

Returning to Agility Competition After Treatment for Jump Down Syndrome



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“Jump down syndrome” or traumatic fragmented medial coronoid process is a condition in the elbow joint that commonly occurs in performance dogs. Unlike the classic condition of fragmented medial coronoid process (FCP) affecting the elbow joints of skeletally immature large to giant breed dogs, JDS appears to have no age or size limitations. It is a condition that may also affect dogs with no elbow dysplasia.

Dogs with JDS may present with a history ranging from a subtle intermittent off-loading of the forelimb to significant unilateral or bilateral forelimb lameness. This lameness is typically exacerbated with exercise and heavy activity. A small percentage of agility dogs only experience performance issues, with no obvious lameness outside of intense activity. The onset of lameness is insidious and may increase in severity as it persists. Affected dogs often place the carpus in an exaggerated “turned out” (valgus) position when sitting or standing, and circle the forelimb outward and move the elbow away from the midline (circumduct the forearm and abduct the elbow) during the swing phase of the stride.

The history of dogs with JDS typically includes a lack of response to rest and non-steroidal anti-inflammatory drugs (NSAIDs). Many dogs with JDS are mistakenly treated for shoulder pathology because a pain response can be elicited

when the shoulder is extended. This pain response likely arises from the elbow because an extension maneuver of the shoulder simultaneously extends the elbow. This places tension in the biceps/brachialis muscle complex, which then exerts pressure on the medial coronoid and overlying inflamed joint capsule causing the pain response.

On physical examination, discomfort is usually noted on direct palpation of the medial compartment of the elbow joint, specifically the medial coronoid process. Discomfort may also be noted on hyperflexion of the elbow. Most dogs with JDS are reluctant to allow for full end-range flexion. Clicking or popping may be noted when placing the elbow through range of motion. Depending on the duration of injury, muscle atrophy may be noted in the affected forelimb.

Case Study

Kelsier is a 6-year-old male neutered Rottweiler from Clifton Forge, Virginia who presented to Veterinary Orthopedic and Sports Medicine Group (VOSM) in February of 2012 for a persistent right thoracic limb lameness which was pronounced during agility competition. Kelsier’s lameness did not resolve with rest and pain medications. On physical examination, Kelsier was moderately lame in his right forelimb, with a lameness score of 3 of out 6. There was discomfort noted in the medial compartment of Kelsier’s right elbow. Initial GaitFour® objective gait analysis revealed a decreased pressure on the right forelimb as compared to the left forelimb. Radiographs (x-rays) showed very mild sclerosis (whitening) in both elbows. Elbow arthroscopy was performed in March 2012 and revealed non-displaced fractures of the medial coronoid process and no evidence of elbow dysplasia in both elbows. These fragments were removed arthroscopically and abrasion arthroplasty performed to the subchondral bone (shaving of the affected cartilage and bone) to stimulate formation of fibrocartilage.

Following treatment, Kelsier was provided with a dedicated rehabilitation therapy program. He made an excellent recovery and returned to agility training four months after treatment and competition six months after surgery. He subsequently earned his AXP and AJP titles. Kelsier is currently over five years out and was able to compete at a higher level than pre-treatment until retiring recently.

Diagnosis and Treatment

After analyzing Kelsier’s history and performing a gait analysis and thorough physical examination, arthroscopy was determined to be the most useful modality for both diagnosis and treatment of his injury. Arthroscopy remains the technique of choice because treatment can also be instituted at the time of diagnosis.

Arthroscopic evaluation of the elbow joint allows direct observation and magnification of all major structures within the elbow. During arthroscopy, the tissues can also be evaluated in real-time during elbow range-of-motion tests, and “palpation” of intra-articular tissues using arthroscopic instrumentation. Arthroscopic exploration of the elbow provides a definitive diagnosis of JDS when a fragment or cartilage fissure is observed. The new 1.2mm arthroscope is now in use at VOSM, which allows for arthroscopic views through the insertion of a camera approximately the size of a 16-gauge needle. This technology is even less invasive than standard arthroscopy and can be used as a diagnostic tool to evaluate the elbow joint for injuries. It is routinely performed as an outpatient procedure. If arthroscopy and surgery is not an option initially, advanced imaging (nuclear scan, CT, MRI) may be used to confirm the diagnosis.

