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Early Canine OA Recognition & Management

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Chronic pain is ubiquitous; Of all chronic pain syndromes, osteoarthritis (OA) remains the most predictable cause in both dogs and cats. In dogs, the pathophysiology of OA is commonly heritable and conformational with a lifelong disease process that starts at a very young age.

DIAGNOSIS

Several validated clinical metrology instruments (CMIs) can be used to semi-quantify patient comfort, mobility, and ability (eg, Liverpool Osteoarthritis in Dogs [LOAD][1]). However, these CMIs can be deployed only when clinical signs are evident, thus failing to detect OA in a large cohort of dogs that may not show clinical signs. COAST (Canine Osteoarthritis Staging Tool), a novel CMI, can detect dogs that do not yet have clinically evident Stage 1 OA but may have 1 or more strong risk factors for OA.[2] These risk factors for canine OA begin with breed predisposition and continue with high body condition score,[3] repetitive injury, previous history of limping, and more.

The entire veterinary team can pick up subtle signs in the history, conformation, and mobility changes of the pet with signs suggestive of early OA, such as chondrodysplasia, higher-than-recommended weight, a diminished angle to stifle and hock, muscle atrophy, cheating on one hip (stifle) rather than sitting square, standing evenly rather than standing on thoracic limbs followed by pelvic limbs, and hip dysplasia "wiggle" gait. In addition, the skilled veterinarian can identify specific limb and joint changes even in a brief (2-minute) orthopedic examination conducted as part of a routine annual or semiannual visit with attention toward CREAPI: crepitance, range of motion (resistance), effusion, asymmetry, pain, and instability.

MANAGEMENT

Industry guidelines[4] summarize the evidence for management of canine OA. Modalities most appropriate for early (COAST Stage 1 and 2) canine OA include:

- **Weight optimization:** Keep the patient lean. Adipose tissue is a significant contributor to circulating proinflammatory cytokines. Evidence shows that the #1 preventive measure to slow the progression of OA in at-risk dogs is to maintain a lean body condition score.[5-9]
- **Eicosapentaenoic acid (EPA)–rich diets[10]**
- **Modest course of NSAIDs when indicated**
- **Nutritional supplements:** The evidence for glucosamine and chondroitin in OA remains mixed at best, although some other ingredients of oral nutraceuticals suggest varying degrees of immunomodulating, chondroprotective, and pain-modifying effect. One Hydrolyzed Eggshell Membrane combination product showed statistical improvement in biomarkers and LOAD in a well-designed but unpublished study.[11] A recent review of nutritional supplements for canine OA concluded that even if additional investigation is needed, dietary supplements should be considered in OA management.[12] With their ease of use, relative safety, low cost, and easy acceptance by pet owners, these nutraceuticals may be deployed with earliest onset of OA signs, or even in at-risk patients before they show clinical signs.
- **Controlled exercise:** Therapeutic exercise is hypoalgesic[13] and considered to play a crucial role in the management of osteoarthritis in dogs.[14]

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CMI = clinical metrology instruments
COAST = Canine OsteoArthritis Staging Tool
CREAPI = crepitance, range of motion (resistance), effusion, asymmetry, pain, and instability.
EPA = eicosapentaenoic acid
LOAD = Liverpool Osteoarthritis in Dogs
OA = osteoarthritis