



Osteoarthritis in Cats: A More Common Disease Than You Might Expect



Thanks to the marvels of modern veterinary medicine, our pets are living much longer lives. With longer lives, however, come chronic diseases such as osteoarthritis. Osteoarthritis is a commonly recognized disease in dogs. However, it is now being recognized as a disease of geriatric cats.

Osteoarthritis is a degenerative condition of the joints in which the normal cartilage cushion in the joint breaks down. Eventually, adjacent bones rub against each other, causing pain, decreased joint movement, and sometimes the formation of bone spurs and other changes around the joint.¹ Osteoarthritis is a progressive disease; however, it can be actively managed so that the course of the disease is slowed and remaining joint function is preserved.

Physical diagnosis of osteoarthritis in cats is difficult even for experienced veterinarians. Cats, unlike most dogs, can tolerate severe orthopedic disease due to their small size and natural agility. Cats generally resent being physically handled or manipulated during clinical examinations. Thus, the examining veterinarian may have difficulty in determining whether a cat

is pulling its foot away because of pain or simply because it doesn't want to be touched.² Cats are also notorious for cowering on the examination table and remaining immobile. Due to these obstacles in diagnosing osteoarthritis in cats, veterinarians will often simply rely on the cat owner's observations that their pet is not moving around as well as it once did. Veterinarians will rule out osteoarthritis as a diagnosis by actually having the owners treat the cat for osteoarthritis and seeing if the owners note any improvement in their cat's quality of life.

Changes to osteoarthritis-affected joints in cats are usually subtle. Decreased range of joint motion, commonly seen in dogs, is uncommon in cats (in one study by Clarke and Bennett, published in the *Journal of Small Animal Practice*, 5 of 86 cat joints with osteoarthritis had decreased range of motion).³ Crepitus, a grinding/crunching sound or feeling in a joint, is also common in dogs, but uncommon in cats (no joints of the 86 joints in the same study had crepitus). Thickening of the tissues surrounding affected joints, however, is a common finding (58 of 86 joints in the previously cited study).

Clinical signs of osteoarthritis in cats include weight loss, loss of appetite, depression, change in general attitude, poor grooming habits, urination or defecation outside the litter pan, and inability to jump on and off objects.⁴ Surprisingly, lameness is not as commonly reported a clinical sign by owners as one would expect. Because joints are frequently bilaterally affected (meaning that if one elbow is affected, the other elbow is also affected), cats can compensate and appear to be walking normally.⁵ In the study by Clarke and Bennett evaluating clinical signs of osteoarthritis in 28 cats, 43 percent (12 cats) were described to be limping, 71 percent (20 cats) were described as unwilling to jump, and 67 percent (19 cats) had reduced height of jumps.⁶

The most frequently affected joints in cats are the elbows and hips, although shoulders and hocks have also been reported.⁷ Interestingly, arthritis of the vertebrae and sternum (the axial skeleton) is also common. In one study, 74 of 218 cats were diagnosed with osteoarthritis.⁸ Of the 74 cats, 21 (28.4 percent) had osteoarthritis in the limbs and the vertebrae, 24 (32.4 percent) had osteoarthritis in the vertebrae only, and 29 (39.2 percent) had osteoarthritis in the limbs only.

Several studies have been conducted evaluating radiographic changes associated with osteoarthritis in cats. In general, radiographic changes observed in cats with osteoarthritis are less severe than those observed in dogs with osteoarthritis. In many cases, cats with osteoarthritis have no

radiographic changes. For example, in one study evaluating 292 cats with osteoarthritis, 229 cats had no radiographic evidence of the disease, while evidence was present in the other 63 cats.⁹ In another study published in the *Journal of the American Veterinary Medical Association*, 10 of 100 cats with osteoarthritis had no radiographic changes.¹⁰ In an ongoing feline osteoarthritis study by world-renown veterinary pain expert, B. Duncan X. Lascelles, Assistant Professor of Small Animal Surgery at the North Carolina State University School of Veterinary Medicine, where he also directs the school's Integrated Pain Management Service, 73 percent of enrolled cats had evidence of osteoarthritis on radiographs.¹¹ The radiographic changes noted in the study were mild, but when the affected joints were examined at necropsy, significant cartilage loss was found. Thus, radiographic changes in cats, if present, may not correspond to the degree of osteoarthritis present in the joints.

A recently published study in the *Journal of Veterinary Internal Medicine* evaluated the association between radiographic and physical examination findings in 13 cats with osteoarthritis. A total of 208 joints were evaluated for evidence of pain and/or radiographic changes associated with osteoarthritis. Of these, 110 joints were identified as having osteoarthritis (55 joints were painful and 55 joints had radiographic changes). However, only 18 of the 110 joints had both clinical pain and radiographic changes.¹² Thus, painful joints did not necessarily correspond to radiographic findings.

