Bone Diseases in Growing Puppies, Part 2

By Dr. Karen Becker

Hi. This is Dr. Karen Becker. Today we are going to discuss part two of bone diseases in puppies and young dogs. We will be discussing panosteitis, HOD, and OCD.

Panosteitis is a common condition in several large breed of dogs, and it occurs between six and 18 months of age. Usually it’s seen in more frequently in males than in females. Symptoms can last from two to five months, but it can actually go on for as long as 18 months in certain breeds. There are some breeds that are more predisposed to panosteitis than others. Those include German shepherds, Great Danes, Dobermans, Golden retrievers, Labradors, Rotties and Basset hounds.

Panosteitis: Possible Causes, Symptoms, and Diagnosis

The underlying cause of panosteitis is unknown, but there are lots of theories that have actually been debunked over the years, including bacterial and viral infection. Most vets agree that because the condition primarily occurs in large, heavy-boned and giant-breed dogs, there’s probably a component of genetics, growing pains, nutrition, and metabolism that are all involved.

Acute sudden lameness that isn’t a result of trauma is the most common symptom. Lameness can be intermittent and can move from leg to leg, and so the shifting leg lameness can range from a mild limp to actually the dog choosing to not bear weight on the leg at all to avoid significant pain. Episodes can last for two to three weeks or can continue for months at a time. The dog may show hesitance to walk, run, jump, or exercise. If the affected bone is squeezed, the dog will exhibit pain as well.

Some dogs run a low-grade fever during episodes of panosteitis, and some dogs have elevated white blood cells count on blood work. The condition typically affects the radius, ulna, humerus, femur, and tibia, but once in a while their condition can affect the foot and pelvic bones as well.

In addition to symptoms, X-rays can be used to confirm the diagnosis. In the early stages of panosteitis, the condition can result in a slight increase in the bone density in the center part of bones on X-ray. Midway through the course of the disease, the bone can appear irregular and blotchy with a rough exterior. As the condition clears up or resolves, the bone can remain somewhat blotchy looking, but otherwise it can take on a more normal appearance.

Addressing Panosteitis

Unfortunately, there isn’t a magic cure for panosteitis. Literally, it has to run its course, but pain – when it’s present – should be carefully controlled. There’s no indication for antibiotics or steroids with this particular condition.

I have found that proteolytic enzymes are very beneficial for dogs in terms of naturally controlling pain and inflammation. I also use homeopathic calcarea carbonica and arnica for these cases. I also use Standard Process Musculoskeletal Support with really good success.
I discourage intense play or exercise on hard surfaces during a puppy’s active growth phase, and recommend feeding a species-appropriate diet that promotes slow but consistent growth, versus any type of puppy chow or any brand of puppy chow that promotes a more rapid skeletal development.

HOD: Possible Causes, Symptoms, and Diagnosis

HOD, which is hypertrophic osteodystrophy, is another bone disease affecting young, large-breed dogs. It has several other names. The most common is HOD, but we also call it skeletal scurvy, Moller-Barlow disease, and osteodystrophy type 2.

Dogs that develop this disease have severe lameness and pain, and unfortunately, it comes on in more than one leg. HOD is most often seen in large and giant-breed dogs, like panosteitis. It can occur in puppies between three and six months of age most commonly. Like other bone diseases, it is more common in males than in females. There’s no specific large or giant-breed that is more likely to acquire HOD than another, and there doesn’t seem to be a really strong genetic link or strong evidence of a genetic link at this time.

Puppies with HOD will have painful swelling of the growth plates in the leg bones, most commonly the radius, ulna, and tibia. There may be lameness and reluctance to move. Lethargy and loss of appetite are also common, along with intermittent fever that can actually become quite high. Like panosteitis, symptoms often come and go, ultimately resolving on their own in most cases. However, if a dog has swelling of the growth plates that occurs long enough, permanent damage to the growth plates can occur.

A definitive cause of HOD hasn’t been discovered. Bone infection can be present, but dogs suffering from this condition have also shown lower blood levels of vitamin C than healthy dogs, so a nutritional component is also thought to play a part. Interestingly, excessive dietary supplementation has also been suggested, pointing out the important fact that animals need balanced nutrition and not wads of vitamin and mineral supplements that can actually cause nutritional imbalances.

