Perineural Anaesthesia: Assessment of Response to Blocks

Relief of pain and resolution of lameness after local anesthetic solution is administered into the fascia surrounding a nerve in the distal portion of the limb usually occurs within 5 min, but anesthesia of larger nerves in the proximal portion of the limb may take 20–40 min. Results of a regional nerve block can be misinterpreted if the horse's gait is assessed before the onset of pain relief. When assessing the effects of anesthesia of nerves in the distal portion of the limb, the clinician should keep in mind that anesthetic solution might migrate up the nerve to anesthetize more proximal structures, thus confusing the results of the examination. To avoid this complication, the gait should be evaluated within 15 min after administering a regional nerve bock in the distal portion of the limb. When a regional nerve block is administered in the proximal portion of the limb, the horse may develop a gait abnormality or stumble because of altered proprioception. When nerves above the hock or carpus are anesthetized, it may be prudent to assess the horse's gait on a soft surface or after bandaging the distal portion of the limb so that abrasion to skin over the dorsum of the fetlock is avoided if the horse stumbles.

If the gait is unchanged after regional anesthesia, the effectiveness of the nerve block should be determined by checking for skin sensation within the dermatome expected to be desensitized. In general, the higher the perineural block, the less accurate skin sensation can be to evaluate the success of the block. This is because deeper tissues are targeted, which may not desensitize the skin surface. For instance, the lateral palmar nerve block and the deep branch of the lateral plantar nerve block target the proximal suspensory region and do not necessarily block the overlying skin.

Skin sensation often is used to assess the success of perineural blocks in the distal limb. This can be performed with a blunt object, such as a pen, haemostat, or needle cap. These objects should not be jabbed into the skin, but applied gently at first with a gradual increase in pressure.

However, some horses are difficult to read and skin sensation may persist even with an effective block. This is especially true for blocks performed more proximally in the limb (above the fetlock). Other manipulative tests that previously caused pain (such as hoof tester examination, deep palpation, and flexion) may need to be repeated to accurately determine if the block worked. For a fractious horse, skin sensation is more safely checked with the limb held or from a distance using a blunt instrument taped to a 3-ft pole. A well-behaved, stoic horse may not react to stimulation of skin even though regional anesthesia was ineffective. For such a horse, reaction to cutaneous stimulation should be assessed before regional anesthesia is performed, or reaction to cutaneous stimulation of the same dermatome on the contralateral limb should be assessed.