

Local Anesthetic Blocks of the Distal Limbs for Dermatologic Procedures

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In the literature

Douglas H, Welsh S, Barr C. Clinical techniques in veterinary dermatology: regional anaesthesia of the canine and feline distal limb. *Vet Dermatol*. 2021;32(1):90-e17.

FROM THE PAGE ...

The distal limb is a common site for dermatologic procedures for both therapeutic and diagnostic purposes. The analgesic protocol should include local anesthesia.

This study reviewed and described the technique of administering regional anesthesia (using either 2% lidocaine or 0.5% bupivacaine) in the distal limbs of dogs and cats. The authors recommend sedation with general anesthesia if necessary (eg, in aggressive patients). The local anesthetic is injected circumferentially around the limb, targeting the major nerves of the distal limb. The manus (ie, distal part of the thoracic limb) is innervated by the radial and median nerves. The pes (ie, distal part of the pelvic limb) is innervated by branches of the common fibular (peroneal) and tibial nerves.

The limb should first be clipped and aseptically prepared. At each injection site, the skin should be tented. On the dorsal aspect of the thoracic limb, the injection is made immediately proximal to the carpus—starting medial to the dewclaw—targeting the superficial branches of the radial nerve and the dorsal branch of the ulnar nerve. On the palmar aspect of the thoracic limb, injection is made on either side of the accessory carpal pad, targeting the median and ulnar nerves. In the pelvic limb, injection is made just distal to the tarsometatarsal joint on both dorsal and plantar aspects, targeting the superficial fibular nerve dorsally, the deep fibular nerve dorsolaterally, and the tibial nerve on the plantar aspect.

Prior to starting the procedure, a maximum dose for the anesthetic should be calculated. For lidocaine, the maximum dose is 6 to 10 mg/kg in dogs and 3 to 5 mg/kg in cats. For bupivacaine, the maximum dose is 2 mg/kg in dogs and 1 to 1.5 mg/kg in cats. A small-gauge needle should be used to inject a bleb of anesthetic after aspiration to ensure the needle is not in a vessel prior to injection. The typical total volume used in dogs weighing <11 lb (5 kg) and in cats is 0.5 mL. In dogs weighing >11 lb (5 kg), typical total volumes used are 1 to 3 mL for both dorsal and palmar blocks. The total dose should be divided between the injection sites; the anesthetic can be diluted with 0.9% saline if additional volume is needed.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1 Regional nerve blocks are useful in reducing the amount of sedation needed for a procedure. A ring block of the distal extremity is useful for any painful procedure involving the foot (eg, biopsy or clipping a painful claw). Pet owners may be more comfortable with a procedure when they know that local and regional anesthesia will be used to reduce the amount of sedation needed.
- 2 The desired time of onset (lidocaine, 10-15 minutes; bupivacaine, 20-30 minutes) and duration of activity (lidocaine, 1-3 hours; bupivacaine, 4-12 hours) should be considered when deciding which local anesthetic agents to use.
- 3 To avoid toxicity, it is important to calculate the maximum drug dose to ensure the total doses are below the high end of the range.