

Local anesthesia

Local anesthesia means loss of sensation and pain in relief in limited part of body

Structure activity of local anesthesia

Local anesthesia consists of lipophilic and hydrophilic portion.

The hydrophilic group is usually an ester such as: procaine, cocaine, tetra Caine

The lipophilic portion is usually an aromatic ring or a ring such as lidocaine, bupivacaine.

Properties of local anesthesia:

- 1- Induced rapid anesthesia for long time.
- 2- less toxicity
- 3- Few absorption at the site of operation.
- 4- without addiction
- 5- soluble in water
- 6- soluble in lipid

Method of local anesthesia:

- 1- Surface (topical) anesthesia.
- 2- Infiltration anesthesia.
- 3- Regional anesthesia.
- 4- Spinal anesthesia.
- 5- Intravenous anesthesia
- 6- Intra synovial anesthesia.

1- Surface (topical) anesthesia: use on mucous membrane such as eye, nose, mo, ointment, drops, solution)



2- Infiltration anesthesia: blocking the nerve ending at the site of operation. Such as intra dermal injection, sub dermal injection.

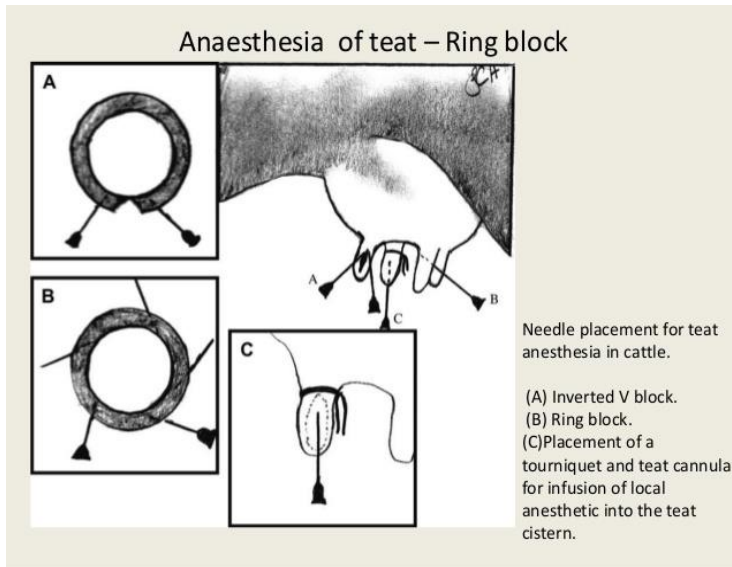
Infiltration anesthesia divided into:

A- Liner infiltration: inject the local anesthesia subcutaneous on line shape at site of operation or just parallel to line of incision

