

Infectious Lameness In Foals

Injury to the musculoskeletal system is a regularly encountered crisis in foals that can be recognized immediately after birth or at any time during development. The foals' immature immune system along with their fragile musculoskeletal unit will produce varying degrees of lameness when either is compromised. Lameness in foals should be differentiated between infectious and non-infectious etiologies. Often, the progression of lameness in foals is rapid and contains potentially life-threatening consequences; therefore, timely recognition, accurate diagnosis, and appropriate treatment are imperative for a positive outcome. The "hide, wait, and watch" approach to foal lameness often yields unforgiving results.

The lameness examination in foals is similar to that of adults with minor modifications. Patience is important when examining foals because behavioral characteristics of foals can make lameness examination more challenging and confusing. Isolation of the lame limb can be difficult if subtle, but foals will usually display the lameness in a dramatic fashion and/or exaggerate their effort to unload the affected limb. The gait should be observed while walking and at a slow trot; most foals are observed unrestrained while following the mare. A routine physical examination and extensive digital palpation of the affected and contralateral limbs are key to isolating the origin of the lameness. Compression of the foot to assess for pain may be made with the hands and fingers on young foals rather than hoof testers. Close attention should be given to the foal's stance and to any sensitive areas, swellings, or joint effusion. Complete blood count, fibrinogen and IgG levels are routinely performed. Routine ancillary diagnostic aids include nerve blocks, radiographs, ultrasonography, joint fluid analysis, computed tomography (CT), and magnetic resonance imaging (MRI). Changes radiographically often lag behind the clinical course

of disease and a lack of pathology is not a guarantee of lack of disease. Determination of the location and etiology of infectious causes of lameness in foals is crucial in deciding a course of therapy and assessing prognosis. As a rule, all foal lameness should be considered as infectious in origin until proven otherwise. All lameness in a young foal should be treated as an emergency. In these instances, prompt appropriate treatment uniformly results in a more favorable outcome than if treatment is delayed. The clinical complex of joint sepsis, infected growth plates, and/or infected bone occurs in foals quite commonly. This typically occurs in foals less than 4 months of age but can occasionally occur in older foals as well. Bacteria may gain entry through the umbilicus, respiratory tract or gastrointestinal tract, although direct penetration of a joint from external trauma may result in joint infection. Because of the relatively sluggish blood flow adjacent to joints and within growth plates, bacteria can proliferate and colonize.

Diagnosis is determined based on clinical signs, diagnostic imaging findings, increased joint fluid white blood cell count, and joint fluid culture. Foals with joint infections, septic growth plates, and/or infected bone typically have fever, lameness, joint effusion or soft tissue swelling, and palpable pain of the involved area. Radiographic changes may not initially be present; however, serial radiographic examination should be performed because radiographic changes will often lag clinical signs by 1 to 3 weeks. Ultrasonography is beneficial when identifying soft tissue injury or inflammatory processes of the upper limb. Computed tomography and/or MRI allow early detection of bone involvement and can provide more detailed structural information prior to initiating therapy or as a mean to monitor therapy.

Treatment of a septic joint consists of removing the primary source of infection if known and relieving the joint infection via combinations of joint lavage, regional limb perfu-



sion, and systemic and intra-articular antimicrobials. Often, the affected joint(s) will need to be lavaged repeatedly. Chondroprotective agents may be beneficial in restoring and maintaining joint health. Hyperbaric oxygen therapy for treatment of bone infection has shown to be beneficial. Supportive care for foals that are very lame or recumbent can include continuous infusion of nutrition, high doses of systemic antibiotics, infusions of plasma, assisting the foal to nurse and stand, and basic care to prevent bed and bandage sores.

Many cases of sepsis and septic arthritis can be prevented by post-birth veterinary examination. This examination not only evaluates the foal's vitals, but also conformation, attitude, appetite, and consumption of quality colostrum. An IgG should be measured on every foal no matter how well they nursed to insure adequate levels were absorbed. Some mares leak colostrum prior to foaling or just do not produce quality colostrum. Identifying and correcting the lack of immunologic defense is an important step in preventing infectious diseases.

The prognosis for foals with septic arthritis or osteomyelitis is favorable, but ultimately depends upon an early diagnosis and treatment, infection location, and antimicrobial susceptibility. It is difficult to prognosticate the outcome of these cases. In general, foals treated early for septic arthritis can have a good prognosis for full recovery; foals with an articular infection involving subchondral bone have a poor prognosis. Multiple sites of involvement have a detrimental effect on survival and athleticism.