

Panosteitis

What is panosteitis?

Panosteitis is a bone disease of dogs that is characterized by bone proliferation and remodeling. It is often painful and can come and go until a dog is about 18 months. Episodes commonly last from 2 to 3 weeks. It is characterized by lameness that often comes and goes and changes from leg to leg. It is a common problem in several large breeds, including basset hounds, and the cause is currently unknown. The treatment is symptomatic but the outcome is usually excellent.

Who gets panosteitis?

Panosteitis is most common in large breed dogs between 6 and 18 months of age.

Panosteitis is most common in large breed dogs between 6 and 18 months of age. On rare occasions older dogs may have a bout of panosteitis. It affects dogs worldwide and has been recognized and studied since the 1950's. Male dogs seem to be much more likely to get panosteitis than females. There is a higher incidence in several breeds including German Shepherds, Great Danes, Doberman Pinschers, Golden Retrievers, Labrador Retrievers, Rottweilers, and Basset Hounds.

What causes panosteitis?

The cause of panosteitis is currently unknown. There have been many theories as to the cause of this disease. Originally, it was suspected that the disease was caused by a bacterial infection. However, several investigational studies failed to isolate any bacteria. In addition, the disease

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responds poorly to antibiotics, further suggesting a cause other than bacterial.

Other studies showed that if bone marrow from affected dogs was injected into the bones of healthy dogs, the healthy dogs would contract the disease. It has therefore been speculated that a *virus* may cause the disease. The high fever, tonsillitis, and altered *white blood cell* count would also go along with the viral theory. Another interesting twist to the viral theory is that panosteitis was first identified as a problem at the same time that modified live distemper vaccines became widely available on the market. Since wild distemper virus can be isolated from bone *tissue*, some researchers feel that there might be a link between distemper virus vaccine and panosteitis, however, more research in this area will need to be done before any serious speculations can be made.

Another theory is that panosteitis might have a genetic link. Because of the greatly increased incidence in certain breeds and families of dogs, it is very likely that there is a genetic component involved in this disease.

Lately, there have been some claims that nutrition, particularly protein and fat concentrations in the diet, may have an impact on the incidence of the disease. But here again, more research needs to be done to substantiate these claims. Most likely this is a multifactorial disease that has several different causes including viral, genetic, and possibly nutritional.

What are the symptoms?

Presenting symptoms include a history of *acute* sudden lameness not associated with any trauma. It is usually a large breed male dog between the ages of 6 to 18 months. There are periods of lameness lasting from 2 to 3 weeks and it may shift from leg to leg. The most commonly affected bones are the radius, ulna, humerus, femur, and tibia, though the foot and pelvic bones may also be involved. The dog may show a reluctance to walk or exercise. When the affected bones are squeezed, the dog reacts painfully. Occasionally, affected dogs will have a fever, tonsillitis, or an elevated white blood cell count.

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How is panosteitis diagnosed?

Panosteitis is often diagnosed based on a combination of presenting signs. Rarely are and radiographs (x-rays) needed. The presenting symptoms are listed above. If a dog is suspected of having panosteitis, then radiographs can be done to confirm the diagnosis. **WARNING: Some radiologists have difficulty correctly diagnosing panosteitis. They can misdiagnose the problem as being something more severe.** Individual radiographs of each affected limb should be taken. Often, radiographs of the unaffected limbs are also taken to compare the bone changes. In early forms of the disease, a subtle increase in bone density is observed in the center part of the affected bones. During the middle part of the disease, the bone becomes more patchy or mottled in appearance and the outer surface of the bone may appear roughened. In the late phase, the bone is still slightly mottled, but is beginning to return to a more normal appearance.

How is panosteitis treated?

There is no specific treatment for the disease. Surgery is never needed as a treatment for panosteitis. Since this condition is often very painful, painkillers such as buffered aspirin or carprofen (Rimadyl) are recommended. These products are used as needed to help control the pain. Antibiotics are not routinely used unless there are indications of concurrent infections. In severe cases, steroids are used, but because of the potential long-term side effects of these drugs, painkillers are often tried first. This disease is self-limiting and after it runs its course, there are no long-term side effects or need for further treatment. As mentioned earlier, the disease usually lasts for two to five weeks, but can last longer. There are several conditions with similar symptoms, so if a dog continues to have symptoms after the normal period of time or is not responding to treatment, she should be reevaluated.