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ARTHRITIS IN CATS - DIAGNOSIS, RELEVANCE AND TREATMENT

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Arthritis is not usually identified as a cause of significant clinical problems in the cat with the exception of certain polyarthritic conditions. When osteoarthritis is recognised in affected animals it is often dismissed as clinically insignificant. New interest and information has resulted in a reappraisal of both the prevalence and importance of this problem in the cat. This interest is due in part to increased identification in an older cat population and also an increased understanding and awareness of the consequences of conditions causing chronic pain.

CLASSIFICATION
Arthritic conditions have been traditionally classified under 2 main headings, Inflammatory and Non-Inflammatory based on the dominant pathology found within affected joints. Inflammatory arthritis are further sub-divided into conditions resulting from infection (Infective) and a Non-Infective group containing the Immune-mediated conditions. These immune based conditions are also grouped as Erosive or Non-erosive again based on pathological changes seen in affected joints. The most important condition seen in the Non-Inflammatory group is Degenerative Joint Disease or Osteoarthritis. Differentiation between these conditions is made by evaluation of clinical findings, radiological investigations and ancillary tests. Analysis of synovial fluid, which can be easily collected from feline joints, is of particular importance in identifying inflammatory arthropathies.

INFLAMMATORY ARTHROPATHIES
Inflammatory arthropathies can be seen infrequently in cats either as Infective or Immune mediated joint diseases. Infective arthritis is commonly the consequence of bacterial entry via a bite wound or surgical procedure in the cat. Classically affecting a single joint producing lameness, heat, pain and swelling, diagnosis can be confirmed by synovial fluid appearance and cell counts. Microbial culture should be attempted and appropriate antibiotic treatment instituted, with or without surgery. It is worth noting that bacterial arthritis can also occur via haematogenous route. One joint can be involved with a low grade persistent problem typified by lameness, and diagnosis is confirmed, once again, by aspiration of synovial fluid. Treatment is medical with systemic antibiotics prescribed for a prolonged course of at least 4 weeks.

Immune mediated polyarthritis is also encountered in the cat. Clinical presentation is similar in each condition, the key point being that multiple joints are involved. This can result in generalised stiffness, reluctance to move and resentment when handled. Limping can be present but is not a primary sign as it is in the dog. Other clinical findings include localised puffy swollen joints which may be painful to touch and move while pyrexia and inappetence may be present. Radiographs and synovial fluid analysis are both useful in confirming diagnosis, synovial fluid WCC being typically elevated above 6-8 x10^9. Erosive forms of polyarthritis are most commonly seen in the cat so radiographs can show significant changes.

The most commonly encountered immune-mediated polyarthritis is Periosteal Proliferative Polyarthritis. This condition is mainly seen in young male castrates and predominately affects hock and carpus which may be enlarged on palpation. It is typified by the production of large amounts of peri-articular new bone formed symmetrically around the affected joints. Joint surfaces are gradually destroyed by this progressive erosive disease resulting in a poor prognosis. Palliative medication using low dose prednisilone (0.5mg/kg or less e.o.d.) is used to alleviate pain.

NON-INFLAMMATORY ARTHROPATHY – OSTEOARTHRITIS
The incidence of osteoarthritis in cats has always been considered as low with little significance. Recent surveys have questioned these statements suggesting a much higher prevalence in the older cat population. Most of these are retrospective analyses of radiographic evidence. Hardie (1997) reported an incidence of 20% in 68 cats over 12 years with the shoulder and elbow most commonly affected. Godfrey (2000) in a similar study, reviewed 292 cases and reported an incidence of 28%. A more recent survey of 100 cats reported that 90% of these animals showed radiographic evidence of OA with the elbow once more being the main appendicular joint affected. A high incidence of spinal OA (80%) was also reported in this study either as a sole finding (26%) or in combination with appendicular OA (56%). In all of these studies there was a very low clinical awareness of a clinical problem despite high incidence of disease.

Clinical recognition of OA in the cat may prove difficult for a number of reasons. In the dog there is a high awareness of the problems produced by OA. Affected animals often limp and show reduced exercise tolerance, which the owner can detect very quickly especially when they exercise the dog. The situation in the cat is very different, as cats can disguise mobility problems and pain by altering behaviour and therefore only severe situations will be noticed. Consider that a cat who lies all day in the heat and only moves to get food (on occasions not even this) is viewed as being ‘normal’. It is much more difficult to assess the cats locomotory system in a consulting room or similar clinical setting and so reliance on history becomes much more important. This is similar to dogs, and indeed people, suffering from chronic pain.