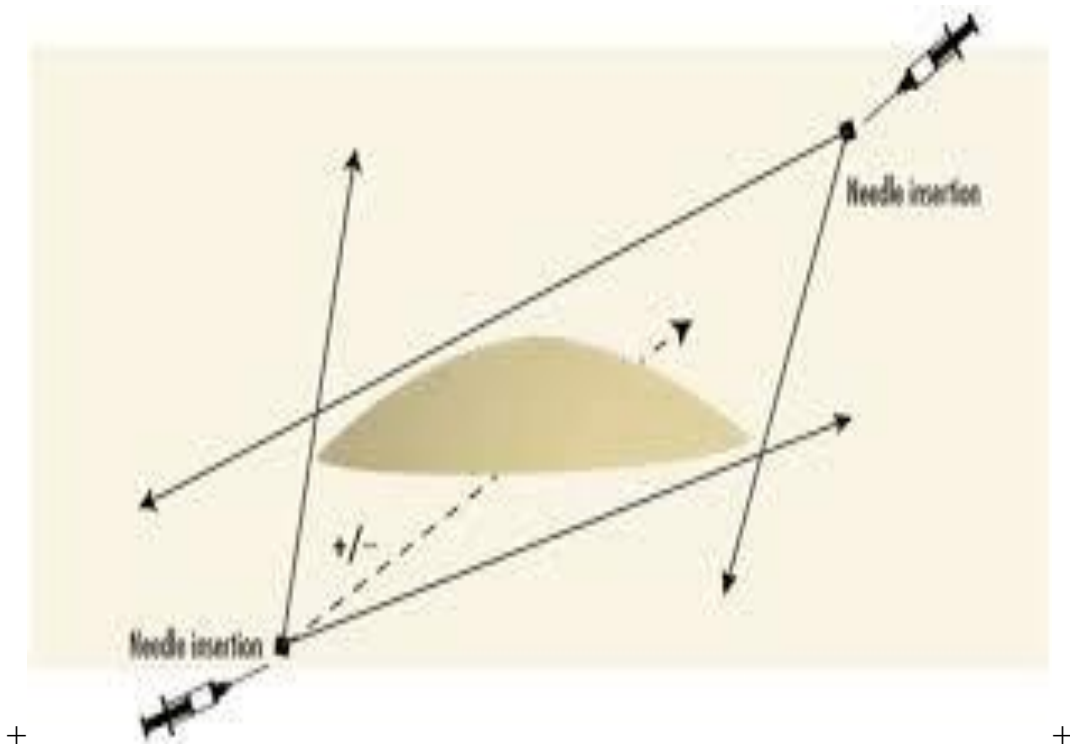
Dose of local anesthesia 1ml/cm³

These anesthesia use in rumentomy, cystomy, C.S

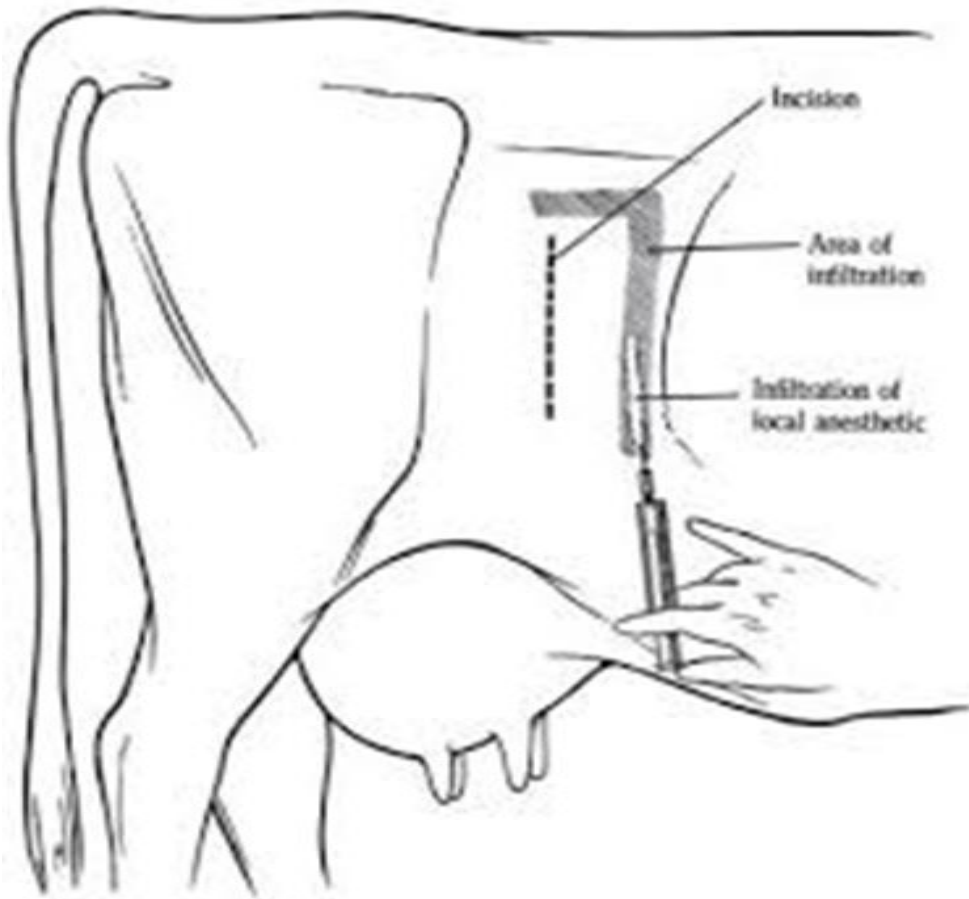
B - ring bloke: injection around cylindrical tissue like teat,digital.



C- filed bloke: : inject the local anesthesia in the shape of triangular or re shape angular shape to avoid presence of drug in site of operation.



D-inverted L shape : inject the local anesthesia in shape of inverted L to block the flank region (rumotomy).

