Chronic Pain: Struggling with Arthritis and Obesity

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As our pets live longer, there is an increased risk they will experience discomfort and pain. Arthritis is quoted to affect 20% the pet population. Since many of our patients suffer in silence, this is likely a conservative estimate. Arthritis and obesity limit movement, impact cartilage health, contribute to muscle atrophy, result in weakness, and alter normal biomechanics. Both these diseases are significant contributors to chronic pain in our companion animals.

Arthritis is a multi-dimensional disease beginning with joint dysfunction and leading to changes in movement. We need to acknowledge that pain is often present before visible changes in mobility. Arthritis is a progressive disease; any change in function is often due to an increase in pain. We can improve arthritis patient care by focusing on the prevention of pain and disability. This requires earlier arthritis identification and the implementation of multi-modal arthritis strategies. In humans, pain is often unrecognized and inadequately treated. With non-verbal patients, we have an even bigger challenge in veterinary medicine. We need to excel at our history taking and our physical examinations. Because we rely on pet owners, we need to advocate for education. Educating clients about the clinical signs of arthritis, the progressive nature of the disease, and the impact of contributing factors such as obesity all encourage earlier identification and compliance with our recommended treatments.

Understanding the difference between acute and chronic pain becomes imperative when trying to raise the bar for patient care. While acute pain may not be a pleasant experience, it is protective in nature. Like an alarm system, it is a helpful reminder for the body to rest and promotes the healing of injured tissue. Compared to acute pain, chronic pain does not serve a purpose and can become debilitating. Long term exposure to pain signals results in altered pain physiology: decreased pain thresholds, spontaneous electrical activity, activation of pain pathways, loss of descending pain inhibition or suppression, and exaggerated responses to stimuli. These changes in the spinal cord can result in altered structure and function of the nervous system leading to central sensitization, hyperalgesia, and allodynia. Chronic pain, or maladaptive pain, can become a separate disease process and is difficult to treat.

Every patient should be assessed for pain. Assessing for acute pain has become an expected standard of care for our trauma, medical, and surgical patients. Assessing for chronic pain is more difficult as the symptoms are difficult to recognize and our patients often don't complain. Instead, our patients slowly adapt and change their activity patterns. Owner's observations are required for chronic pain and mobility assessments. Their feedback can help to identify these slow adaptions or subtle behavior changes and provide clues as to how their pets are functioning at home. Good online resources for helping to assess chronic pain include the Helsinki Chronic Pain Index, the Canine Brief Pain Inventory, and the ACVS Canine Orthopedic Index.

Mobility evaluations start with a thorough history followed by observing the patient standing, sitting, moving into different positions and a detailed palpation. An overlooked source of discomfort in our veterinary patients is muscle pain or myalgia. The chronic changes to posture, weight bearing, and gait from obesity and arthritis can lead to activation of pain sensing pathways which contributes to secondary muscle pain. In people, myalgia is often described as aching or cramping and the chronic activation of muscle pain sensors can activate areas in the brain which are associated with depression.

The prevalence of arthritis in our feline patients is alarming. A retrospective study revealed that 22% of cats over one year of age and 90% of cats over twelve years of age had radiographic evidence of degenerative joint disease. History taking is even more imperative for our feline patients as they are often suffering in silence and may only exhibit subtle and gradual behavior changes. Things to discuss with

clients include monitoring for reduced activity, difficulty jumping, increased grumpiness, changes in sleep patterns, dislike for grooming, avoiding interactions, appetite fluctuations, weight changes, and potential variabilities to litter box habits.

Arthritis treatment goals include improving the ability to function and improving quality of life. These can be achieved by controlling pain and inflammation, slowing down the progression of arthritis, improving joint function, maintaining muscle strength, preventing injury, and promoting physical fitness and independence. Arthritis management is life-long and therefore requires good client communication and support. Treatment plans need to be individualized and based on thorough examinations. Due to the progressive nature of the disease, frequent re-evaluations are required throughout the life of the pet. A common cause for failure with arthritis management is neglecting to adjust treatment plans over time. As with many areas of practice, managing arthritis becomes more successful with the involvement of the entire veterinary team.

Chronic pain involves multiple pathways and once central sensitization has occurred, a multi-modal treatment strategy is required that targets different pain pathways. Pharmaceuticals, nutrition, disease modifying agents and rehabilitation can all provide different components of a management plan. Pharmaceuticals play an important role in reducing pain and inflammation. The most commonly used medications for managing pain in arthritic patients include non-steroidal anti-inflammatories (NSAIDs), gabapentin, and amantadine. NSAIDs are the hallmark of initial therapy since arthritis is an inflammatory disease process. NSAIDs can help to increase activity, maintain muscle mass, and assist with weight loss. The addition of gabapentin and amantadine are good options for chronic or maladaptive pain. Tramadol is considered questionable as an appropriate choice for the management of chronic pain patients. Our goal with multi-modal pain management is to maximize our treatment success while minimizing side effects. Identifying or determining the lowest effective dose is ideal, however, it may be an unrealistic goal to discontinue pharmaceuticals in maladaptive pain patients. Remember, it takes time to change central sensitization and patients should be re-evaluated prior to adjusting medications.

