**NERVE BLOCK**

**Diagnosis of equine lameness- regional anaesthesia**

Begin the exam with medical history- breed, age, training regimen, onset of lameness, use of medication (specifically analgesic medication).

Key points to note

* To localize the lameness to a specific limb/site, examine the horse during exercise.
* Diagnostic regional anaesthesia should not be performed if there is suspected fracture of the limb.
* Insert needles detached from syringe to avoid bending or breaking.
* Direct needles distally to avoid proximal migration of anaesthetic solution

Lidocaine HCL (2%), mepivacaine (2%), and bupivacaine HCL are the most commonly used anaesthetic agents used.

Distal limb- use 25g ⅝ inch needle

Proximal limb, 22/20g 1 ½ inch needle

**Diagnostic regional anaesthesia of the forelimb**

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**Diagnostic regional anaesthesia of the forelimb**

1. Palmar digital nerve (PDN) block/ heel block (limb in hand)

* Insert needle directly over the palpable neurovascular bundle (approximately 1cm proximal to the cartilage of the foot)
* Direct needle distally and deposit 1.5ml anaesthetic agent near the junction of the nerve and cartilage of the foot.
* If there is no improvement some clinicians do a semi ring block at the pastern to anesthetize the dorsal branches of the digital nerve. Doing a semi ring block may be ineffective since the dorsal branches of the digital nerve contribute little to sensation of the foot.

1. Basisesamoid nerve block/ abaxial sesamoid nerve block (used when PDN block did not reduce lameness)

* Palmar nerves anesthetized at the level of the proximal sesamoid bones before the nerve branches into the dorsal and palmar digital nerves.
* Deposit 2.5-3ml anaesthetic solution at the base of the proximal sesamoid bones over the neurovascular bundle. (Proximal deposition of local anesthetic solution can lead to the fetlock joint becoming anesthetized)
* This localizes the site of pain to the pastern.

1. Low palmar nerve block/ low 4-point block (used when basisesamoid nerve block was negative)- limb in hand/ horse bearing weight on it

* Used to anesthetize the medial and lateral palmar nerves which lies dorsal to the border of the deep digital flexor tendon.
* Deposit 2ml local anesthetic solution using a 25g ⅝ inch needle at the level of the metacarpus to block the medial and lateral palmar nerves.
* After blocking the palmar nerve at the level of the metacarpus, the ramus communicans is blocked using 1ml anesthetic solution
* 1-2ml anesthetic solution is deposited subcutaneously at the distal end of each splint bone to block the palmar metacarpal nerve which lies next to the periosteum of the 3rd metacarpal bone. This completes the 4 point block and localizes the site of pain to the fetlock.

Avoid misdirecting the needle into the digital flexor sheath.

1. High palmar nerve block/ high 4-point block (used when low 4-point nerve block is ineffective) - limb bearing weight

* Anesthetize the medial and lateral palmar nerves by injecting 3-5ml anesthetic solution using a 25g ⅝ inch needle through the fascia distal to the carpometacarpal joint where the nerves lie near the dorsal border of the deep digital flexor tendon.
* Anesthetize the palmar metacarpal nerves by injecting 3-5ml anesthetic solution using a 20/22g 1 ½ inch needle into the angle formed by the junction of the 3rd metacarpal and the 2nd/4th metacarpal bone.

Anesthetizing the medial and lateral palmar nerves alone desensitizes the flexor tendons and inferior check ligament. Anesthetizing the medial and lateral palmar metacarpal nerves alone desensitizes the splint bones, interosseous lig., and proximal part of the suspensory lig.

When these aforementioned nerve blocks are ineffective, clinicians perform joint blocks of the carpus, elbow or shoulder. The median and ulnar nerves are anesthetized simultaneously to exclude pain below the elbow as the cause of lameness.

**Diagnostic regional anesthesia of the hindlimb**

These techniques are slightly different than that of the forelimb.

1. Low 4-point nerve block- same as forelimb except when at the level of the distal aspect of the splint bones, redirect the needle dorsolaterally or dorsomedially, parallel to the surface of the foot. Inject an additional 2ml anesthetic solution subcutaneously to anesthetize the medial or lateral dorsal metatarsal nerves.

1. High plantar nerve block

* Similar to high palmar approximately 1cm distal to the tarsometatarsal joint.
* 3-4ml anesthetic solution using a 20-23g 1 inch needle is deposited axial to the lateral splint bone approximately 1cm distal to the tarsometatarsal joint between the deep digital flexor tendon and suspensory lig.
* Used to assess the proximal aspect of the suspensory lig.

1. Tibial nerve block

* The tibial nerve is blocked about 10cm above the point of the hock on the medial aspect of the limb. It lies in fascia on the caudal surface of the deep digital flexor muscle cranial to Achilles tendon.
* Inject 20ml anesthetic solution using a 20g 1 ½ inch needle in several planes of the fascia surrounding the nerve.

1. Deep peroneal nerve block

* Done on the lateral aspect of the limb about 4 inches above the hock in the groove formed by the lateral and long digital extensor muscles. Use a 20g 1 ½ inch needle directed caudally until it reaches the caudal edge of the tibia and deposit 20ml anesthetic solution.

Tibial and peroneal nerves can be blocked simultaneously to exclude pain in the hock or regions distal to the hock.

VIDEO LINK:

<https://youtu.be/6MVNcy9YE0I>

References

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