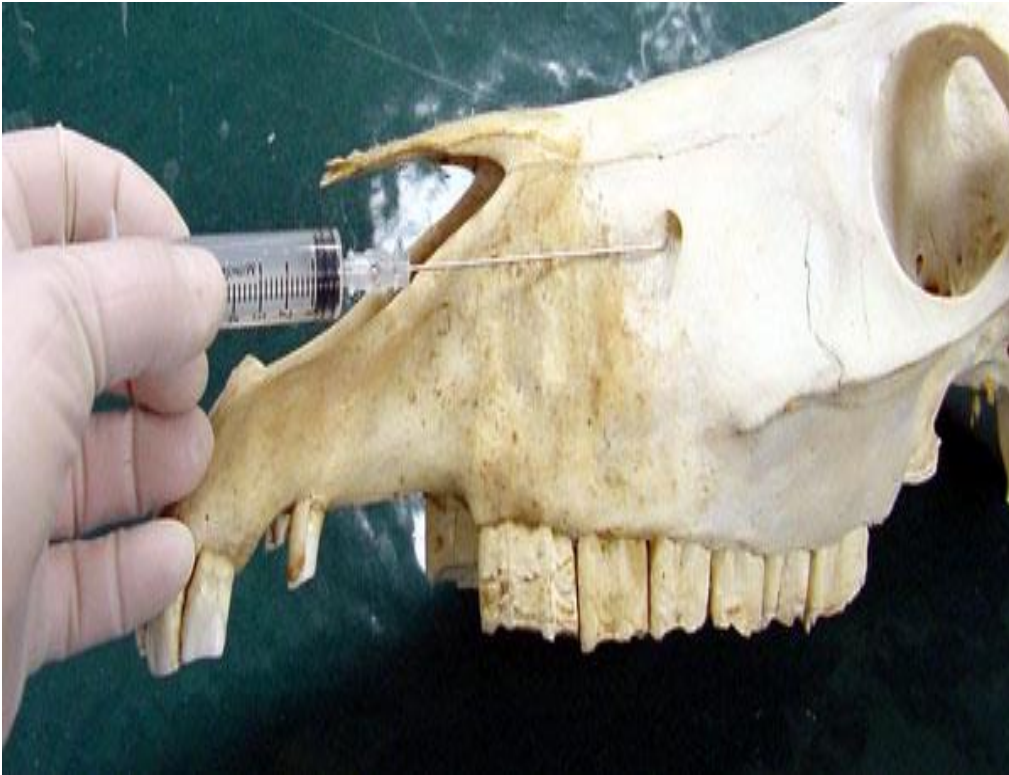


3-regional anesthesia: blocking of sensory nerve (perineural) innervation of the region

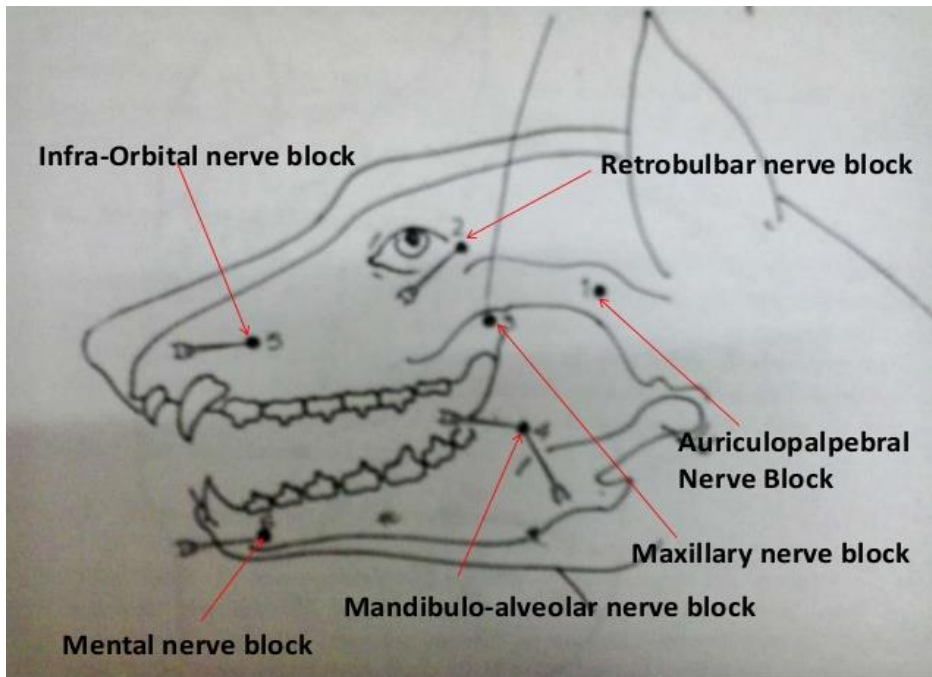
The Regional anesthesia is divided into:

A- Regional anesthesia about the head:

1-infra –orbital nerve block: for operation on nostrils and upper lip and upper teeth.

