Joint Anesthesia

Distal Interphalangeal (DIP) Joint

Quantity of Local Anesthetic: 4 to 6 mL
Needle Size: 1 to 1-1/2 inches, 20 or 22 gauge

Injection Techniques:

- Dorsolateral approach (Figure 3.74): This approach to the DIP joint is performed with the horse standing. The site of injection for the dorsolateral approach is 1/2 inch above the coronary band and 3/4 to 1 inch lateral (or medial) to midline. A 1- to 1-1/2-inch, 20-gauge needle is inserted from a vertical position and directed distally and medially toward the center of the foot at approximately a 45° angle. The needle should enter the DIP joint capsule at the edge of the extensor process. If entry into the joint is uncertain, the needle can be directed at a more acute angle (more horizontal) to the skin and inserted until the needle contacts the distal end of the second phalanx (P2). It then is "walked" distally until the joint is penetrated.
- Dorsal parallel or perpendicular approaches (Figure 3.75): Some prefer to enter the joint on dorsal midline using the proximal outpouching of the DIP joint above the extensor process. The injection site is just above the coronary band, 1/4 to 1/2 inch above the edge of the hoof wall on the dorsal midline of the foot. With the dorsal perpendicular approach, the needle is directed downward perpendicular to the bearing surface of the foot. With the dorsal parallel approach, the needle is directed parallel or slightly downward (hub of the needle is moved proximally) to the ground to a depth of approximately 1/2 inch. The dorsal parallel approach usually is easier to perform and is recommended by many clinicians.
- Lateral approach (Figure 3.76): The site for injection for the lateral approach is bounded distally by a depression along the proximal border of the collateral cartilage approximately midway between the dorsal and palmar/plantar border of P2. A 1-inch, 20-gauge needle is directed downward at a 45° angle toward the medial weight-bearing hoof surface. Most horses appear to tolerate this technique very well. However, the specificity of the lateral approach is thought to be less than the dorsolateral approach. In one study using the lateral approach, only 65% of the limbs had contrast exclusively in the DIP joint, 20% had contrast in the digital sheath, and 5% had contrast in the subcutaneous tissues.

Pitfalls:

1. Using more than 6 mL of anesthetic and blocking the palmar/plantar digital nerves
2. Interpreting a positive DIP joint block as only a coffin joint problem
3. Entering the digital flexor tendon sheath when using the lateral approach
4. Contacting bone due to incorrect angle of needle with the dorsolateral approach
5. Inability to obtain synovial fluid