Despite pharmaceuticals targeting inflammation, providing pain relief, and modulating neurophysiology, we cannot forget about the importance of slowing down the progression of arthritis. Disease modifying agents can help to protect and promote cartilage health. The earlier we initiate the use of supplements the better chance we have at modulating cartilage damage. These products should be used as part of a multi-modal treatment plan and not as a replacement for appropriate pain-relieving medications or modalities. Common disease modifying agents include but are not limited to glucosamine, chondroitin, omega 3 fatty acids, green lipped muscles, avocado soybean unsaponifiables (ASU), turmeric, and injectable chondroprotectants such as Adequan and Cartrophen.

Arthritis is an inflammatory disease by nature and obesity is also a source of chronic inflammation. Adipocytes release a variety of hormones that have effects both locally and systemically. Increased body condition scores are associated with an increase in inflammatory markers which means that overweight and obese patients are in a constant state of inflammation. Obesity contributes to a pro-inflammatory state which activates pain sensors, increases pain perception, and aggravates joint degeneration by encouraging destructive enzymes. Obesity and arthritis exacerbate each other and it is a constant struggle of arthritic patients becoming overweight because of reduced mobility and overweight patients developing arthritis at faster rates due to systemic inflammation and mechanical joint stress.

There is a lack of recognition of obesity amongst pet owners and the veterinary health care team. Despite obesity being easily recognizable and the most common nutritional disease, it is often a difficult conversation with owners. Obesity is spreading like an epidemic - we need to remove emotion and focus on the health risks. Obesity compromises mobility, compounds arthritis, and contributes to pain. More importantly, it affects quality and quantity of life which impacts the human-animal bond. Obesity in companion animals is a human disease – often a combination of overfeeding and lack of exercise. Weight loss is the single most important factor to assist with reducing pain in overweight and arthritic patients. Achieving ideal body weight is also critical for maintaining joint health and slowing down the progression of arthritis.

Estimating the current body condition score allows for determination of the ideal body weight, this is integral for calculating the appropriate dose of calories. Simply reducing the current volume of food is not always ideal for long term balanced nutrition. It is also important to choose a diet that is appropriate for weight loss versus weight maintenance or obesity prevention. How we feed our patients during a weight loss or weight maintenance program is equally important for long term success. Consider the use of gram scales to improve measurement accuracy when dosing calories and food puzzles or games to encourage mental stimulation. Successful weight loss patients are less likely to rebound or gain weight when the weight loss diet is continued but adjusted for a caloric intake that is appropriate for weight maintenance.

A tailored rehabilitation program can focus on reducing pain and inflammation, improving joint health and mobility, maintaining and improving muscle mass, encouraging proprioception to reduce the risk of injury, and stimulating overall mental health and physical fitness. Several physical medicine options are available including cryotherapy, thermotherapy, laser therapy, acupuncture, land based treadmills, hydrotherapy, and targeted therapeutic exercises. In humans, exercise has been shown to be effective at managing chronic pain from conditions such as arthritis and obesity. Low intensity exercise can be equally beneficial to our patients by supporting the loss of fat versus muscle, increasing oxygen capacity and energy expenditure, improving fatigue resistance, encouraging joint and muscle function, enhancing fatigue resistance, promoting endorphin release, reducing lameness scores, and improving mental health.

Controlled and structured leash walks are preferred over uncontrolled off-leash activity for the arthritic and obese patient. With respect to any exercise program, the duration of an activity will be based on the patient's current physical fitness and limitations with the concept of slowly increasing and challenging the body over time based on the goals of treatment. Pain levels should be appropriately and frequently assessed during all stages of a rehabilitation program as adequate pain management is required for patients to be actively engaged in a successful rehabilitation program.

Improving arthritis patient care requires a focus on high risk individuals. This may include certain breeds, age, athletic lifestyles, and patients with previously diagnosed orthopedic conditions. Providing the arthritic patient with extra tender-loving-care (TLC) in the clinic can go a long way for patient comfort. Increase traction on slippery clinic floors, use mats for orthopedic examinations, remember sore joints during handling for catheters, nail trims, and with positioning of sedated patients for dentistry and radiographs. Clients can also provide their pets with extra TLC at home by focusing on appropriate nail care, comfortable bedding, elevated feeding dishes, and increasing traction in high traffic areas. Our overall goals when treating this patient population is to minimize pain while maximizing mobility.