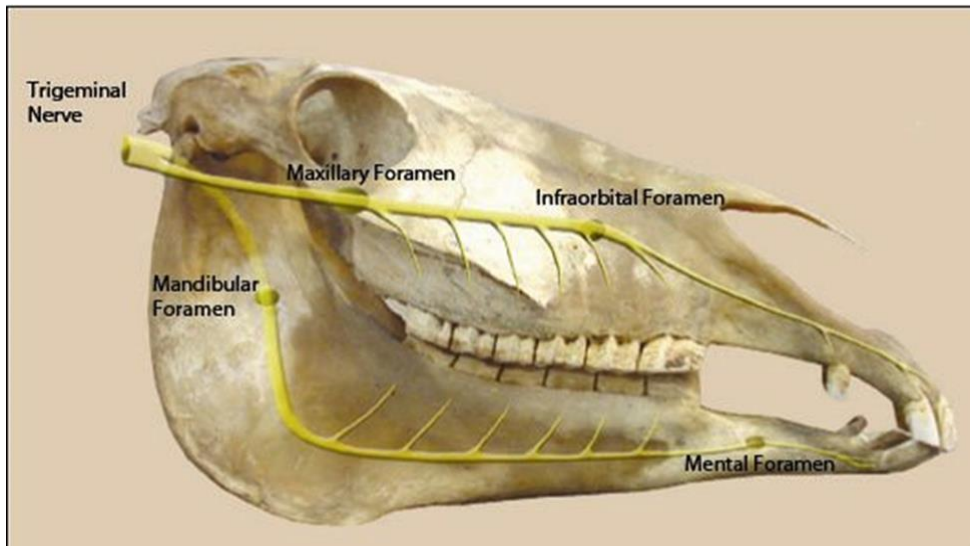


2- Supra –orbital nerve block : for operation on fore skin and upper lid.



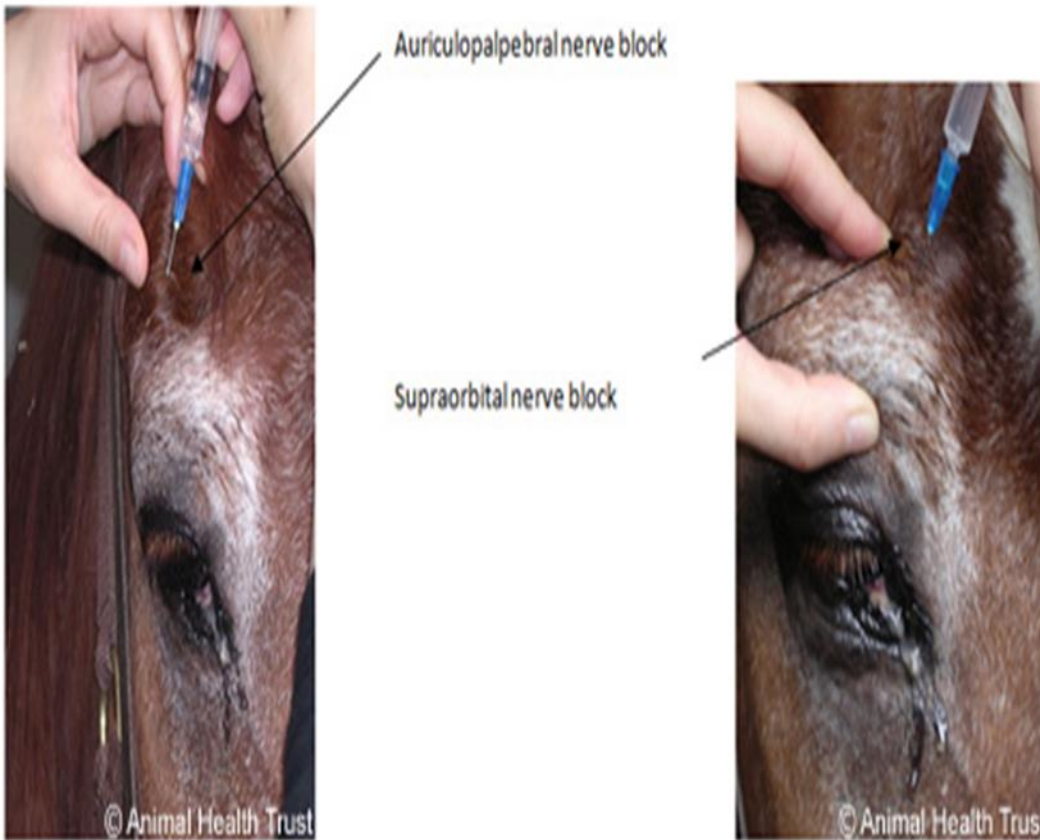
3- Mandibular nerve block: for operation on lower teeth.

