**CONTRAINDICATIONS FOR NERVE BLOCKS IN HORSES**

Regardless of the nature of the exact procedure, there are several potential complications and contraindications associated with arthrocentesis that should be considered.

***Expense*** To block or medicate a joint costs approximately $65 to $250 *per joint,* depending on the drug used. To inject a "set" of knees (i.e., two separate joints in the same knee, and inject both knees) will, therefore, cost approximately $1,000.

***Lack of effect*** Despite comprehensive physical and lameness examinations, blocking or medicating a specific joint might not result in the desired effect, or the horse might require additional medication. Two common reasons for lack of response are medicating or blocking a horse that that has periarticular (surrounding the joint) pain rather than pain in the joint itself, or, in medicated joints, the joint was not injected at an appropriate time point prior to performance. To avoid broken or bent needles during perineural administration of local anesthetic solution, the needle should always be inserted detached from the syringe. Spinal needles are flexible and more likely to bend than break and, thus, safer to use if there is a possibility the horse may move the limb. Using a flexible needle is especially important when the difference in range of movement between skin and deeper tissues is large, in case the horse moves during injection. Luer-lock syringes should not be used because they are difficult to attach to the needle after it is inserted, and this type of syringe cannot be detached quickly from the needle to prevent the needle from being pulled out, bent, or broken if the horse moves during the procedure. The needle should be directed distally during insertion when anesthetizing nerves in the distal portion of the limb. Directing the needle proximally may result in proximal migration of anesthetic solution and unintended anesthesia of more proximal branches of the nerve, thus confusing the results of the examination.

"There is no magic injection that will make a lame horse sound," states Hunt. "Medicating joints simply assists horses in racing closer to their natural ability level. To achieve this, the injections need to be performed well in advance of the event--approximately 30 days out."

***Joint flare*** Also called "reactive synovitis," this term refers to inflammation of a joint that can occur following any intra-articular injection. While this condition is rarely career-limiting, it must be treated and distinguished from the more serious joint infection.

"Horses with a joint flare are acutely lame beginning only a few hours post-injection, and the lameness can persist for up to four to six weeks," says Hunt.

***Joint infections*** Horses that develop heat, pain, swelling, and are non-weight-bearing within approximately three to five days post-injection should be referred for evaluation of a joint infection. Most commonly, post-injection infections are due to the introduction and proliferation of bacteria (primarily *Staphylococcus aureus*) into the joint, which can be a career-limiting event.

***Corticosteroid-induced laminitis*** Laminitis--a painful, life-threatening inflammation of the sensitive laminae in a horse's hoof--can be induced following the intra-articular administration of corticosteroids. Ross and French agree this is a potential threat in horses having multiple joints worked on, but neither surgeon has ever seen a case firsthand. In their opinions, the total amount of steroid administered per horse should always be considered, particularly when using triamcinolone, of which no more than 18 mg should be administered *per horse* at any given time.

"We are not as worried as we used to be, but (we're) certainly cognizant that there is a theoretical risk," says French.

***Articular cartilage degeneration/steroid chondropathy*** High doses of some corticosteroids are associated with detrimental effects on articular cartilage structure and/or metabolism (alterations in the balance between the natural production and breakdown of articular cartilage components).

"Most experts now agree that the judicious use of intra-articular steroids can be beneficial," emphasizes French. However, "in horses that have multiple joints injected multiple times with moderate to high doses of corticosteroids, articular cartilage damage is a real concern."

Descriptions of intra-articular drugs and recommended doses are in Chapter 85 of Ross' book, *Principles and Practices of Joint Disease and Treatment*, co-authored with John. P. Caron, DVM, MVSc, Dipl. ACVS, and Ronald L. Genovese, VMD.

While the cost of injection and the development of joint flares are relatively fixed and unchangeable, joint infections can be minimized by properly preparing the joint and not injecting joints that are scurfy, dirty, have signs of a skin infection (dermatitis), or those that have recently been sweated.

***Risk for further injury*** Injecting joints of horses with injuries that could be considered career-ending is contraindicated. Treating a horse with serious articular damage--fractures or ligamentous and/or cartilage damage--could make him artifically sound and, thus, more likely to sustain further injury.

**Overall Recommendations**

***Ross:***"I believe there are many more advantages than disadvantages for performing joint injections in the average horse, in terms of improving the cosmetic appearance of a joint post-surgically, for treating inflammation, a synovitis, or chronic osteoarthritis. Injections can be frustrating, however, because there are some conditions in which horses will not benefit."

***Hunt:*** "I recommend approaching each case conservatively. We need to remember that in Thoroughbreds the horse is running 35 to 40 miles per hour. We need to use joint injections to keep the horse as comfortable as possible, rather than medicating the joints in a 'performance enhancing' capacity. I also suggest avoiding 'steroid abuse.' Using a combination of hyaluronic acid and low-dose steroid, and adopting a multimodal treatment approach to soundness is warranted in athletic horses."

***French:***"The judicious and appropriate use of intra-articular medications will help maintain the desired level of performance *and* prolong the athlete's career. Injections should not be performed to enhance performance, particularly in sport horses that typically have longer careers than racehorses. Therefore, joint injections need to be used in conjunction with proper training and proper convalescence (when necessary)--we need to look at the big picture."

**Take-Home Message**

In summary, one or more joints can be safely injected at any given time in select horses to either localize lameness or medicate a joint to help minimize swelling, pain, and inflammation and allow the horse to perform more comfortably. Additional information regarding specific drugs for intra-articular use has been published previously by *The Horse* and is available online at TheHorse.com in article[#5160](http://www.thehorse.com/ViewArticle.aspx?ID=5160).