Unfortunately, radiographs have been shown to be insufficient in identifying the fragment or line of separation using standard radiography. In some chronic cases, however, radiographs may reveal secondary evidence of bony remodeling consistent with osteoarthritis. Kelsier showed no changes on radiographs initially, but continued to show lameness. Upon presenting to VOSM, radiographs showed changes consistent with a more chronic case of JDS, with bright changes seen in his ulnar notch and the diagnosis was confirmed via arthroscopy.

Treatment of JDS is multimodal and includes a combination of medical and surgical management as well as rehabilitation therapy. The objective of surgery is to remove the inciting cause of lameness so that medical management and rehabilitation can be effective (think of this as first taking the pebble out of the shoe). Through a multimodal approach,

it is possible to relieve pain and maintain limb function, as well as to return the dog to a normal level of activity.

Return to Agility Competition

Following treatment, Kelsier was entered into a dedicated rehabilitation therapy program. He recovered extremely well and returned to agility competition six months after surgery. Competing within the AKC and USDAA sanctioned events, Kelsier has continued to improve on his times and perform better than pre-treatment levels until retiring recently.

Of the greater than 1000 cases of elbow injuries surgically treated at VOSM since 2006, 108 of those cases were agility dogs, of which 47 were cases of JDS. A survey was sent to all owners via e-mail or was completed over the phone to collect information to assess performance based on parameters, including ability to return to normal activities of daily living, return to agility time, pre- and post-operative jump height and average yards per second, and average number of dropped bars per run. From the surveys collected to date, all dogs were able to return to normal activities of daily living after surgery. A significant amount of dogs were able to return to agility within six to twelve months.

Return to competition and sport is a well-accepted measure of successful surgical outcome in human and equine literature. Dog agility involves speed, sharp turns, and jumps, and provides an excellent comparison to human and equine athletes. Using the previously established VOSM Return to Agility Grading Scale and surveys collected to date, we found that greater than 90% of dogs (especially those with no concurrent injuries) returned to agility were performing at the same level or better than they had prior to injury (VOSM Grade 4 and 5).

VOSM Return to Agility Grading Scale	
Grade	Post-Therapy
Grade 1	Owner chose not to return dog to agility for unrelated reasons
Grade 2	Dog was physically unable to return to agility
Grade 3	Dog returned to agility but performed at a worse level than before starting therapy
Grade 4	Dog returned to agility and performed at a similar level than before starting therapy
Grade 5	Dog returned to agility and performed at a better level than before starting therapy

Summary

JDS should be considered in highly active dogs with persistent forelimb lameness or performance-related issues where there is no obvious cause for the lameness and with discomfort isolatable to the elbows or shoulders. Appropriate post-operative care is a critical factor in dogs with JDS treated arthroscopically. Owner compliance, strict rehabilitation therapy, and appropriate return to sport training all contribute to a successful return to agility.

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Dr. Desmond Tan grew up in Singapore and received his Bachelor of Veterinary Science from The University of Melbourne. He graduated with first class honors and received various awards for academic and research excellence. After graduating from veterinary school, Dr. Tan worked in private practice in Australia, and then completed a one-year rotating internship. Dr. Tan is currently completing a surgical internship at Veterinary Orthopedic & Sports Medicine Group in Annapolis Junction, Maryland. Dr. Tan is interested in pursuing a residency with the American College of Veterinary Surgeons, and has a special interest in joint disorders.

Sherman O. Canapp, Jr., DVM, MS, CCRT, DACVS-SA, DACVSMR, originally from Maryland, completed a combined Doctor of Veterinary Medicine/Master of Science at Kansas State University, an internship in small animal medicine and surgery at the University of Missouri, and a three-year residency in small animal surgery at the University of Florida. Dr. Canapp currently practices orthopedic surgery and sports medicine at Veterinary Orthopedic & Sports Medicine Group in Annapolis Junction, Maryland, where he is chief of staff. Dr. Canapp has earned diplomate status from both the American College of Veterinary Surgeons and the American College of Veterinary Sports Medicine and Rehabilitation. His primary focus and research is in arthroscopy, regenerative medicine, and sports medicine. Dr. Canapp lectures nationally and internationally, and is a consultant for numerous organizations and medical companies. Dr. Canapp is also the president of Orthobiologic Innovations, LLC, which is dedicated to research and development in sports medicine and regenerative medicine.