New Developments in Anatomy at Iowa State University

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Lamenesses of the hind leg often offer considerably more difficulty in diagnosis and treatment than those occurring in the foreleg. This is due to several factors. The hind leg is not picked up as readily as is the foreleg, especially in those animals that are not well broken. A number of the commonly occurring lamenesses are encountered high in the leg, and the heavy muscle mass makes visual-inspection, palpation, and radiographic examination difficult. In some of the more uncommon lamenesses, unless one has considerable experience, it may be difficult to detect the lame leg, or to pinpoint the exact location of the cause of the lameness. Treatment may also be hindered by the above mentioned difficulty in manipulation and inaccessibility of the part.

One of the causes of lameness that is not too infrequently observed is a fracture or fractures of the pelvic bones. Most commonly noted are fractures of the tuber coxae. The exact diagnosis, in some cases, may have to be delayed until the usual swelling recedes. If the animal is seen early, or after the acute swelling subsides, the diagnosis is not difficult. Asymmetrical outline of the tuber coxae will be noted, and usually crepitation may be detected. Treatment of the condition is variable. Usually, if the lameness does not persist and the fractures of the tuber coxae are simple, stall rest for several weeks is the treatment of choice. Occasionally animals have a persistent lameness due to muscle trauma at the time of the original injury. Atrophy of the lateral muscles of the thigh may result. Usually this is permanent, but injections of counterirritants may be of some value in the tensor fascia lata and gluteus superficialis. Compound fractures of the tuber coxae or sequestra formation following a fracture are not rare. In most cases, removal of the sequestrum and curetting away necrotic bone is necessary before healing will result.

Fracture or fractures of the other bones of the pelvic girdle are seen. These usually result from the animal falling or rearing over backwards, though some may be said to occur spontaneously under exertion or a twisting strain. Diagnosis may be difficult if the area is swollen prior to examination. Usually crepitation may be detected, either by external palpation with the animal moving or shifting its weight, or by rectal palpation. Distortion of the pelvis may sometimes be detected by rectal palpation, especially if the bone(s) are far out of alignment or after a lapse of a week or so when a rather firm swelling will be noted over the area of the fracture(s). Treatment is usually limited to stall rest. Prognosis is variable, depending upon the probabilities of nerve damage and functional damage with regard to locomotor stability, and in the case of mares whether or not the distortion will be

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Fig. 1. Radiograph of an essentially normal hock. P-A view. Note the articular surfaces are clearly outlined.

Fig. 2. Anterior-posterior view of a macerated hock which is normal. This view is similar in point of illustration to Fig. 1.

Fig. 3. View of a macerated hock illustrating extensive ossification of the distal and central row of tarsal bones. This view corresponds to the radiograph Fig. 4.
severe enough to preclude the use of the animal for breeding. Radiographs should be requested in a number of instances, but if the animal is much larger than a small Shetland pony the results are not often satisfactory.

Trochanteric bursitis (so called whirlbone lameness) is not supposed to be rare in light horses and racing animals. However, extremely few cases are noted. It may be a good diagnosis since no one can prove you wrong without necropsy of the animal. Most animals that have been observed supposedly having the condition have had something else wrong at another site in the leg.

Fractures through the neck of the femur, or through the proximal epiphyseal junction in younger animals are relatively common. The diagnosis in most instances is extremely difficult because of large muscle masses over the area and the extensive swelling which results in fixing of the upper leg in a very short time. Crepitation and visual observation of angulation are both difficult to detect. If a radiograph is possible it will aid or confirm the diagnosis. It may be possible to detect crepitation by rectal palpation, though it may be impossible to pinpoint the lesion. Treatment is not worthwhile except in extremely valuable animals. Occasionally, stall rest may allow use of a broodmare if the animal is young. A permanent lameness almost invariably results — with considerable atrophy of most of the muscles of the thigh and hip. This occurs whether or not the animal is left to its own devices, or if reduction and immobilization by means of splints, intramedullary pins, etc. are used.

Several types of lamenesses in the stifle area are seen. One of the more common is a gonitis — inflammation of the stifle joint itself. This often is a purulent or infected gonitis in foals — commonly resulting from localization in the joint(s) of an animal with an umbilical infection. Treatment in foals should be long continued systemic administration of antibiotics (usually aqueous penicillin is the agent of choice), plus aseptic drainage of the excess joint fluid and purulent ma-

terial, and injection of aqueous penicillin into the joint following drainage. Cortisone is usually contraindicated until the active infection has been controlled; even then, aqueous penicillin is usually added to the cortisone preparation when injected. This is most effective if injected directly into the joint(s) affected, rather than systemic use.