Treatment options for cats with osteoarthritis are limited. Non-pharmaceutical treatment options include weight loss for overweight cats, increased exercise, and environmental accommodations (e.g., using litter pans with lower sides for ease of entering and exiting, and elevating food and water bowls, and providing soft bedding).¹³ With regard to pain relief, steroids have been used in the past; however, they have fallen out of favor due to side effects.¹⁴ The only approved non-steroidal anti-inflammatory drug (NSAID) for use in cats is Metacam® 5mg/mL Solution for Injection. However, it is approved for a one-time dose for the control of postoperative pain associated with orthopedic surgery, ovariohysterectomy, and castration in cats. Metacam® is not approved for any repeat dosing. Thus, no NSAID is currently approved for safe, long-term control of osteoarthritis pain in cats.

Development of pain assessment tool

Because pain relief is an important topic in veterinary medicine, the Center for Veterinary Medicine's Staff College recently hosted a day-long seminar

on pain recognition and pain measurement in dogs and cats by Dr. Lascelles (BSc, BVSc, PhD, CertVA, DSAS(ST), DECVS, DACVS). His current research is focused on acute and chronic pain in dogs and cats; namely, the mechanisms of pain, the best methods for clinically measuring both acute and chronic pain, and, once pain is identified, the best methods to alleviate it.

Pain in animals, particularly cats, is difficult to assess, and there are few validated pain assessment tools. Dr. Lascelles discussed efforts to address these problems. He described the various lameness scales and assessment tools used in canine and feline pain studies. Currently, much of the data obtained from canine and feline pain studies are “subjective,” meaning that the observer introduces some personal bias when recording pain assessments. An example of a subjective tool is a questionnaire. Researchers, including Dr. Lascelles, are trying to develop more “objective” tools for pain assessment to greatly decrease personal bias. Currently used objective tools include force plate analysis (measures the amount of force a limb generates at one instant in time) and pressure-sensitive walkways (that indirectly measure the amount of force generated at one moment in time).

Dr. Lascelles is developing a new objective tool, a collar-mounted activity monitor, for use in measuring animal activity levels. In general, animals with osteoarthritis have decreased mobility and activity. Therefore, an objective tool that could be used to detect differences in pre- and post-pain-treatment activity would be useful in assessing the effectiveness of new pain drug products for animals. Dr. Lascelles conducted a study using activity monitors to assess the effectiveness of NSAID treatment on 13 client-owned cats with osteoarthritis. During the study he compared the pre-treatment and during-treatment values obtained from the collar-mounted activity monitor with pre-treatment and during-treatment client questionnaire answers regarding cat activity. Overall, the client answers and the activity monitor values generally corresponded. Thus, the study provided some early validation for use of collar-mounted activity monitors to assess pain. Further evaluation and comparison of activity monitors with other currently used assessment tools is needed before activity monitors can be considered fully validated objective pain assessment tools.

Conclusion

Diagnosis of osteoarthritis in cats is difficult even for the experienced veterinarian. Thus the disease remains largely underdiagnosed and undertreated. However, as new methods of pain assessment are developed,

osteoarthritis in cats may soon become a readily recognized and actively managed disease, thus alleviating the silent suffering of many geriatric cats.

Endnotes

- ¹ National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) of the National Institutes of Health. Handout on Health: Osteoarthritis. May 2006. NIH Publication No. 06-4617.
- ² Clarke SP and Bennett D. Feline osteoarthritis: a prospective study of 28 cases. 2006. Journal of Small Animal Practice. 47(8): 439-445.
- ³ Ibid.
- ⁴ Hardie EM. Management of osteoarthritis in cats. 1997. Veterinary Clinics of North America: Small Animal Practice. 27(4): 945-953.
- ⁵ Ibid.
- ⁶ Clarke and Bennett, pp. 439-445.
- ⁷ Ibid.
- ⁸ Clarke SP, Mellor D, Clements DN, et al. Prevalence of radiographic signs of degenerative joint disease in a hospital population of cats. 2005. Veterinary Record. 157:793-799.
- ⁹ Godfrey DR. Osteoarthritis in cats: a retrospective radiological study. 2005. Journal of Small Animal Practice. 46:425-429.
- ¹⁰ Hardie EM, Roe SC, and Martin FR. Radiographic evidence of degenerative joint disease in geriatric cats: 100 cases (1994-1997). 2002. Journal of the American Veterinary Medical Association. 220:628-632.
- ¹¹ Lascelles BDX, CVM Staff College lecture, March 27, 2008.
- ¹² Lascelles BDX, Hansen BD, Roe S, et al. Evaluation of client-specific outcome measures and activity monitoring to measure pain relief in cats with osteoarthritis. 2007. Journal of Veterinary Internal Medicine. 21(3): 410-416.
- ¹³ Hellyer P, Rodan I, Downing R, et al. AAHA/AAFP pain management guidelines for dogs and cats. 2007. Journal of the American Animal Hospital Association. 43:235-248.
- ¹⁴ Caney S. Feline Arthritis. 2007. Veterinary Focus. 2007. 17(3):11-17.