

Small animal *Review*

Summary: Cystic and solid myxomatous lesions may develop unilaterally in the elbow of older cats with pre-existing, usually bilateral degenerative joint disease. The cysts and solid myxomas may reflect a spectrum of disease, ranging from degenerative joint disease at one end, through synovial herniation and development of periarticular cysts to neoplastic transformation and the development of a myxoma at the other. The lesions are slowly progressive and locally infiltrative, but do not appear to metastasise and show a good prognosis. <http://doi.org/10.12968/coan/2020.0067>

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Feline synovial cysts

A study by Craig et al (2020) describes the clinical and pathological features of synovial cysts and synovial myxomas in the cat. Synovial cysts may be a complication of degenerative joint disease (DJD). With DJD, there is damage and loss of articular cartilage and, as a consequence of increased joint laxity, periarticular bony proliferation. Herniation of synovial membrane, possibly because of increased intra-articular pressure and damage to the joint capsule, may occasionally lead to the development of synovial cysts. Data on synovial myxomas in the cat are scant. In the dog, synovial myxomas, which generally develop in the stifle and digits of large breed, middle-aged dogs, comprise round nodules of stellate cells within a myxomatous matrix that can invade adjacent bone, muscle, and spread along fascial planes. Metastatic disease in the dog is reported by the authors to be uncommon.

This study presents data from 16 cases identified from 2002 to 2018 from the pathology databases at the University of Tennessee College of Veterinary Medicine and Athens Veterinary Diagnostic Laboratory. The cats ranged in age from 5–21 years, with 14/16 cases aged 9 years or older, and generally presented for a slowly progressive unilateral mass lesion around a joint. In 12 cases the elbow was involved, with one case each involving the carpus, antebrachium, tarsus and stifle. The 11 cats that were lame also had associated DJD.

Where the duration of clinical signs was recorded, they ranged from 9 months to 2 years before presentation.

Physically, the lesions are described as multilobular, cystic, fluctuant, or firm swellings, that slowly enlarged, in the case of the elbow lesions, extending down the antebrachium and along the humerus over periods of years. Radiography in five cases showed bilateral DJD with osteophytes, but no bone lysis, and the mass lesions showed soft-tissue opacity. Six cats that were not radiographed, were reported to have DJD based on physical and clinical examination. Fluid aspirated from the lesions was clear and viscous, grossly resembling synovial fluid, and was of low cellularity with only scattered macrophages.

Histologically, the masses consisted of cysts lined by synovial epithelium (three cats), nodular populations of stellate cells within a myxomatous matrix (two cats), or a combination of both (11 cats). The stellate cells and the epithelium lining the cysts showed no features of malignancy. No treatment was provided in seven cases and no data were available for three cases. For those that received treatment, amputation was carried out in three cases, debulking in one, radiation therapy in one and acupuncture in one. Survival data were available for 13 cats. Five cats alive at the end of the study had survived for 1.5–4 years. One cat survived for 5 years but was then lost to follow up. Of the other seven cats, euthanasia was carried out because of chronic renal dysfunction in two cats, DJD in two and cognitive issues in one. Cause of death was not recorded in two cats. No deaths were attributed to the cystic or myxomatous synovial lesions,

The authors' literature review identified reports of synovial cysts without a neoplastic

component in 10 elderly cats, eight of which involved the elbow joint. The lesions in these cases were identified using a mix of ultrasonography, arthrography, computed tomography, and/or histopathology, with arthrography showing a communication between the cysts and elbow joint.

As in the study by Craig et al (2020), the cysts occurred unilaterally in joints with DJD, but that DJD was bilateral in all cases. The pathophysiology of this lesion is unknown, but the authors speculate that increased intra-articular pressure in affected joints may result in synovial herniation, allowing formation of extra-articular synovial cysts. Subsequently, synoviocytes lining these cysts may undergo neoplastic transformation to form the myxoma, and this process would explain why some cats had only cysts and others had cysts and solid myxoma nodules. In the previously reported cases, surgical excision of the cysts did not improve lameness, and the lesions recurred in eight cats. The lack of response to surgery suggests the cysts were not responsible for the lameness, which the authors also suggest is the case in their cohort. From the clinical and histological descriptions, some of the previously reported synovial cysts probably included synovial myxoma.

The authors have described a lesion that is similar to that seen in the dog, but unlike the dog, it appears to be most commonly associated with the elbow. They suggest that as the elbow has a small volume of intra-articular space, the cysts and nodules more commonly surround the joint rather than being found within it. In both species the tumour is locally infiltrative and slow-growing, and none of the cats showed metastatic disease. The number of cases is small though, and therefore it is not possible for the authors to rule out the possibility of wider spread that they report can occasionally develop in canine cases.

Of most significance from a clinical viewpoint, is the observation that no cats died because of the presence of the disease, and therefore it carries a good prognosis.

Reference

Craig EL, Krimer PM, O'Toole AD. Synovial cysts and myxomas in 16 cats (2020). *Vet Pathol.* 2020;57(4):554–558. <https://doi.org/10.1177/0300985820926483>