

Osteomyelitis

What is osteomyelitis?

Osteomyelitis is an active infection of bone that causes severe inflammation, bone destruction, pain and significant lameness depending on which bone(s) is affected. It is most often caused by a bacterial infection, but can also be caused by fungal agents. There are numerous ways animals can contract osteomyelitis. A young animal may get it from a blood-borne infection that settles in the growth plates of bones. Adult dogs can get a spinal form from inhaling grass awns or from migration of penetrating foreign objects (small twig or grass awns). Infection can also be the results of direct exposure of the bone to the environment at the time of fracture, from deep bite wounds or after orthopedic surgery.

Diagnosis

Most patients present for exam with a history of lameness or acting painful. During exam a painful focus is often identified along the spine or on a limb. X-rays typically reveal a mixed destructive and proliferative bone response and swelling of surrounding soft tissue. This typical x-ray appearance can be delayed for up to two weeks after the onset of patients acting painful or showing lameness. Blood cultures or direct lesion samples are the best options to definitively identify the organism causing the infection.

Treatment

The mainstay of treatment is long-term antibiotic therapy based on culture and sensitivity results (identification of the organism and determination of which antibiotic will kill it). In chronic and / or severe cases of osteomyelitis where antibiotics are not effective, surgical debridement (removal of dead and diseased tissue) may be necessary for the body to completely clear the infection. Patients are typically on an antibiotic(s) for a minimum of six weeks. In cases of fungal infection, anti-fungal medication is utilized for much longer periods of time.

In cases with infected surgical implants (bone plates, screws, pins), the implants usually need to be removed after bone healing in order for the patient to completely clear the infection. This is because certain bacteria produce a slime layer called a glycocalyx or biofilm around implants. The biofilm prohibits the body's immune system and antibiotics from reaching the bacteria. Prognosis for patients with osteomyelitis is fair to good if the offending organism is identified early and the condition is aggressively treated.