

Lameness in the Rodeo Horse

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The ever-increasing popularity of the rodeo has created a brisk business in that segment of the equine industry in North America. Consequently, the value of horses that are competitive in these events has increased substantially, resulting in greater demand for veterinary services to assist in maintaining their health and soundness.

The physical demands placed on these horses when competing are strenuous, and considering that many hours are spent in trailers between events in varying climates and over varying surfaces, it becomes easy to understand why significant soundness problems may be experienced during their career.

By far, the predominant breed of horse used in rodeo events is the American Quarter Horse. Whereas successful horses can vary in size and structure and there is variation in what is sought in a horse depending on the events the horse will be used for, certain characteristics are desirable in selection of a horse to compete in any of these events.¹ Good rodeo horses are expected to last many years, and good conformation is essential to ensure a long career.

Many assumptions exist about the prevalence of certain types of conditions in various types of horses, and there generally is some merit to many of them. For example, hock lameness is fairly common in these horses. However, it is important to recognize that all of these horses compete in strenuous athletic events (Fig. 1) and are capable of injuring almost



Fig. 1.

any part of their musculoskeletal system. Indeed, our practice diagnoses lameness originating in the stifle almost as frequently as hock lameness. The important point is to not jump to conclusions hastily. Thorough examinations are essential.

Many "lamenesses" are presented with a complaint of poor performance. When dealing with such cases, lameness may not be readily apparent

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Fig. 2.



Fig. 3.

during a traditional examination. Often it is of value to have the owner ride them under saddle. It is common in our practice at the time appointments are made to suggest the owner bring videotapes of the horse performing, preferably displaying runs when the horse was performing well followed by tapes of poor performances (Fig. 2). These videos, especially if you can view them in slow motion, often aid in identifying abnormal limb use. I find this is especially true with hindlimb lameness.

Most orthopedic problems of the forelimbs that negatively affect performance will manifest themselves as observable lamenesses. Lameness originating from the fetlock joint and below is more common, but cases of upper suspensory desmitis and carpal lameness are seen fairly frequently, particularly in older horses that have been used extensively. Beyond that, this author has diagnosed numerous cases of elbow and shoulder lameness in rodeo horses. Prudence dictates that nothing be ruled out initially. Examinations should be methodical and thorough, and they often require the use of diagnostic nerve or intra-articular anesthesia to confirm a diagnosis. Radiography, ultrasonography, and more advanced imaging techniques such as scintigraphy are valuable aids in some cases, but caution is warranted in interpreting findings, particularly in the older horses. Abnormalities on radiographs can lead to erroneous diagnoses. An appreciation of the significance of radiographic changes is important, particularly during pre-purchase examinations of older, extensively used horses. Rodeo horses can compete successfully despite many chronic orthopedic maladies of the forelimb, but in general the barrel horse has less tolerance to such problems. I have seen many good team-roping horses that were so sore in the front end that it was difficult to get them to trot on a hard surface, yet these horses are often working fine. However in

the barrel horse, any lameness detected in the front limb is worthy of evaluation (Fig. 3). Relatively minor forelimb lamenesses in barrel horses frequently impair performance significantly.

Navicular disease, as in all Western horses, is fairly common in rodeo horses and eventually renders many unfit for use. This author emphasizes good farriery, with attention to maintaining a proper hoof angle and proper medial-to-lateral balance, combined with long-term nonsteroidal anti-inflammatory drug (NSAID) therapy in early cases. Some cases do respond favorably to intra-articular medications, e.g., sodium hyaluronate and corticosteroid combinations, injected into the distal interphalangeal joint. It is the author's experience that when this disease progresses to a point where these treatments fail to keep the horse sound enough for use, palmar digital neurectomy is usually the only practical means of returning the horse to use, and often this will succeed in achieving satisfactory use for several years. It has been this author's observation that most cases of true navicular disease will cause lameness by the time a horse is 6–7 years of age. Older horses which develop lameness can clinically appear similar to cases of navicular disease, and when borderline radiographic changes are present in the navicular bones, it becomes tempting to arrive at that diagnosis. This author tends to approach such a diagnosis cautiously in older horses, because many will eventually be proven lame from other causes.

Degenerative joint disease (DJD) frequently develops in the interphalangeal joints of older horses that have been used hard, particularly in those with pigeon-toed conformation. Some are managed reasonably well with medical therapy. In refractory cases with advanced DJD of the proximal interphalangeal joint, surgical arthrodesis is a viable option for treatment. It is the author's experience that

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this procedure produces more satisfactory results in cases involving the hindlimb than the forelimb, and this most likely is a result of differences in the biomechanics of those limbs.