Gonitis in older animals may be purulent as a result of penetrating wounds, or occasionally it follows an attack of strangles. The treatment is the same as in foals. Most gonitis in older animals is only inflammatory, and usually is due to trauma from blows, kicks, etc. Cold packs are indicated for the first 48 hours. Following this, hot packing will tend to alleviate the pain and speed healing. Injection of a cortisone preparation directly into the joint cavity is indicated in many cases. Severe joint damage resulting from trauma sufficient to crush or rupture the menisci does not offer too favorable a prognosis. Crepitation may be noted in some as the distal end of the femur and the proximal end of the tibia meet when the menisci are crushed or displaced. Commonly, if this or other types of severe gonitis occur, atrophy of the quadriceps group of muscles occurs after a lapse of a month or so. The lameness is permanent if the menisci are crushed or if atrophy of the muscles results. Radiographs of the stifle (latero-medial and anterior-posterior views) are often necessary to confirm arthritis of the joint or crushed menisci.

Lamenesses involving the patella and patellar ligaments are relatively common in younger animals. One of the most often observed is upward displacement of the patella. This may be transient with the animal showing only a slight hesitation in flexing and extending the joint, or the patella may more or less lock for a considerable period of time with the leg being fixed in extension. In these younger animals it is often possible to detect injury to the tibial tuberosity — the tuberosity being more or less lifted or pulled upward by the pull of the straight patellar ligaments. Prognosis is usually favorable. In milder cases, or in those that have not
Fig. 4. Left Radiograph of hock. Severe tarsitis (spavin) can be noted in this P-A view.

Fig. 5. Right Radiograph of hock. Tarsitis (spavin), and curb are illustrated. Note beginning fusion of distal and intermediate row of tarsal bones. Also, small metatarsals are “pulled” up into joint, and tuber calcis forms a more acute angle than normal with the tibia.
persisted for too long a period of time to allow the trochlea of the femur to become deformed, injections of counterirritants around the straight patellar ligaments, or blistering the stifle along with several months of stall rest may be all that is necessary. Correcting heavy parasitism and adding steamed bonemeal to the ration is indicated. In those cases where the condition is severe, or where it has persisted over a long period of time, section of the medial straight patellar ligament is the method of choice. If properly performed, this procedure is safe and will not leave a visible scar or blemish.

Occasionally, animals are seen that have incurred some severe blow at the point of the stifle. No fracture of the patella, tibia or femur can be demonstrated; nor may a luxation be detected. Yet the animal remains lame, and progressive atrophy of the quadriceps group of muscles results. The cause is not clear, but it is believed that damage to the nerve supply of the muscles has resulted from the original trauma. Injections of counterirritants (such as are used in shoulder sweeney) to fill out the area have been of little value.

Various types of lamenesses and blemishes affect the hock. Usually, bog spavins are noted on younger animals, especially those that are well fed, and that have relatively straight hocks. This is an indication of some inflammation of the synovial surfaces and may indicate an early arthritis, though most commonly the animal shows no evidence of lameness, nor is it usually possible to demonstrate articular changes by means of radiographs. Draining the excessive synovial fluid is easy, but is not often effective. Repeated drainage and injections of cortisone preparations following each draining are relatively ineffective also. To this is added the danger of introducing infection into the joint capsule. The most satisfactory method of treatment seems to be the application of a blister to the hock area. This may have to be repeated several times at 30 day intervals. Occasionally, injection of a counterirritant, such as Lugol’s solution, directly into the joint cavity may be effective. Ligation of the saphenous vein above and below the hock is rarely used at present.

Bone spavins are probably the most common cause of lameness in the hind leg. Some may be palpated or are visible, others, the so-called “blind jacks” or “blind spavins,” can only be demonstrated by means of radiographs. Symptoms or signs of the resulting lameness are difficult to describe. Usually, the animal will warm out of the lameness with exercise — especially in the early stages of the arthritis. The tip of the toe of the affected foot is commonly worn. Turning may exaggerate the lameness. Picking the leg up and holding it crammed for 30 to 40 seconds, then starting the animal out at a trot will often exaggerate the lameness for the first few steps. This is the so-called “spavin test”; however, it only indicates a lameness of the leg in the hock or above.

The treatment of bone spavin is ordinarily counterirritation followed by several months rest. The use of the actual cautery seems to give as good or better results than the other types of treatment, especially with “blind spavins.” Injection of Lugol’s solution into the area affected is employed and is successful on occasion. Severing the cunean tendon and at the same time nicking the periosteum of the bony groove in which it lies is used in some cases. Severing the tendon serves no useful purpose in small exostoses, and is of no value in “blind spavins.” The irritation produced by nicking the periosteum is the important part of the procedure. Most practitioners prefer the use of actual cautery. Very large exostoses may be seen on occasion that result in no lameness. In these cases the lower portion of the joint has fused, and since there is no movement with irritation of the joint surfaces, there is no pain.

Injuries to the upper portion of the hock joint or to the lateral side of the joint — even when accompanied by an exostosis — should be viewed with caution if use of the actual cautery is requested. Often, extremely large exostoses form after cautery, or the articular surfaces of the tibial or fibial tarsal bones are injured, resulting in a permanently stiff joint. In these cases, a blister is probably indicated to keep the owner pacified, even though it may be of relatively little benefit other than to allow rest of the joint.