

How to Do a Purrfect Feline Orthopedic Exam

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Performing an orthopedic exam in cats is, at best, a challenge for veterinarians. Cats are not always willing to cooperate with having their limbs palpated, flexed, and extended and may only offer the veterinarian a brief opportunity to perform the exam. Having a good, organized approach to enhance this short window of opportunity will facilitate successful completion of the exam. When performing an exam, it is important to keep in mind the common orthopedic injuries seen in cats. This will help generate a list of differential diagnoses and rule outs.

Trauma and osteoarthritis are the two most common orthopedic abnormalities seen in cats. They are often easily differentiated based on physical exam and the patient's history. However, one must keep in mind there are other causes for orthopedic lameness and injuries. Neurologic abnormalities are often misinterpreted as orthopedic injuries and because of this, a complete neurologic exam must also be performed. Doing a neurologic exam in cats presents its own set of challenges and will not be discussed further here other than to state that this should also be done.

Osteoarthritis is considerably more common in cats than it is believed. In dogs, osteoarthritis is usually easily recognized but in cats the clinical signs are frequently less obvious. Signs of arthritis include reluctance to jump, decreased activity, and lameness. Hardie et al demonstrated that up to 90% of cats older than 12 years old had radiographic signs of osteoarthritis even though only 4% showed clinical signs of arthritis.¹ Godfrey showed that 22% of cats greater than 1 year old have radiographic changes consistent with osteoarthritis although most had no clinical signs.² These studies confirm the fact that osteoarthritis is more prevalent than cats will illustrate clinically.

Physical exam findings in cats with arthritis are similar to those in dogs. Pain on flexion and extension of joints with crepitus is often noted as is decreased range of motion of joints. Many of these cats have some degree of muscle atrophy surrounding these joints and many of these patients are overweight. The hip, stifle, tarsus, and elbow are the joints most frequently affected.

Trauma is unfortunately all too common a cause for feline lameness. Injuries such as bite wounds from dogs and other cats, and trauma from vehicular trauma or high-rise syndrome are common. Traumatic injuries in the form of fractures and luxations are often easily palpated as pain, soft tissue swelling, and joint instability. Bite wounds and lacerations over long-bone instability are commonly observed. These patients are often non-weight bearing on the injured limb, but many cats refuse to try to walk or get up when a gait exam is attempted.

When performing an orthopedic exam, it is best to try to ascribe to the “Fear Free” principles as much as possible. However, this may not always be possible in many cases. Taking one’s time and using as little restraint as possible is ideal. Cats with an orthopedic injury may not allow much handling and manipulation. In these cases, use of sedation may be necessary to complete the exam and provide the cat a source of pain relief as well as reduce their anxiety. I prefer to use Kitty Magic (Dexmedetomidine/Ketamine/Butorphanol) given either IV or IM to accomplish this. My goal is to lightly sedate the cat to a point where they will allow manipulation of their legs with as little pain and stress as possible.

Prior to sedating a cat for an orthopedic exam, I like to assess the patient’s gait. This is sometimes difficult in cats as they may not wish to cooperate for this. When doing so, try to use as cat-friendly a room as possible. It is ideal to place the cat in the center of the room and allow them to walk to a place where they may feel safe or hide. You may only get one or two chances to do this so keen observation becomes necessary. Cats may elect to either just lay down in the spot they are placed, or slink low to the ground to where they choose to go. In both cases, gait assessment may not be accurate. Owner videos are often very helpful in this regard. Allowing the cat to move around the room on their own may afford you your best opportunity to see how they walk, jump up on a chair, or jump down. By observing how they use each of their limbs, one can detect any gait abnormalities when present.

To perform a complete orthopedic exam, it is best to make sure that all four limbs are individually palpated. I prefer to palpate the clinically affected leg last (when possible). By palpating each of the long bones individually and flexing/extending each joint individually (isolating each joint when doing so) it is possible to fully assess each leg. During these manipulations/palpations I am assessing each bone for pain and each joint for effusion, crepitus, pain, asymmetry of range of motion, and periarticular thickening/muscle atrophy. Comparison to the contralateral limb when a unilateral injury is present will help serve as a control when an abnormality is suspected.

