Osteoarthritis in cats

an underdiagnosed problem?

For many years, osteoarthritis (OA) has been an overlooked area of feline medicine. Fortunately,over the last decade, there have been great advances in both feline pain recognition and treatment options, provoking an increased interest in this subject.

The elbows, stifles and hips are most frequently affected by OA and this is often a bilateral condition. The true prevalence is not known. However older cats are more at risk of having this condition.

Diagnosis of feline OA is challenging - for example, affected cats are not commonly lame. It is now apparent that the owner is the key to recognition of likely cases and the veterinarian needs to be asking the correct questions to identify this.

History taking

Table 1 lists questions which should be asked to identify gait abnormalities, previous injuries, and behavioural/ lifestyle changes which could be consistent with the possibility of a painful mobility problem. A thorough medical history is essential in identifying indicators of systemic illness (eg renal disease, hyperthyroidism) which may affect treatment, be responsible for some of the clinical signs and require specific management themselves.

Have there been any changes in the Cats ability or enthusiasm to:

1. go up and/or down stairs
2. use the catflap
3. jump onto or off the bed/sofa/your lap/work surfaces etc
4. jump or climb into/onto its favourite bed
5. play
6. climb trees/fences etc.
7. use scratching posts (or other substrates)

Have any of the following been noticed

1. a stiff or stilted gait (ie less fluid - less 'feline' - motions)
2. a limp
3. vocalising or hissing in response to moving around or being stroked over joints

Have any of the following changes in your Cats behaviour been detected?

1. Grumpy or less happy with people and other animals in the house
2. More withdrawn - interacting less with others in the house
3. Less active
4. Sleeping in different locations eg on the floor or low surfaces
5. Not coming upstairs/into the house any more
6. Passing urine or faeces in abnormal locations eg beside the litter tray, other locations inside the house
7. Purring less
8. A reduced appetite
9. Changes in coat condition (eg matted, scurfy) and/or grooming behaviour - eg grooming less overall, neglecting certain areas (pain over joints or pain turning to groom certain areas), overgrooming certain areas (e.g. due to pain over a joint)

Other miscellaneous questions

1. Any weight change?
2. Has the cat had any musculoskeletal injuries in the past (to the owner's knowledge)?
3. Any knowledge concerning affected relatives? (eg hip dysplasia is more common in certain breeds e.g. Maine Coon and possibly Siamese, Burmese, Tonkinese, Oriental, Balinese)

Table 1 Historical questions which can help to identify locomotor problems such as OA in cats.

Unfortunately, many owners feel that it is normal for older cats to exercise less/be more inactive and even when they recognise signs of OA, such as stiffness, they may often interpret these as 'normal', age-related changes which are not necessarily an indicator that their cat is in pain or that it needs veterinary treatment.

Clinical examination

Cats affected by OA may show reduced grooming activity manifested as a scurfy or matted coat, overgrown claws as a result of less exercise and scratching activity, and their pain may make them more resentful of general handling.

Where possible, gait examination should be performed and the cat should be encouraged to jump on/off chairs etc to allow assessment of these activities. In contrast to dogs with OA, lameness is not common while reduced jumping ability and reduced height of jump are. Joint manipulation is harder to interpret in cats who may often show less obvious evidence of pain or discomfort but may be generally more resentful of the examination process. Joint thickening may be evident and the elbows are most commonly affected by this.

Diagnosis

Radiography is required to confirm OA. For owners of elderly cats, this may present a stumbling block due to a reluctance to sedate or anaesthetise their cat. In these cases, clinical judgement should be used to decide whether or not radiography is essential.

Radiographs of painful joints can be taken under sedation (eg following administration of intramuscular 5-8 mg/kg ketamine and 0.25 mg/kg midazolam). If the gait abnormality is not localisable then two views of the elbows, stifles and a ventrodorsal pelvic radiograph are indicated since these joints are most frequently affected.