Joint disease in the forelimbs is a common finding in many of these horses, particularly in older horses that have been used extensively. Medical management often includes the use of NSAIDs, polysulfated glycosaminoglycans, intravenous sodium hyaluronate, and intra-articular products (sodium hyaluronate and corticosteroids). Extended periods of rest are helpful, but this is particularly difficult to obtain in the better horses. Shoeing is a problem, because these horses often are shod by different farriers as they travel around the country. Procrastination in having a horse reshod, coupled with frequently lost shoes, often results in excess toe and loss of heel, and this is usually the owner's fault. The most common errors created by farriers observed by this author are improper medial-to-lateral balance, most commonly excessive craniolateral toe and loss of medial heel, and a shoe not "backed up" under the heel.

Hindlimb lameness can be more of a challenge to diagnose and manage in rodeo horses. Horses in virtually all rodeo events will not perform well with significant lameness in the hindlimbs. Hock lameness, specifically pain in the distal intertarsal and tarsometatarsal joints, as mentioned earlier, is common in these horses. Intra-articular injections are performed more commonly today than ever and are a very useful tool in managing these cases. Most cases of hock lameness prove to be bilateral to some degree. They typically appear, at the trot, to travel with some adduction of the hindlimbs, and trotting in circles tends to exacerbate pain in the limb which is inside. Forced flexion of the limb for 90 s frequently will increase the lameness when the horse is trotted off. Pressure over the apex of the medial splint bone often causes the horse discomfort. Presence of the above symptoms is usually enough to warrant a clinical diagnosis of pain in the hock. Radiographs are prudent, but frequently reveal no abnormalities in horses that are in the early stages of developing lameness in these joints. Approach to medical management is all too often dictated by the schedule the owner has planned. Rest, when combined with conservative medical therapy, is useful but often hard to achieve.

Advanced cases of DJD of the distal tarsal joints are usually accompanied by obvious radiographic evidence of loss of articular cartilage and varying degrees of enthesiophytosis and subchondral bone demineralization. Often, cases that have advanced to this point have become rather refractory to therapy and will no longer perform. Extended rest will result in spontaneous arthrodesis of some of these joints, and some cases will return to use as a result. Procedures to surgically promote arthrodesis are well described^{2,3} and have met with fairly good success; thus, on good horses that have become too lame to compete, surgical drilling of the distal intertarsal

and tarsometatarsal joints is recommended in the author's practice routinely.

Lameness originating in the stifle can be more subtle and difficult to diagnose. Whereas osteochondrosis is a common cause of stifle lameness in young horses, it is not so commonly diagnosed in adult rodeo horses. Occasionally, cases will present with subchondral cysts in the medial femoral condyle, and the author assumes that this condition has probably been present since a young age but represents the case that has competed relatively successfully despite it. However, this condition can eventually lead to secondary DJD, thus resulting in a horse that has a history of soundness which finally develops lameness due to secondary osteoarthritis.

More often, stifle lameness develops secondary to injury. This joint is very susceptible to injury in most horses competing in rodeo events, particularly the calf-roping horse and the barrel horse. Whereas some cases present obviously lame, the more challenging cases may not exhibit overt lameness, yet have significantly impaired performance. Videotapes of runs, particularly in barrel horses, have proven to be of great value to the author when viewed in slow motion. Often, a diagnosis as to the source of the pain is not concrete until the horse responds dramatically to intra-articular therapy.

One of the dilemmas facing the practitioner in managing an acute injury involving the stifle joint is achieving an accurate diagnosis. This joint, more than any other, is constructed such that many of the structures vulnerable to injury are soft tissue and therefore not amenable to radiographic evaluation. Physical manipulation of the joint, which is very valuable in the human patient, is at best difficult to perform in a horse. Diagnostic ultrasonography has value, but because of the size of the joint has limitations. The best means of obtaining an accurate diagnosis is diagnostic arthroscopy, but this necessitates general anesthesia as well as some degree of convalescence from the procedure.

The horse's stifle is compartmentalized into three potential joints, potentially. Whereas communication between various joints exists, their presence is not accurately predictable. Therefore, anesthesia of these three joints is performed separately. By far the most common joint that responds positively to diagnostic anesthesia in rodeo horses is the medial femorotibial joint. Acute lamenesses, which are obviously sore, and in which diagnostic anesthesia confirms the stifle as the cause, are managed cautiously. If significant joint effusion is detected, one must consider that significant trauma has occurred within the joint. Often, these lamenesses do not present with detectable effusion, yet block out. The author's approach is 30 days stall rest with daily walking, followed by communication with the owner. If the horse appears sound to the owner, they typically are instructed to exercise the horse lightly and under saddle for 7 to 10 days, then return for follow-up examination. Often, cases will

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Fig. 4. Damaged articular cartilage, medial femoral condyle.

