Veterinary Procedures Used to Diagnose Joint Disease in Animals

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Information from a number of sources is often necessary to diagnose joint disease in cats and dogs. Some diagnoses can be quite evident, while others may require sophisticated testing and procedures.

History

The veterinarian needs an adequate history of the problem to aid in the diagnosis of arthritis and joint disease. Questions commonly asked include:

- What signs of disease have you seen?
- What limitations is the pet showing, e.g., can it jump into the car or onto a chair, go down steps, put weight on all limbs?
- Did the condition start suddenly or over a period of time?
- How long has it been going on?
- Since you first noticed it, is the problem getting better or worse?
- Is the problem worse or better after exercise?
- Has more than one limb been affected?
- Is the pet showing any other signs of illness besides those related directly to the joint, e.g., is the pet eating and drinking normally?
- Does the animal have a specific use, e.g., field dog, show animal, sled dog?
- Do you know of any injuries the pet has had?
- What previous illnesses or medical conditions has the pet had?
- If the pet is young, are other littermates affected?
- What vaccinations has the pet received, and when?
- Is the pet taking any medications or supplements?
- What does the pet eat?
- Did the parents of the pet have any muscle, nerve, joint, or bone disease?

Physical exam

The veterinarian will examine the whole animal. Do not be surprised if the veterinarian examines all the rest of the animal before concentrating on the affected area. Mistakes can be made, if we do not look at the entire animal. It is also helpful to start examining the nonpainful areas and then move on to those that show discomfort.

The exam will generally include:

- Weighing the animal
- Taking the temperature
- Listening to the heart and lungs
- Checking eyes, ears, nose, etc.
- Examining the skin for any trauma or puncture wounds
- Examining all the limbs
- Watching the animal move about the exam room or outside on the grass
- Performing special manipulations of various body parts, e.g., neck, limbs

If the pet is in a lot of pain, the veterinarian may suggest lightly anesthetizing the animal so a more complete exam can be made.

Radiographs

In almost all cases of joint disease, radiographs (x-rays) can provide valuable information to confirm a diagnosis, assess the extent of the injury, and determine the proper treatment.

Many times, the changes in the joint may be extremely subtle. Therefore, it may be necessary to also radiograph the opposite 'normal' leg, anesthetize the animal so he is perfectly still when the radiographs are taken, take the radiographs of the joint from different angles, inject dye into the joint and then retake the radiograph and/or submit the radiographs to an expert veterinary radiologist for interpretation. Sometimes, special radiographic equipment which is available only through university veterinary teaching hospitals or referral centers is needed.

In addition to radiographs, other procedures such as ultrasound, CAT scans, and MRI's are sometimes used.

Complete blood count (CBC)

A complete blood count (CBC) examines the different types of cells in the blood. This can give the veterinarian important clues on what may be causing a lameness. For instance, with a bacterial infection, certain white blood cells which help fight disease are often increased.

Chemistry panel

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A chemistry panel will check for various substances in the blood such as glucose, calcium, and phosphorous. A chemistry panel also includes tests that check the health of the liver, kidneys, and other organs. Chemistry values would be abnormal in diseases such as diabetes mellitus, hyperparathyroidism, and some infectious diseases.

Serologic tests

Serologic tests are tests performed on the liquid portion of the blood to check for various immunologic diseases (e.g., rheumatoid arthritis) and infections (e.g., Lyme Disease). These tests are normally not included in the CBC or chemistry panel, and often have to be sent to a special laboratory to be performed.

Synovial fluid analysis

In some joint diseases, especially if there is swelling in the joint, a fine needle may be placed into the joint and a small amount of the joint (synovial) fluid is removed with a needle and syringe and then analyzed. The analysis will help determine if there is an infection, an immune system abnormality, or if trauma may have occurred. If there is a bacterial infection present, the fluid can be cultured to determine the type of bacteria present. Tests can also be done to determine which antibiotic would best kill that type of bacteria.

Examination of the joint and biopsy

In some instances, the above tests do not provide the information we need to make a firm diagnosis. In those instances, a biopsy, or small piece of the tissue lining the joint is removed and examined. A biopsy is especially helpful in determining if cancer or inflammation caused by an abnormal immune system (such as in rheumatoid arthritis) is present.

The biopsy may be obtained through arthroscopy, in which an endoscope is inserted into the joint through a tiny incision. Arthroscopic examination and surgery are being used more and more in human and veterinary medicine. Using an arthroscope, the veterinarian can examine the inside of the joint and obtain biopsy material.

In some cases, the joint may actually be surgically opened. This is called an 'arthrotomy,' and is used in small dogs and cats, whose joints are too small to examine arthroscopically. During an arthrotomy the joint can be examined, a biopsy taken, and repairs to the joint can be made, if necessary.

Summary

By compiling information from the history, physical exam, and special testing, the veterinarian is generally able to determine the cause of the arthritis and recommend the appropriate treatment.

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