Radiographic findings in patients with OA include peri- and intra-articular new bone, narrowing of joint spaces, sclerosis of the subchondral bone, bone remodelling, soft tissue thickening/swelling around the joint and joint effusion. Any of these radiographic changes should be interpreted as potentially significant - changes can be subtle even in patients with marked OA.

Synovial fluid collection and cytological and bacteriological evaluation are rarely indicated in cats with OA. Fasted blood and urinalysis is indicated to look for concurrent problems such as renal disease, hyperthyroidism and diabetes mellitus.

Therapy

Treatment of feline OA is aimed at improving quality of life through symptomatic and supportive measures.

Surgical therapy

Surgical treatment may be appropriate in some instances, for example:

- Cranial cruciate rupture - especially large cats
- Joint instability - arthrodesis may be indicated
- Severe hip dysplasia - excision arthroplasty may be indicated.

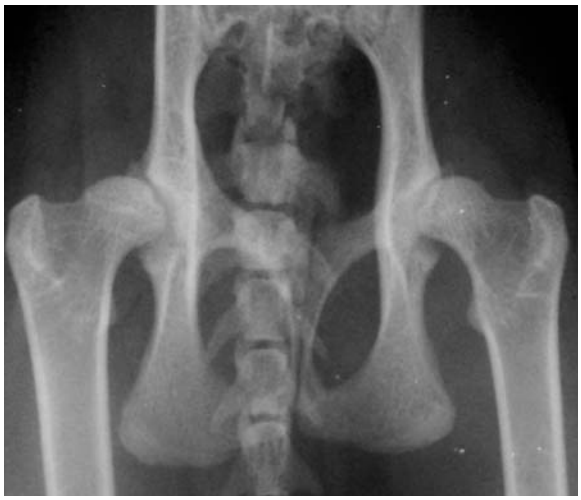

Figure 1. Osteoarthritis affecting the hip joints of a one year old Burmese cat with congenital hip dysplasia.

Surgical intervention is generally indicated as a salvage procedure when medical treatment has failed to provide sufficient pain relief or adequate functionality.

Environmental and management strategies:

Recommendations for these will vary depending on the nature and extent of problems reported by the owner. Examples of strategies which should be considered include:

1. Provision of several low sided (easy access) litter boxes in all areas that the cat uses.
2. Provision of food, and especially water, on all levels of the house.
3. Use of ramps, steps or 'staging posts' to allow access to raised areas (eg beds) which the cat may like to sleep on.
4. Padded bedding and heated beds can be popular.
5. Cats finding it difficult to groom can benefit from being brushed by their owner.

Figure 2. Osteoarthritis affecting the stifle of an 11 year old cat. Peri- and intra-articular bone is evident but there is no joint effusion. (Picture courtesy of Andy Sparkes)

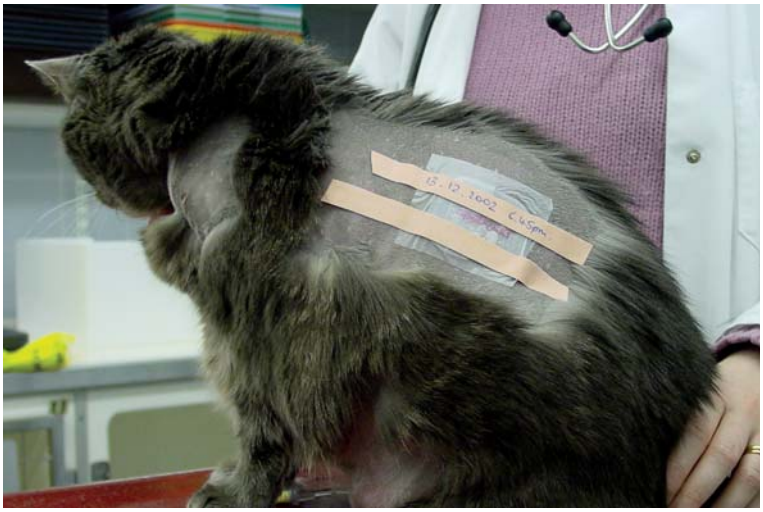

Figure 3. Fentanyl patches, a non-licensed opiate analgesic, have been used to treat pain associated with OA by some clinicians.