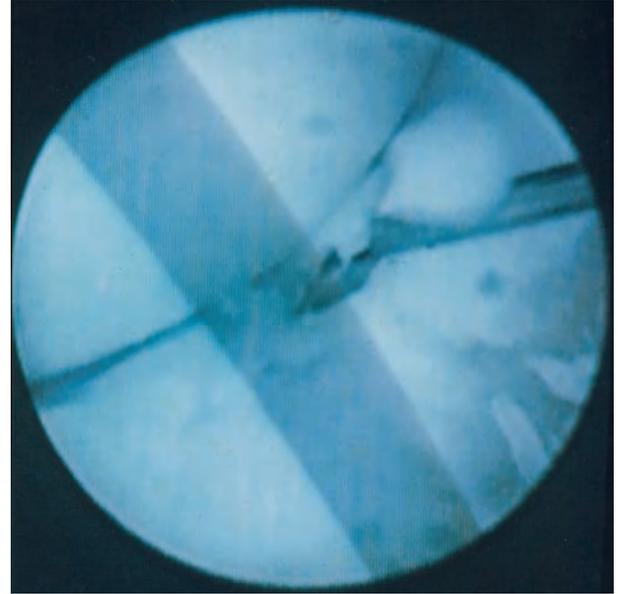


Fig. 5. Partial tear of medial meniscus.

appear sound on follow-up, and it is assumed these may only represent sprains of supporting structures of the joint. If lameness has recurred, it is prudent to advise an owner that more serious injury may have occurred and diagnostic arthroscopy is indicated. Due to the pressures of competition, owners often opt for medical management in cases that are moderately lame. The author's experience is that of all treatments regimens used, intra-articular treatment seems to be the most effective means of managing pain in the stifle. Systemic medications do not seem to afford as much relief as is so often observed when managing joint pain lower in the limbs.

Diagnostic arthroscopy of such cases in the author's practice has most often revealed damage involving the articular cartilage on the distal medial femoral condyle (Fig. 4). Meniscal tears, (Fig. 5) tears of meniscal ligaments, and cruciate ligament injuries have been diagnosed, although fairly infrequently. Any of the aforementioned injuries should be viewed as potentially career-ending, although some lend themselves to surgical treatment to the degree that select cases can resume their careers.

Another hindlimb injury that occurs in these horses, and can be difficult to diagnose accurately, is proximal suspensory desmitis. Further, cases which have sustained substantial tears have proven difficult to manage successfully. More recently, surgical injections of lesions with bone marrow aspirant combined with rest has been utilized in treating these, as well as radial extracorporeal shock wave therapy. The author's experience with these modalities has not provided adequate time or case

numbers to reach any conclusions as to their efficacy.

Diagnosis of this condition usually is a result of ruling out other conditions and often is arrived at by first eliminating pain from the fetlock down with diagnostic anesthesia, followed by ruling out tarsal lameness with intra-articular anesthesia and radiographs. At that point, a positive response to anesthesia of the peroneal and tibial nerves would prompt the clinician to evaluate the proximal suspensory ligament. Diagnostic ultrasonography is appropriate in such cases.

Obviously, a variety of other injuries may occur in the hindlimb. The above are simply some of the more common ones of significance. Catastrophic injuries occurring during these performances are rare. Interestingly, one injury that is rarely seen in any but the Western horse is comminuted fracture of the second phalanx. This injury occurs most frequently in the hindlimb,³ and given the nature of rodeo events, is understandable and is associated with abrupt, forceful stops and severe torque in sharp turns. The use of heel caulks and other various traction devices are not as common as they once were, and undoubtedly such shoeing can contribute to the incidence of second phalanx fracture. These injuries are very serious and often result in disruption of both the proximal and distal articular surfaces of the second phalanx. Internal fixation with bone plates and screws has been the author's preferred means of managing these cases, and whereas this should probably be viewed as a procedure to save an animal's life, a number of cases have been returned to use. Economic restraints sometimes preclude repair with internal fixation, resulting in management with transfixation casting. This pro-

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cedure is a viable option to salvage an animal in a more affordable manner.

Diagnosis of any significant acute lameness of the lower limb in a rodeo horse should include possible fracture of the second phalanx in the list of possibilities. Such injuries may present with incomplete cracks, which can be elusive radiographically. If substantial lameness is present, diagnostic anesthesia indicates the source is distal to the fetlock, and no other abnormal findings are present, thorough radiographic examination is essential. If radiographs reveal no abnormalities, nuclear scintigraphy should be considered. The author has been

suspicious enough in some cases that, despite the lack of documentable evidence of fracture, the cases were still managed as a probable second phalanx fracture. Failure to do so could risk complete failure of the bone with resumed use.

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