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Nerve blocks: What do they mean?

Thomas Hughes
The Liphook Equine Hospital, Forest Mere, Liphook, Hampshire GU30 7JG, UK.

PALMAR DIGITAL NERVE BLOCK
Sack (1975) examined the neural anatomy of the distal forelimb and found that innervation to the DIPJ is provided by branches of the palmar digital nerves, not the dorsal digital nerves as had previously been assumed. Lameness caused by endotoxin-induced synovitis of the DIPJ was found by Easter et al. (2000) to be alleviated by anaesthesia of the palmar digital nerves immediately proximal to the heel bulbs. Lameness induced using a modified shoe with bolts that pressed onto the toe region of the sole was alleviated by anaesthesia of the palmar digital nerves performed at the proximal margin of the ungular cartilages (Schumacher et al. 2000). Based on these findings, a palmar digital nerve block will provide analgesia to the entire foot minus the dorsal laminae and dorsal coronary band. It is recommended that needles be placed through the skin at the proximal margin of the ungular cartilages in a distal-to-proximal direction and that a small volume (1–2 ml) of local anaesthetic solution is used to minimise the likelihood of local anaesthetic diffusion affecting either the dorsal digital nerves or sensation associated with the proximal interphalangeal joint (Schumacher et al. 2004).

ABAXIAL SESAMOID NERVE BLOCK
Anaesthesia of the palmar digital nerves at the level of the proximal sesamoid bones, proximal to the branching of the dorsal digital nerves (abaxial sesamoid nerve block), will desensitise the entire foot and pastern as well as the most palmar aspect of the metacarpophalangeal joint (Wyn-Jones 1988; Barr 1997). By introducing the needle at the base of the proximal sesamoid bones, directing it distally and using a low volume of local anaesthetic solution (1–2 ml) to perform the block, it is hoped that effects on the metacarpophalangeal joint are minimised (Wyn-Jones 1988; Barr 1997).

DISTAL INTERPHALANGEAL JOINT BLOCK
A moderate volume (5–6 ml) of local anaesthetic solution injected into the DIPJ has been shown to reduce lameness associated with pain arising from the DIPJ (Easter et al. 2000), the navicular bursa (Pleasant et al. 1997) and the dorsal margin (toe region) of the sole (Schumacher et al. 2001a). A larger volume of local anaesthetic solution (10 ml) injected into the DIPJ has been shown to anaesthetise the palmar aspect (heel region) of the sole also (Schumacher et al. 2001a). It is important to note that local anaesthetic solution injected into the DIPJ very rapidly affects the navicular bursa. Within 5 min of the injection of 5 ml of a 2% solution of mepivacaine hydrochloride into the DIPJ, lameness associated with the navicular bursa was reduced (Pleasant 1997).

NAVICULAR BURSA
Local anaesthetic solution injected into the navicular bursa will alleviate lameness associated with the navicular bursa, the navicular bone and supporting ligaments (Dyson and Kidd 1993), the toe region of the sole (Schumacher et al. 2001b) and the deep digital flexor tendon (Schramme et al. 2002). As long as the results of the block are assessed within 10 min, analgesia of the navicular bursa does not result in analgesia of the DIPJ (Schumacher et al. 2003).

FURTHER READING
REFERENCES

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