Consistent, low, steady, and moderate growth rates – puppies growing slowly and consistently is a much better approach to help reduce the incidence of HOD than a fast growth rate for puppies and developing dogs that are large or giant breeds.

A definitive diagnosis is made with X-rays. Veterinarians X-ray the growth plates, and what we see is a very thin, dark line at the ends of the involved bones.

This condition causes a vascular impairment that leads to the ossification failure of cartilage. So basically, bones don’t harden like they should. Therefore, the bones are not as strong as what they should be. Occasionally, HOD causes changes in the skull and teeth as well, but certainly more common in the long bones.

Addressing HOD

Unfortunately, there isn’t a specific treatment for HOD. The condition is very painful, so pain relief and inflammation management is really important. I use the same safe plant sterols, proteolytic enzymes, homeopathics, and musculoskeletal support for panosteitis as I do for HOD.
It is important that you restrict exercise, and I certainly recommend you feed a naturally anti-inflammatory diet to help control this condition.

OCD: Possible Causes, Symptoms, and Diagnosis

The last condition that we're going to discuss is osteochondritis dissecans, also called OCD. OCD is actually a disease of the cartilage around various joints in a dog’s body.

A joint is the point where two bones meet and move against each other. This meeting point of the joints has a smooth covering of cartilage that actually acts as a buffer to protect underlying bone. If anything interferes with the smooth cartilage surface, it causes pain when the joints move.

Dogs with OCD have abnormal cartilage production. Instead of attaching to the bone, the cartilage separates, dries out, and loses its integrity. This unhealthy cartilage can develop cracks or flaps that can eventually break off and float around the joint space. These pieces that break off are referred to as “joint mice.”

OCD is primarily a condition of large and giant-breed dogs, again males being more common than females. And the age that it begins to occur is oftentimes four to 10 months.

OCD is thought to be caused by many factors including trauma to the joints, genetics, rapid growth, hormone imbalances, and nutritional imbalances. There appears to be a clear link between parents and offspring, and certain breeds and lineages are much more likely to develop the condition.

OCD is usually seen in the shoulder, elbow, knee, or ankle – the ankle is also called the tarsus in pets – with the shoulder and the knee being the most common sites. Some dogs barely limp, you can barely tell that there’s a problem, while other dogs are unable to put any weight on the affected limb.

Lameness gets worse after exercise and improves with rest. If the shoulder is affected, oftentimes you can see a shortened forelimb stride, which is a really common symptom. Sometimes OCD strikes both limbs at one time, making the dog actually totally reluctant to walk or sometimes unable to move at all.

Changes in the bone beneath the damaged cartilage are often visible on X-ray, which is how the condition is most frequently diagnosed. OCD is treated either medically or with surgery. Conservative treatment for dogs with early mild symptoms involves strict rest for one to two months, with no running or playing allowed. If there’s pain, anti-inflammatories and pain medications are given, and surgery to remove the defective cartilage is oftentimes recommended for dogs with severe symptoms or large lesions.

Addressing OCD

Obviously, reducing the likelihood of these skeletal diseases from occurring is the best approach. I recommend a slow growth diet which means you have to skip the grains and carbohydrates, which are energy dense and promote rapid growth. I also recommend that you don’t over vaccinate. This means that two to three well-timed puppy vaccines and most dogs are protected for life from parvo, distemper, and adenovirus.
I really recommend that you take care exercising your puppy, and I discourage jumping activities until all growth plates are closed.

I also recommend that you take extra care to avoid any type of trauma or injury to the limbs, including covering slick floors with runners. I have found in my practice that a lot of slipping, which puppies do naturally because they’re clumsy, their bodies are all loose and cartilaginous, and they tend to be not really coordinated -- puppies that slip, trip, and fall regularly are much more predisposed to these conditions, so covering up those slick floors is an important part of reducing trauma to the growth plates.

I don’t recommend that you keep puppies housed on hard surfaces like concrete. I do recommend that you do maintenance chiropractic care for your growing pup every three months during the period when his frame is developing. By keeping your dog’s growing body aligned, you can certainly help compensatory changes and joint stress.

Certainly last but not the least, I strongly recommend that you supply chondroprotective agents, which are joint supplements such as eggshell membranes, that nourish cartilage and improve the integrity of a growing puppy’s joints.