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*A Tradition of Leadership and Excellence in Equine Medicine*

## Lameness and poor performance Tim M. Lynch, DVM, Dipl., ACVS

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Musculoskeletal lesions or lameness is the most common cause of performance failure in horses. Proper training will condition the horse's muscles, bones and cardio\respiratory systems to handle the challenges of competition. However, many factors may create musculoskeletal injuries that are often exhibited as inability to properly train or a performance failure. Training programs, conformation and accidents certainly contribute to injury that may influence the ability of a horse to successfully compete.

Horses with obvious lameness should be carefully examined to determine the origin and extent of the lesion. The horse's lameness should match its lesion. Horses with less obvious or mild lameness, or horses with very subtle gait changes, present more of a challenge to the veterinarian to diagnose and then properly treat. Grade 2 lameness is consistent and repeatable and is usually amenable to localization of the lameness by commonly accepted local anesthetic techniques. Horses with Grade 1 lameness are by far the most difficult horses to observe a consistent and repeatable lameness. These horses may have very minor gait changes or may not "feel" right to the rider. Despite trotting the horse in a straight line or lunging the horse in a circle these lameness can escape detection by the veterinarian observing the horse from the ground. Many of these horses can remain competitive despite the subtle unsoundness yet with repetition the biomechanical efficiency of movement can be adversely affected resulting in worsening of the lameness.



The skeletal structures that can be injured during training and competition include muscle, bone, joint, tendon and ligament. Bone fractures result in obvious lameness and appropriate imaging and emergency planning can be life saving. However, acute fractures in the sport horse are rare compared to the more common subtle bone

injuries like periostitis, stress fractures and non-adaptive bone remodeling. These are all normal responses of bone to the stress applied to it and can be frustrating and often unrewarding to locate from a veterinarian's point of view not to mention the disappointment felt by the owner. Radiographs and nuclear scintigraphy are imaging modalities used to compliment the lameness exam and local anesthesia in locating the injury.

Joint origin lameness is a common source of lameness in the equine athlete. Chip fractures and degenerative joint disease are the most common joint related injuries encountered in sport horses. Carpal and fetlock chip fractures often lead to lameness. Osteoarthritis or degenerative joint disease of the distal hock joints can certainly limit the performance of any horse no matter what its sport. Again, radiography and nuclear scintigraphy and ultrasound are used in concert with a complete lameness exam to pinpoint the lameness.

Tendinitis is common in horses that compete at high speeds or jump. More times than not tendinitis occurs in horses that are entering training or competition without appropriate conditioning. Tendon like bone will remodel to the stress applied to it (i.e. training). Tendon fiber tearing or "bowed tendons" can range from very subtle lesions that are very difficult to diagnose to complete rupture of the tendon itself. Serial ultrasound of the injury will give an impression of the ultimate prognosis and guide treatment.

Ligament is similar to tendon in structure and function and response to injury. Unlike tendon, which attaches muscle to bone, ligaments attach bone to bone or bone to tendon or other ligaments. The sport that the horse participates in may predispose it to certain ligamentous injuries. Origin of suspensory ligament injuries is frequently seen in racehorses, jumpers, dressage and endurance horses. Diagnosis can be challenging especially when it is of a chronic nature and associated with only a subtle lameness. Often there is no localizing swelling, local anesthesia may give confusing results and imaging (radiographs, ultrasound and nuclear scintigraphy) may be completely normal. Albeit difficult to diagnose origin of suspensory ligament injury one needs to assemble and decipher all the information gained from the lameness exam, local anesthesia and imaging in order to arrive at a confident and accurate diagnosis.

The show season is soon upon us and a complete lameness exam with local anesthesia (blocks) will give valuable information regarding your horse's lameness or performance problem. Imaging is vital to diagnosis of lameness and treatment of the lesion. Peterson and Smith will have the latest in digital radiograph at HITS this year in order to serve your needs better. Dr. Adam Cayot and myself will be there and will be available to see your horse for lameness or any performance problem. Even if you just have questions please stop by the Peterson and Smith tent at HITS. The tent will be located between the jumper and hunter rings in the infield. Good luck!