Osteomyelitis

INTRODUCTION

Osteomyelitis is an infection of a bone. Symptoms include pain and tenderness over the affected area. Symptoms often start slowly and gradually worsen. There may or may not be systemic symptoms such as fevers or chills. Diagnosis is confirmed with blood tests and imaging studies. Osteomyelitis can be a serious infection and needs treatment with antibiotics. Surgery is sometimes needed if there is an abscess or the infection becomes severe or persistent.

BACKGROUND

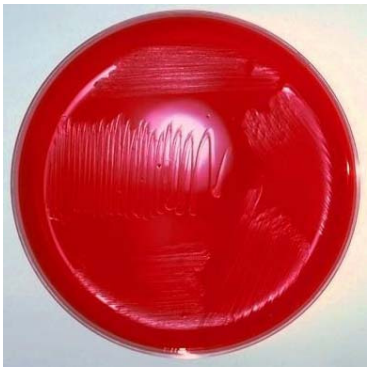
Osteomyelitis is uncommon. It occurs in all age groups, but affects young children more frequently. Bacteria are tiny one cell organisms that live and grow wherever they can. There are bacteria that naturally live all around us, including on our skin and inside our digestive tracts. Sometimes, bacteria manage to get into the blood stream. Almost always, our immune systems protect us. However, occasionally the bacteria will cause an infection. Other causes for infection include a penetrating wound or spread from an adjacent area of infection. Whatever the source, once the bacteria are in the bone, they can start to grow and multiply. Leg bone are the most commonly affected, but can affect any bone. Many types of bacteria can cause osteomyelitis., but Staphylococcus Aureus is most common. Infection with a fungus is a rare cause. Anyone can develop osteomyelitis, but risk is increased risk if there are problems with the immune system (due to chemotherapy, steroid treatment, or another illness).

CLINICAL FINDINGS

Initial symptoms can be varied. There is often pain and tenderness over the affected area. Redness and swelling are common. Systemic symptoms may be present, including fevers, chills, decreased appetite. If the infection is in a deep area such as the pelvis or spine, symptoms such as limping or pain with certain leg motions can be confusing, as they do not help to localize the site of infection.

When osteomyelitis is suspected, additional tests are done to confirm the diagnosis. A blood test is done to look for signs of infection/inflammation. The white blood cell count is usually elevated, but it may be normal at first. ESR and CRP are elevated early. Blood cultures may be positive for the causative organism, but take 2-3 days to get results.

Xrays help to rule out other conditions which cause pain, but they are usually normal, unless the infection as been present for more than a week. A bone scan is an imaging study that helps to localize and confirm the diagnosis. An MRI can also be helpful to see the extent of the infection, if the site of infection is known.



Tests are also done to find which bacteria is causing the infection. Sometimes, bacteria can be found in the blood samples and some sometimes from the infection site. Samples are sent to the microbiology laboratory and allowed to grow in special incubators. If the bacteria can be grown in the laboratory, it can be tested against several antibiotics to help decide which antibiotic is the most suitable. Some bacteria are resistant to some antibiotics. Sometimes a biopsy or specimen is taken directly from the bone, but this is painful and often requires a general anesthetic in an operating room. The yield of operative sampling is low and generally it is best to start treatment, rather than waiting for an operative specimen. Operative treatment is often reserved for a failure to respond to the initial choice of antibiotic treatment.

TREATMENT

An antibiotic is usually started as soon as possible. The initial antibiotic chosen is one that is likely to kill the types of bacteria that most commonly cause osteomyelitis. However, the antibiotic is sometimes changed if the bacteria and its sensitivities can be determined. No consensus exists regarding the appropriate route and length of antibiotic treatment. Recommendations vary from 3 to 6 weeks of antibiotics. Blood tests following ESR and CRP levels are valuable indicators of clinical response. Usually, IV antibiotics continue until progress is made and then are switched to oral antibiotics until ESR/CRP levels and clinical symptoms normalize. The symptoms may improve quickly after starting the antibiotic. However, it is important to continue taking the antibiotic to make sure the infection is cleared.

Surgery may be needed if an abscess develops. An abscess is a pocket of infection that has gotten sealed off from the immune system. An abscess needs to drained to get the infection out and let the immune system and antibiotics in to fight the infection. Antoher reason for surgery is if the infection presses on other important structures, such as a spine infection putting pressure on the spinal cord.

EXPECTED OUTCOMES AND POTENTIAL COMPLICATIONS

With early diagnosis and effective treatment, the prognosis for osteomyelitis is excellent. If the infection is treated promptly, then there is a good chance of a complete cure. In the days before antibiotics, osteomyelitis was a very serious illness which often caused severe disability and sometimes death. If the infection is left untreated, an abscess or area of chronic infection can develop. Persistent infection of the bone is called chronic osteomyelitis can be difficult to treat.

MORE INFORMATION

Further information can be obtained on the internet. Your local public library can help you explore these sources if you are interested. Two good sites for expert and peer reviewed information are the American Academy of Orthopedic Surgeons at www.aaos.org and the Pediatric Orthopedic Society of North America at www.orthokids.org.