PARAVERTEBRAL NERVE BLOCK

**DISTAL:**

Developed by Magda and modified by Cakala. It uses a lateral approach to the nerves and is sometimes referred to as the distal paravertebral or paralumbar approach.

* The branches of T13, L1, and L2 are blocked close to the ends of the first, second, and fourth transverse processes.
* The skin is clipped and prepared at the ends of the first, second, and fourth lumbar transverse processes.
* An 18-gauge needle is inserted under each transverse process towards the midline, and 10 ml of solution is injected.
* The needle is then withdrawn a short distance and is redirected both cranially and caudally and additional local anesthetic solution is injected. In this fashion, a diffuse region ventral to the transverse process is infiltrated, to block the ventral branch of the nerve.
* The needle is then redirected slightly dorsal and caudal to the transverse process to block the dorsolateral branch of each nerve.

In adult cattle, up to 25 ml of local anesthetic solution has been administered at each site without adverse effect. As the paralumbar technique does not paralyze the lumbar muscles, lateral deviation of the spine does not occur. The technique for paravertebral nerve block is the same in sheep and goats as it is in cattle. Up to 5 ml of 1% or 2% lidocaine is recommended for each of the injection sites. While the total dose should not exceed 6 mg/kg, a lower dose (2 mg/kg) is usually recommended.

**PROXIMAL:**

As the nerve is most distinct at its intervertebral foramen, walking the needle off the transverse process closer to this site allows one to block the nerve before or close to the split into individual dorsal and ventral branches.

* As the transverse processes slope forward, the transverse process of L1 is used as a landmark to block T13, and the transverse processes of L2 and L3 are similarly used to locate nerves L1 and L2, respectively.
* When the transverse process has been located, a line is drawn from its cranial edge to the dorsal midline.
* The site for injection is 3 to 5 cm from the midline caudal to transverse processes of L1, L2 and L3. (The transverse process of L1 is difficult to locate in fat animals, in which case the site is estimated relative to the distance between the processes of L2 and L3).
* Following subcutaneous infiltration of local anesthetic, a 1-inch, 16-gauge needle is inserted to act as a guide in placing a 10-cm, 20-gauge needle perpendicular to the transverse process is encountered.
* The needle is then walked off the cranial border of the transverse process and advanced 0.75 cm (will generally feel penetration of the intertransverse ligament); and approximately 10 ml of local anesthetic solution (typically 2% lidocaine or mepivacaine) is administered below the ligament.
* An additional 5 ml is placed dorsal to the ligament.

If the drug has been administered correctly, desensitization will be effective within a few minutes. In testing the block, one must remember that the distribution of the nerves is such that T13 innervates the ventral flank area, whereas L2 innervates the more dorsal region closer to the transverse processes. A temporary lateral deviation of the spine due to muscle paralysis is observed in association with paravertebral analgesia. Vasodilation of surface vessels may also be observed.