Clinical evidence of chronic arthritic pain may manifest as behavioural alterations rather than overt lameness. Reduced activity level, sitting in one place, avoiding jumping or climbing rather than jumping, increased fractious behaviour, avoiding contact, poor grooming, increasing accidents with the litter tray are all events indicative of a problem. Combine this with the possibility of inter-current disease in older cats and it is easy to understand how the subtle signs of arthritic pain may be overlooked. It is a new challenge to us to re-evaluate this situation and question whether this is indeed a painful condition that we as veterinarians are failing to spot.

The presence of typical radiological changes will confirm that a joint is osteoarthritic. Osteophytic changes can be less proliferative than in the dog (D. Bennett, personal communication) and careful inspection for sclerotic sub-chondral bone, soft tissue changes and bone remodelling are important in making a diagnosis. Care must be taken to differentiate the osteoarthritic changes from other proliferative joint diseases like periosteal proliferative polyarthritis (carpus, hock) and hypervitaminosis A (elbow enthesiopathy).
MANAGEMENT

The basic principles of management in orthopaedic problems across the species apply but exercise control is almost impossible to institute in the cat. Avoidance of obesity is every bit as important as in the dog. Medical management seems to be indicated in clinically active disease. As there appears to be a different pattern with a slower progression of the disease in the cat it is likely that the older cat is the target for treatment. The signs described are really the signs of chronic pain and analgesic therapy is indicated as a priority to alleviate discomfort. If successful and behaviour is positively modified then it may also act to confirm diagnostic judgement of an arthritic problem. A two stage approach is encouraged.

Stage 1  Use of analgesic to restore behaviour by alleviating discomfort

Stage 2  A maintenance programme designed to limit the consequences of the disease and minimise long term discomfort.

The problem is identifying medical agents capable of achieving these objectives. Steroid therapy has been used in the past and is useful in certain cases. New interest is focused on using NSAIDs in the cat. These have been avoided in the past due to lack of licensed products and worries about toxicity. Recently we have been using some of the newer agents with care and success in cats with clinical arthritis (Table 1). In particular meloxicam (Metacam) seems effective, practical to give in its palatable liquid form and free from major side-effects in the cat. Both ketoprofen (Ketofen) and carprofen (Rimadyl) have also been used effectively as tablets.

Table 1. Drugs used in Osteoarthritis Management in Cats at Glasgow

<table>
<thead>
<tr>
<th>Agent</th>
<th>Dose (daily)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meloxicam</td>
<td>0.1mg/kg</td>
<td>Ease of administration</td>
</tr>
<tr>
<td>Ketoprofen</td>
<td>1mg/kg</td>
<td></td>
</tr>
<tr>
<td>Carprofen</td>
<td>2mg/kg ev 48hrs</td>
<td></td>
</tr>
<tr>
<td>Prednisolone</td>
<td>0.5mg/kg ev 48hrs</td>
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The principles of use are described as follows

STAGE 1
- Confirm osteoarthritis is present and identify any inter-current diseases which may complicate therapy
- Run bloods and urine as a routine
- Start with stage 1 dose to control signs. This is determined by severity
- If signs improve within 7 days consider reducing the dose and/or using every second day
- Continue to reduce dose until treatment is removed

If signs recur as dose is reducing, increase to last increment and use this as a holding dose
- If signs recur some time after removal attempt to control by instituting the same scheme using the same agent
- If control is difficult try the same process with one of the other agents

STAGE 2
This merges with stage 1 but is concerned with maintaining pain free function over a prolonged period of time
- Use minimum effective dose of analgesic (trial and error)
- Try to remove analgesic or bolus dose
- Consider supplementing with glucosamine or similar nutraceutical agents
- Monitor health status regularly looking for any evidence of toxicity

To date, we have limited experience in both understanding the importance of osteoarthritis and in managing the clinical consequences. Given the potential significance of this problem as a cause of chronic pain in cats it is important that clinically active disease is identified and treated.

REFERENCES