I prefer to start evaluating each leg by working distally to proximally. In this manner I can determine which location in the limb is affected without confounding findings of other joints. For instance, it is very difficult to fully assess the shoulder’s full range of motion without causing flexion/extension of the elbow. The same can be said for assessing range of motion of the hip joint without causing concurrent flexion/extension of the stifle. If I assess the distal joints of the limbs first and find they are normal, I can determine whether any pain elicited from the proximal joints are affected or not. By looking at the clinically affected leg last, I hope to prevent any wind-up pain that may occur if pain in that limb had been elicited prior to evaluating other legs.

When evaluating for lameness in the forelimb, don’t forget to palpate the cervical region. A root signature from a cervical injury may present as a forelimb lameness. A thoraco-lumbar or lumbosacral injury in the spine may present as a rear limb lameness. Careful palpation of the axial skeleton may unmask these areas as sources of the lameness.

Cranial cruciate ligament injuries are one of the most common orthopedic injuries seen in dogs. In cats, however, this injury is decidedly less common. When observed, the typical presentation is in middle-aged to older, frequently overweight cats. Meniscal injuries may or may not occur concurrently. Cats with cranial cruciate ligament injuries will show physical exam findings similar to dogs with positive cranial drawer noted. Radiographs of stifles in these patients reveal effusion, cranial tibial translocation, and sometimes dystrophic mineralization at the ligament's insertion on the tibia. This injury may also be noted in conjunction with other injuries such as those seen with high-rise syndrome.

Patellar luxations are very uncommon in cats even though cats demonstrate some "normal" laxity of their patellae. Traumatic patellar luxations may also occur with other injuries. Congenital patellar luxations have been reported in Devon Rex and Abyssinian breeds.

Hip dysplasia in cats is rare compared to dogs. When it occurs, it is often a congenital disorder and is described to be more prevalent in Main Coon cats. Clinical signs of lameness, pain on palpation of the hips, and licking/chewing at the pelvic area are described. Diagnosis is confirmed by radiography as in dogs.

Feline knees and teeth syndrome is a condition associated with non-traumatic patellar fractures along with the presence of deciduous teeth and non-erupted permanent teeth. Other fractures around the stifle are also reported. This condition is seen as a manifestation of osteogenesis imperfecta with generalized skeletal osteopetrosis (bones that are abnormally dense and brittle). Male cats are more frequently observed, and cats are typically young (mean age 28 months, range 4m – 8y).³ On physical exam, cats are noted to have deciduous teeth, pain around the stifle region, and a rear limb lameness. Treatment by conservative management offers the best prognosis for these cases.³

Femoral metaphyseal osteopathy in young, male, neutered cats may present as a unilateral or bilateral rear limb lameness. No history of trauma is reported with this condition and cats are painful on palpation of their hips. Crepitus is noted on flexion and extension of the hips in these patients and radiographs will confirm the diagnosis. Treatment by FHO is often indicated.

In conclusion, an organized systematic approach to the orthopedic exam performed the same way every time will help clinicians localize the source to the correct limb and location. A list of differential diagnoses may then be developed. From there, further diagnostics such as imaging, arthrocentesis, and other diagnostics will help further elucidate the cause of the lameness.

References

Hardie, Elizabeth M., Simon C. Roe, and Fonda R. Martin. "Radiographic evidence of degenerative joint disease in geriatric cats: 100 cases (1994–1997)." *Journal of the American Veterinary Medical Association* 220.5 (2002): 628-632.

Godfrey, D. R. "Osteoarthritis in cats: a retrospective radiological study." *Journal of Small Animal Practice* 46.9 (2005): 425-429.

Langley-Hobbs, S. J. "Survey of 52 fractures of the patella in 34 cats." *Veterinary Record* 164.3 (2009): 80-86.