

Equine Joint Injections

Joint injections can help veterinarians diagnose lameness or medicate a horse's painful joint

Overview

An injection within the joint (intra-articular) is performed to administer one or more drugs or agents directly into a joint in a sterile manner. The two most common reasons for a veterinarian to perform a joint injection are to anesthetize or “block” a joint during a lameness examination or to medicate a joint to help keep horses’ joints—particularly those of athletic horses—comfortable and pain-free.

Intra-Articular Injection

Joint injections are only performed by veterinarians. To perform an injection, the joint is first cleaned with an antiseptic soap to reduce the number of bacteria at the injection site. The hair might be clipped if the horse is particularly hairy or dirty, but this is not often necessary. Next, the soap is removed by thoroughly rinsing the area with isopropyl (rubbing) alcohol. After the veterinarian has prepared the joint, the needles, and syringes, s/he uses sterile gloves to inject the desired drug or product into the clean joint. The needle is first inserted into the joint and, if necessary, redirected until synovial (joint) fluid is observed in the hub of the needle. The syringe is then attached to the needle and the desired product(s) are infused into the joint.

While cleanliness is important to minimize the chances of a potentially fatal joint infection, proper restraint of the horse is also imperative to ensure the safety of the horse, handler, and veterinarian. In well-behaved horses, a twitch is usually sufficient restraint. In less well-mannered horses, sedation might be indicated.

Blocking Joints

Blocking a joint involves the intra-articular administration of local anesthetics, such as lidocaine or carbocaine. This is an



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important component in localizing lameness. For example, once a veterinarian has established the general anatomic region where the horse is sore by palpation, flexion, gait analysis, or other techniques, s/he might elect to block a joint. Fifteen to 20 minutes after the local anesthetic is injected in the joint, the horse can be re-assessed to determine if its lameness has changed. If the horse has improved and is more sound after blocking, then the anesthetized joint is likely contributing to the horse's lameness. Treatment then can be undertaken.

Joint blocks can be performed in conjunction with nerve blocks and radiographs or even more sophisticated diagnostic tests such as magnetic resonance imaging (MRI) or bone scans (nuclear scintigraphy).

Medicating Joints

At present, there are four different types of medications that are normally injected into joints: corticosteroids, hyaluronic

acid, polysulfated glycosaminoglycans (PSGAGs), and antibiotics.

Corticosteroids, hyaluronic acid, and PSGAGs each have a different mechanism of action, but in a practical sense, they are all used to decrease inflammation (including pain and swelling) and improve mobility. The use of each of these medications is associated with pros and cons. The decision of which product or combination of products is best will depend on the joint, the horse's function, your veterinarian's preference, and timing before competition.

In contrast, a small amount of antibiotic can be injected along with any of the above-described medications for infection control purposes. While not all veterinarians use antibiotics during routine intra-articular injections, some view this as a type of “insurance” to minimize the chances of joint infection. While the development of a joint infection secondary to a joint injection is rare, some veterinarians believe it is better to be safe than sorry.

Contraindications

The potential benefits of a joint injection are far-reaching; however, a number of important concerns, complications, and contraindications exist that horse owners need to be aware of.

First, medicating joints is expensive. A single joint will cost between \$65 and \$250 depending on the medications administered. Since performance horses frequently have more than one source of pain, multiple joint injections are not uncommon. To inject a set of knees (upper and lower knee joints in both front limbs) will cost approximately \$1,000, and there is no guarantee that the joint injections will prove effective.

Reasons that a horse might not respond favorably, or as anticipated, to a joint injection include extra-articular sources of pain

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(e.g., around the joint) or the medication was administered too long before or too close to the athletic event. Predicting the exact time to inject a particular joint can be a clinical challenge for a veterinarian. In addition, the owner or trainer needs to be cognizant of the fact that a joint injection is not a magic bullet—medicating a joint with a small volume of any drug is not going to make a lame horse sound. The goal of medicating a joint is to help a horse perform closer to its natural ability level.

Next, numerous serious, painful, career-limiting, and potentially life-threatening medical sequelae can occur subsequent to a joint injection. These include joint flare, joint infection, laminitis, and irreversible articular cartilage degeneration.

A joint flare is a non-career-limiting condition provided it is treated appropriately. Signs of a joint flare include heat, pain, effusion, and lameness, and these signs develop within hours of the injection. While the prognosis is very good, the lameness can persist for up to 4-6 weeks.

In contrast, joint infections, caused by the introduction and multiplication of bacteria inside the joint, cause heat, pain,




A detailed view of a fetlock (metacarpal/metatarsophalangeal) joint injection.

effusion, and a non-weight bearing lameness on the affected limb. These signs are obvious within 3-5 days of a joint injection. Horses with a suspected infection require immediate treatment, and the prognosis

is far less optimistic than for a joint flare. Joint infections can be almost eliminated by employing strict aseptic technique and not injecting joints that are scurfed, have recently been sweated, or have signs of dermatitis (skin infection).

Both joint flares and infections are important sources of morbidity and economic loss; however, they are both quite rare. It is currently estimated that only 0.1-0.5% of injected horses suffer a flare or infection.

For horses injected with the corticosteroid methylprednisolone acetate (Depo-Medrol), post-injection articular cartilage degeneration is an important concern. Articular cartilage degeneration does not occur with the corticosteroids triamcinolone acetonide or betamethasone esters. Steroid-induced laminitis is typically not a concern in modern veterinary practice due to increased knowledge surrounding the potential detriments. Similarly, steroid-induced articular chondropathy (cartilage degeneration) is less of a problem today than in the past. Intra-articular steroids are injected judiciously, often in combination with hyaluronic acid, to maximize the athletic career of the horse in question. 

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