Analgesic therapy

Pain relief is an effective treatment for cats with OA. The only long-term analgesic currently licensed for cats is meloxicam (Metacam® 0.5 mg/ml, Boehringer Ingelheim). The manufacturers recommend a starting dose of 0.1 mg/kg on day 1 and 0.05 mg/kg/day thereafter. The lowest effective dose should be used. All NSAIDs carry a potential risk for gastrointestinal side effects and renal toxicity therefore owners should be advised of these and pre-treatment assessment of renal parameters performed. Azotaemia in combination with a urine specific gravity of less than 1.035 is consistent with renal insufficiency and warrants a choice of alternative analgesic therapy or reduction in NSAID dosage and close monitoring.

Glucocorticoids are not recommended for the management of feline OA since they may result in cartilage damage by reducing the synthesis of collagen and other matrix substances.

Chondroprotective joint supplements

The rationale for use of these agents is slowing of cartilage degradation and provision of precursors required for cartilage repair. Chondroitin is a glycosaminoglycan found in articular cartilage while glucosamine is a precursor for glysoaminoglycan production and is also used for production of hyaluronic acid by synovial cells. A wide number of different oral supplements are available as nutraceuticals and are proving popular with clinicians in spite of the lack of published, objective data to support their efficacy. Based on knowledge from other species, a supplement containing both chondroitin and glucosamine is indicated since these agents are thought to be synergistic in combination.

Dietary therapy

There is now a feline diet which is indicated for treatment of cats with mobility disorders (Hill's j/d). The diet is modified to contain fatty acids such as alpha linoleic acid and docosahexaenoic acid which have been show to have anti-inflammatory and anti-cartilage degradation effects in vitro. The diet also contains antioxidants such as Vitamins C and E and beta carotene, agents that enhance cartilage synthesis such as methionine and glycosaminoglycans, natural glucosamine and chondroitin sulphate and L-carnitine and lysine to aid obesity management and encourage build up of lean muscle. At this stage there is no published in vivo data to support the efficacy of this diet. Similar diets have helped to improve clinical signs of OA in affected dogs.

Physiotherapy and acupuncture

Physiotherapy techniques (eg massage, passive joint manipulation) may be an option in those cats which are reluctant to exercise and where they will allow their owners to do this. Acupuncture techniques can help by decreasing the pain associated with muscle spasms.

Weight management

Obesity management should be introduced where required.

Patient monitoring

Patients receiving NSAIDs should have their serum biochemistry and packed cell volume re-checked one week after starting treatment and again after 6 weeks. In addition therapeutic efficacy and evidence of clinical and subclinical adverse effects should be established from the history and physical examination.

Other patients should be reassessed 2-4 weeks after any management or therapeutic changes have been made. The prognosis with treatment is highly variable depending on the severity of disease and any associated concurrent disease.

Conclusions

Undoubtedly OA is a common feline complaint but it is still under-recognised and under-treated. Now that knowledge on presenting signs is available, practitioners should be in a good position to diagnose and manage affected cats. This is particularly important now that better cat care is increasing the numbers of older cats and hence increasing the number of cats with OA in all practices.

Further reading

Adams VJ. Osteoarthritis. *Consultations in Feline Internal Medicine edited by JR August* 2006; **5**: 743-751

Allan GS. (2000). Radiographic features of feline joint diseases. *Veterinary Clinics of North America* 2000; **30(2)**: 281-302.

Sarah MA Caney BVSc PhD DSAM(Feline) MRCVS.
Sarah Caney is an RCVS Specialist in Feline Medicine who divides her time between first opinion and referral feline work. She has a particular interest in geriatric feline medicine and has written a book for cat owners (Caring for a cat with kidney failure) which is available through her website:

www.catprofessional.com