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Although very subjective, the presence of subchondral effusion are generally less apparent in feline OA. Soft tissue thickening and synovial inflammation of feline OA, particularly in the elbow joint, compared to other species. Apparent subchondral sclerosis may be due to the increased thickness of the bony trabeculae beneath the articular surface, by osteophyte formation at the articular margin or by soft tissue mineralization superimposed on the bone. Most osteophyte formation appears to occur on the medial side of the joint, the distal humerus and proximal ulna. It is important to remember the sesamoid bone in the supinator muscle of the feline elbow joint. This bone is present in all elbow joints but is only radiographically visible in about 40% of normal joints. However, this sesamoid bone does become more obvious in an osteoarthritic joint and is often increased in size. It is sometimes difficult to distinguish the sesamoid bone from soft tissue mineralization.

Radiographic Prevalence of DJD Disease in Cats
The radiographic prevalence of DJD disease in cats is significantly high. Clarke and colleagues (2005) examined 218 cases which included cats of all ages (mean age 6.5 years) and found a prevalence of appendicular osteoarthritis of 16.5% and spondylotic deformans of 15% (1). The total prevalence of radiographic DJD including all categories was 33.9%. The prevalence of OA increased significantly with age and the hip and elbow joints were most commonly affected. In an earlier study by Hardie et al (2002) the radiographic prevalence of DJD was found to be 90% although these authors only examined cats older than 12 years of age (mean age 15.2 years) (1). They found a prevalence of 26% axial DJD, 10% appendicular DJD and 54% appendicular and axial DJD together. The elbow was most commonly affected. Godfrey (2005) examined 292 cats with an average age of 9.5 years but only assessed the appendicular skeleton (2). He found a prevalence of 22% with elbows, hips and stifles most commonly affected. 27% of cats had one joint affected, 59% two, 9% four and 5% three joints.

Osteo Arthritis
Most cases of OA in the cat appear to be of a primary or idiopathic nature. Secondary OA can be associated with previous trauma and hip dysplasia certainly results in hip OA. Acromegaly is a reported cause of secondary OA in the cat (3).

The presence of osteophytes is the key radiographic feature of feline OA although these can sometimes be difficult to identify. Soft tissue mineralization and intra-articular mineralised bodies are more common features of feline OA, particularly in the elbow joint, compared to other species. Soft tissue thickening and synovial effusion are generally less apparent in feline OA.

Although very subjective, the presence of subchondral sclerosis beneath the ulnar articular notch is a key feature of feline elbow OA. Sclerosis is more easily assessed in the feline patient compared to other species. Apparent subchondral sclerosis may be due to the increased thickness of the bony trabeculae beneath the articular surface, by osteophyte formation at the articular margin or by soft tissue mineralization superimposed on the bone. Most osteophyte formation appears to occur on the medial side of the joint, the distal humerus and proximal ulna. It is important to remember the sesamoid bone in the supinator muscle of the feline elbow joint. This bone is present in all elbow joints but is only radiographically visible in about 40% of normal joints. However, this sesamoid bone does become more obvious in an osteoarthritic joint and is often increased in size. It is sometimes difficult to distinguish the sesamoid bone from soft tissue mineralization.

Hip Dysplasia
Although hip dysplasia is well documented in the cat, it only accounts for about 22% of cases of hip OA (4). This of course is influenced by how hip dysplasia is presently defined in the cat. Kellar et al (1999) reported a 6.6% prevalence of hip dysplasia in a hospital population of cats and demonstrated no statistical difference in the prevalence of hip dysplasia between domestic short hair and pure bred cats and no affect of sexual status on radiographic hip dysplasia (5). The Maine Coon breed is reported as having a prevalence of 18% (6). Increased joint laxity within the feline hip joint in cases of dysplasia can be associated with primary OA and by soft tissue mineralization superimposed on the bone. Most osteophyte formation appears to occur on the medial side of the joint, the distal humerus and proximal ulna. It is important to remember the sesamoid bone in the supinator muscle of the feline elbow joint. This bone is present in all elbow joints but is only radiographically visible in about 40% of normal joints. However, this sesamoid bone does become more obvious in an osteoarthritic joint and is often increased in size. It is sometimes difficult to distinguish the sesamoid bone from soft tissue mineralization.
often appears to be a line of separation between the osteophyte and the edge of the glenoid and this probably represents a situation where the osteophyte has not become completely incorporated within the epiphysis of the bone. Alternatively it may represent a synovial osteocartilaginous lesion which has come to form part of the articular surface of the glenoid. Such an appearance has been described as a fracture of an osteophyte. The clavicle is very obvious in the feline shoulder and should not be confused with a pathological lesion. The cat also has a very prominent coracoid process of the glenoid and its appearance is influenced by radiographic positioning; it is easily mistaken as new bone formation on a caudo-cranial film.

OA of the stifle joint
OA of the stifle joint is characterised by osteophyte formation on the patella, around the trochlear margin and on the caudal edge of the tibia. Soft tissue mineralization is also often seen in the arthritic stifle joint. It is important to remember that the cat generally only has one fabella (lateral) visible on the radiograph and this can be a site of new bone deposition in the arthritic joint. It is common in the cat to see mineralization within the cranial pole of the medial meniscus and this may represent a degenerative calcification within the meniscus or possibly the presence of a meniscal sesamoid bone (also called a lunula) [10,11]. In most cases mineralization of the medial meniscus is an incidental finding of no clinical significance. Mineralisation within the cranial cruciate ligament is also occasionally seen. Enthesiophyte formation at the attachment of the patellar ligament on the tibial tuberosity is commonly seen. This may occur as part of stifle OA but again is often seen as a solitary lesion which appears to be of no clinical significance. OA of the hock is characterised by osteophyte formation and soft tissue mineralization.

Vertebral Column
The main form of degenerative joint disease affecting the vertebral column is spondylodisc degeneration characterised by bony outgrowths or spurs (enthesiophytes, syndesmophytes) on adjacent vertebrae at the intervertebral disc spaces, mainly on the ventral aspect. Spondylosis degeneration was found in 15% of cats by Clarke et al (2005) [1], considerably less than that reported by Beadman et al (1964) [67.7%] [12] and by Reid and Smith (1968) [68%] [13]. Both these latter studies used much older cat populations. Clarke and colleagues identified T6 to T10 as being the most commonly affected intervertebral disc joints [1]. The clinical significance of spondylodisc degeneration is uncertain.

Sternum
Degenerative changes of the sternum were also reported in the study by Clarke et al (2005) [1]. 27 of 155 sternal segments were found to have some type of deformity thought to be a degenerative change (17.4%).

References