

Osteoarthritis in Cats

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Osteoarthritis is a common radiographic finding in older cats, with a prevalence of up to 90% in appendicular joints. Many cats experience impaired mobility from osteoarthritis; however, there are more and more treatment options available, including diet modification, environmental modification, medical therapy, and physical rehabilitation. Continuing challenges involve accurate diagnosis and outcome assessment of treatment, but considerable progress has been made in the last decade.

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Keywords: cat, osteoarthritis, degenerative joint disease, appendicular joint

Feline osteoarthritis (OA) is an important and difficult problem to deal with in cats. Interest in feline OA has stemmed both from observations that older cats have difficulties with mobility, and that it is common to observe radiographic evidence of OA in multiple joints of older cats.¹ However, these observations leave us with more questions than answers. How do we know if the OA seen radiographically is painful? What causes it, at what age can it be diagnosed, and is it preventable? How do we best diagnose it, and what can we use to treat? Finally, if we do treat, how do we assess whether that treatment is effective?

OA is a degenerative process that leads to changes in all aspects of a synovial joint. A synovial joint is composed of the articular cartilage, synovial membrane, subchondral bone, synovial fluid, and periarticular soft tissues.² Although sometimes the terms OA and degenerative joint disease (DJD) are used interchangeably, DJD can refer to any abnormality of either synovial or cartilaginous joints, such as the intervertebral disks.³ For purposes of this review, we will focus on appendicular synovial joints.

OA can be initiated in 2 ways: either by normal forces being placed on an abnormal joint (for example, hip joint laxity associated with hip dysplasia), or by abnormal forces acting on a normal joint (traumatic articular fracture). In addition, some authors describe primary versus secondary OA, with primary OA being idiopathic in origin and possibly associated with the “wear and tear” thought to occur with aging.³ Until this decade, little attention has been paid to OA in cats, and it was thought to be rare. In one of the first major

textbooks devoted solely to small animal orthopedics published in 1985, arthritis in cats was only mentioned in association with the breed-associated cartilage defects (Siamese mucopolysaccharidosis VI and Scottish Fold osteochondrodysplasia), and infectious causes.⁴ However, a great deal of work has been done in the past 10 years, and feline OA has been increasingly recognized as a serious clinical problem, particularly in older cats, and is actively being researched as to prevalence,^{1,5} underlying cause,^{6,7} treatment,^{8–11} and outcomes assessment.^{12–15}

Diagnosis

The breed-related joint diseases can be spectacular both in their clinical presentations and radiographic appearance. The forward-folded ears of the Scottish Fold purebred cat are an outward sign of a generalized defect in cartilage formation. Scottish Fold osteochondrodysplasia is an autosomal incomplete dominant disorder characterized by skeletal deformities such as a short, thick, and inflexible tail, and shortened, splayed feet. The carpi and tarsi are irregular in size and shape and develop progressive, severe OA (Fig 1) that is associated with a variety of clinical signs including lameness, reluctance to jump, and stiff, stilted gait.^{16–18}

Mucopolysaccharidosis type VI is an inherited autosomal recessive storage disease that has been identified in Siamese cats as well as domestic shorthair cats. Clinically, affected cats may have a broad and flattened face, corneal opacities, stunted growth, and clinically evident paraparesis or lameness. Radiographically, misshapen vertebral bodies with DJD of the articular facets as well as laxity and OA of the hip joints may be observed.¹⁹ Two disease-causing mutations have been identified in cats, and DNA testing can be used to identify carriers.²⁰

Hypervitaminosis A is a metabolic bone disease that was commonly identified in cats, associated with an all-liver diet, in the 1960s. Although classically the disease affects the spine, nonvertebral cases with only affected hip and stifle joints have been reported. A relatively recent case was reported in Spain in an 8-year-old female domestic shorthair on

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1527-3369/06/0604-0171\0/0

doi:10.1053/j.tcam.2010.09.004



Figure 1. Lateral radiographic projection of the carpus (A) and hock (B) in a 7-year-old female spayed Scottish fold cat. The owner of this cat did not perceive any lameness or mobility problems.

a diet of raw liver and commercial cat food.²¹ The cat had bilateral ankylosis of the hip and stifle, was poorly groomed and, radiographically, massive bony proliferations were observed.

Several retrospective studies have identified a high prevalence of appendicular OA in cats. One study evaluating 100 cats over 12 years of age found that 64 had DJD in one or

more appendicular joints, with the elbow being the most severely affected (based on radiographic appearance, not numbers of elbows affected).¹ A second study evaluated radiographs of 292 cats over 1 year of age where at least one synovial joint could be visualized.⁵ In that study, 22% of cats showed evidence of radiographic OA, with only 11% of affected cats having a potential cause for their OA identified. The population of cats with radiographic evidence of OA was significantly older than the control population, and elbow, hip, and stifle joints were most frequently affected, with

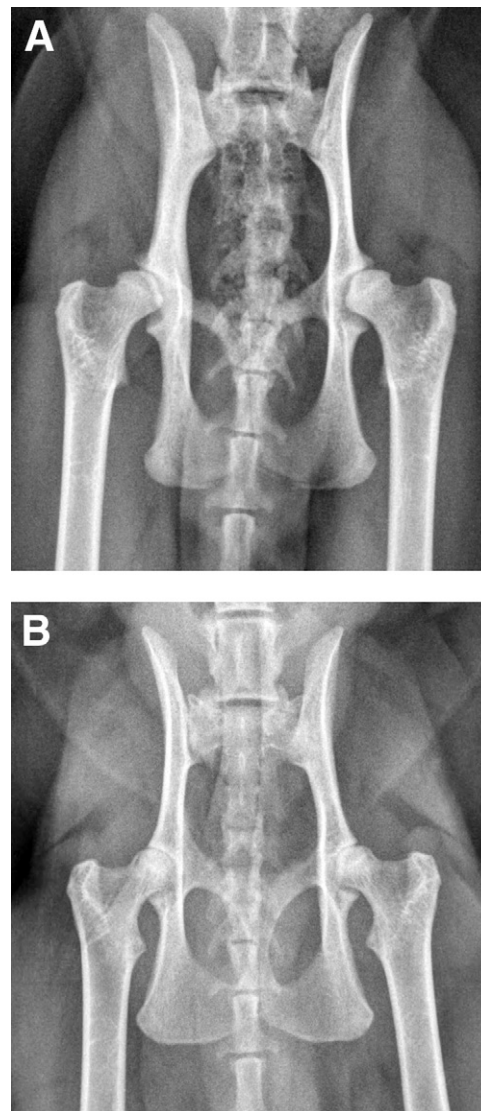


Figure 2. Ventrodorsal projection of the pelvis of 2 different cats. The cat in part A is a 2-year-old female spayed domestic shorthair cat with radiographic evidence of hip dysplasia. This cat exhibited pain on extension of the hips. Note the laxity and incongruity of both hips, as well as the proliferative changes of the craniodorsal acetabulae. This cat also had a littermate with hip dysplasia. The cat in part B is a 6-year-old intact male Maine Coon with normal hip conformation as a comparison.

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