



South Shore Equine Clinic & Diagnostic Center
151 Palmer Road
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CELLULITIS



Cellulitis is a severe, diffuse, painful process, where bacterial infection dissects through the tissue planes. Cellulitis can occur anywhere in the body, but here we will explore the entity of limb cellulitis. Cellulitis can be caused by many bacterial organisms; however *Staphylococcus* has been implicated most frequently. Cellulitis can be primary, when no skin lesion is identified; or secondary - due to penetrating skin trauma / wound, surgical incision, or joint injection. Primary cellulitis is noticed acutely, whereas the onset of cellulitis from secondary causes may take up to two weeks. Studies in humans have shown that blunt trauma increases the risk for development of cellulitis. Clinical signs noted are acute lameness (sometimes non weight bearing), severe swelling of the limb, heat and pain on palpation, and possible fever. Skin sloughing can occur in severe cases secondary to persistent limb swelling which compromises blood vessels, or from secondary bacterial toxin production causing necrosis of tissues. Cellulitis can occur in any or multiple limbs, although it is more often reported in the hindlimbs.

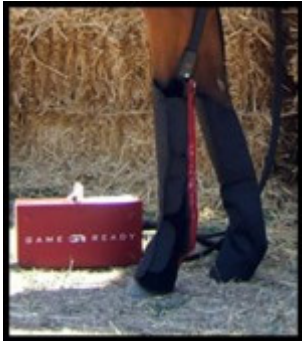
Diagnosis of cellulitis is based largely on historical information and clinical signs. Your horse will receive a complete physical examination, blood work (to assess the white blood cell count and distribution – evidence of the presence of infection), as well as other advanced diagnostics to help identify the cause. If the horse presents with a fever, it is recommended to obtain a sterile blood sample for culture, as this can aid in diagnosis, and appropriate treatment regimen. A positive blood culture would point to systemic illness, which can complicate and prolong the course of disease.



Ultrasonography can be useful in diagnosis to visualize synovial effusion, subcutaneous fluid pockets, subcutaneous tracking of fluid, gas pockets, or vascular thrombosis (blood clot in the vessel). Ultrasonography can also be used to help guide aspiration of fluid for culture. Most horses with primary cellulitis will yield a positive subcutaneous tissue culture result for *Staphylococcus*; although other bacteria seen are *Streptococcus*, *Pseudomonas*, *Enterobacter*, *E.coli*, *Enterococcus*, or *Citrobacter*. However, there are many instances where an exact cause cannot be obtained for horses with primary cellulitis. Arthrocentesis (obtaining a synovial fluid sample from a joint) in cases of cellulitis is controversial because you may risk introducing the bacterial skin contaminant into an otherwise healthy joint. However research has shown that this diagnostic test is sometimes necessary in order to obtain an accurate diagnosis. Also, if the joint itself is also infected, it may then be treated with fluid lavage and intra-articular antibiotics. Radiographs are also often obtained. They can show potential bony fragments, sequestrum (dead bone) formation, or bony changes that may occur secondary to joint sepsis (infection).



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The treatment period for horses with cellulitis can be intense and lengthy, depending on the severity of infection; and the condition can be life threatening in some cases. The affected limb should be thoroughly cleaned with an antiseptic, cold hosed, and bandaged. Research has demonstrated that intravenous broad spectrum antibiotics (with penicillin and an aminoglycoside like gentamicin) yield a more favorable outcome. Cold therapy and compression are often employed in the treatment of cellulitis. Using a *GameReady* system enables both to be accomplished at the same time. Therefore, it is often best to hospitalize these horses in case they need intense medical management in the way of intravenous fluids, intravenous antibiotics, anti-inflammatories (phenylbutazone or Banamine®) and at times, regional limb perfusion and intravenous or epidural administration of powerful pain relievers, such as morphine, ketamine, and butorphanol. Pain management can be difficult in these cases; however it is extremely important, as contralateral limb laminitis can be a sequela and life ending consequence if the horse remains non weight bearing for prolonged periods of time.

Prognosis for the horse returning to function is guarded, and repeat episodes may occur. The limb may not ever return to its normal size and contour. Fever at the time of hospital admission, persistent lameness, and development of laminitis or contralateral limb laminitis is associated with poorer outcome and increased risk of euthanasia. It is impossible to prevent some of the causes of cellulitis, but in order to help prevent some of them in your horse, try to practice excellent hygiene. When bathing your horse, be sure to properly rinse all soap and antiseptics from the limbs, so that skin scalding does not occur. If the horse does get a minor scratch or scrape, be sure to thoroughly cleanse the area with antiseptic such as Betadine® solution and apply anti-bacterial wound ointment. Continue to keep the area clean, dry, and bandaged if necessary. Horses that already have skin lesions may have an increased risk of inoculating deeper structures if blunt trauma occurs. Remember, even a minor wound could turn out to be life threatening.

