus or fluid that has accumulated as a result of the infection.

- Remove diseased bone and tissue — Surgeons will remove diseased bone and possibly some surrounding tissue in a procedure called debridement. A small piece of healthy bone is often removed as well, to ensure that all of the infected areas have been removed.
- Restore blood flow to the bone — The debridement procedure leaves empty space, which is filled by a piece of bone or tissue from another part of the body.
- Remove foreign objects — Objects like plates and screws that have been surgically implanted may have to be removed.
- Amputate the limb — In severe osteomyelitis cases, surgeons may have to amputate the limb to prevent the infection from spreading.

Bone biopsies are usually performed on osteomyelitis patients to reveal what type of bacteria is causing the infection. This enables doctors to select the appropriate antibiotic, which is generally given through intravenous therapy for a period of up to six weeks or more.

Bone infection can require a prolonged course of treatment, sometimes including surgery, antibiotics and wound management. The team should identify who reviews cultures, laboratory results and changes in symptoms.

Such a plan might include:

- IV antibiotics
- Pain management
- Wound care
- Smoking cessation
- Disease management
- Physical therapy

A bone infection needs medical assessment and follow-up. Ask what tests guide treatment, whether surgery is being considered, how to protect the area and who will review the next result.

Archived recovery account

This account describes care in an earlier setting. The course, timing and outcome belong to that individual.

The patient, 66, was admitted to a short-term acute care facility for sepsis, right lower extremity cellulitis, type 2 diabetes, acute renal failure, and rhabdomyolysis — the release of muscle fibre fragments into the bloodstream. The patient also had a history of a slow healing foot ulcer and osteomyelitis that required extensive antibiotic treatment.

At the end of his stay at the traditional hospital, the patient required extended recovery time and was transferred to the treating hospital for continued care. Upon evaluation by the treating hospital's interdisciplinary team, a treatment plan was developed, including wound management, rehabilitation, and antibiotics to treat the osteomyelitis, sepsis and cellulitis.

Prior to admission, the patient lived at home with a supportive wife. He owned an electric scooter for transportation around his community, a rolling walker and a standard cane. The patient reported requiring frequent rests during any activities at home, minimal assistance from his wife for toileting, and an overall sedentary lifestyle. Though he had lived independently, he reported having difficulties with activities of daily living, mobility and transfers at home, due to significantly impaired functional activity tolerance.

When he arrived at the treating hospital, the patient had grade 3+ pitting edema to both legs, required supervision for all mobility and transfers in his room, and could walk only 10 feet with a rolling walker. He required minimal assistance for dressing and moderate assistance for toileting activities.

After 30 days of intense wound management, antibiotic therapy and physical and occupational rehabilitation, the patient was able to walk more than 500 feet with a rolling walker, requiring only 2-3 rests. He had achieved modified independence (independence with the use of an assistive device) for dressing, toileting, mobility and transfers. The patient's foot ulcer was 100% healed with no signs of osteomyelitis, and he was completely discharged from antibiotics.

Upon discharge, the patient and his wife happily reported that his functional status, activity tolerance, and independence in activities of daily living were significantly better after his stay at the treating hospital.

Talk with Lakeview

For questions about a possible stay, call Lakeview Admissions at (262) 534-8509. During a stay, ask the bedside nurse who can help with your question.

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