4- Mental nerve block : for operation on lower lip and chin .



5-auriculopalpebral nerve block : for examination of eye and eye and all operation on eye .

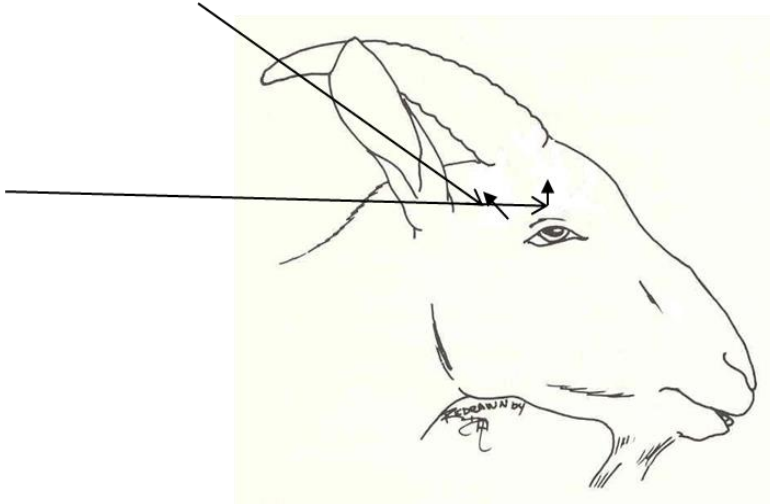
6-retrobulbar nerve block : for e nucleation of eye ball .



7-cornual nerve block :for dehoring in cattle , while in goat (corneal nerve divided into corneal from lacrimal nerve , corneal from infratrochlear nerve)



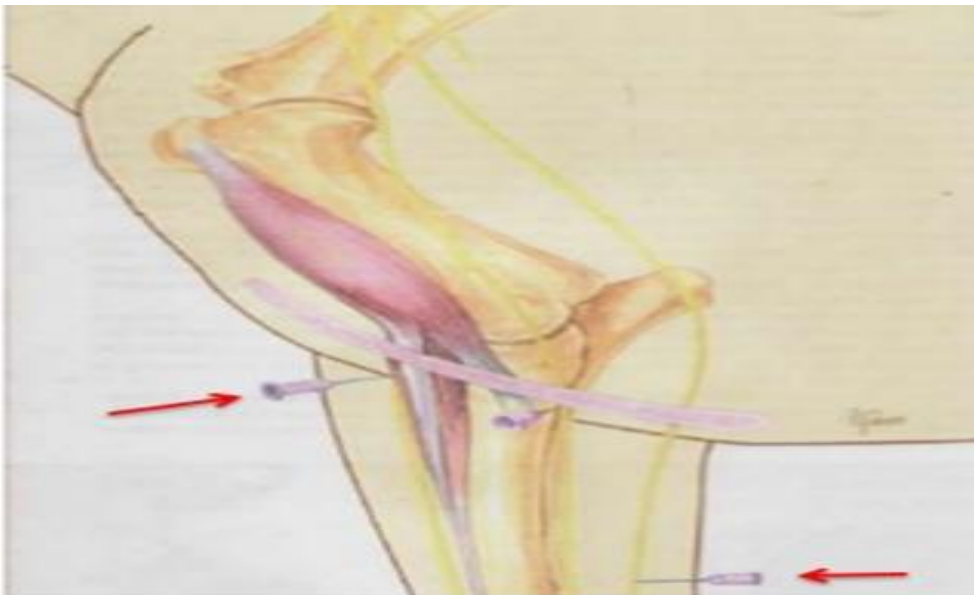
Corneal nerve block in cattie

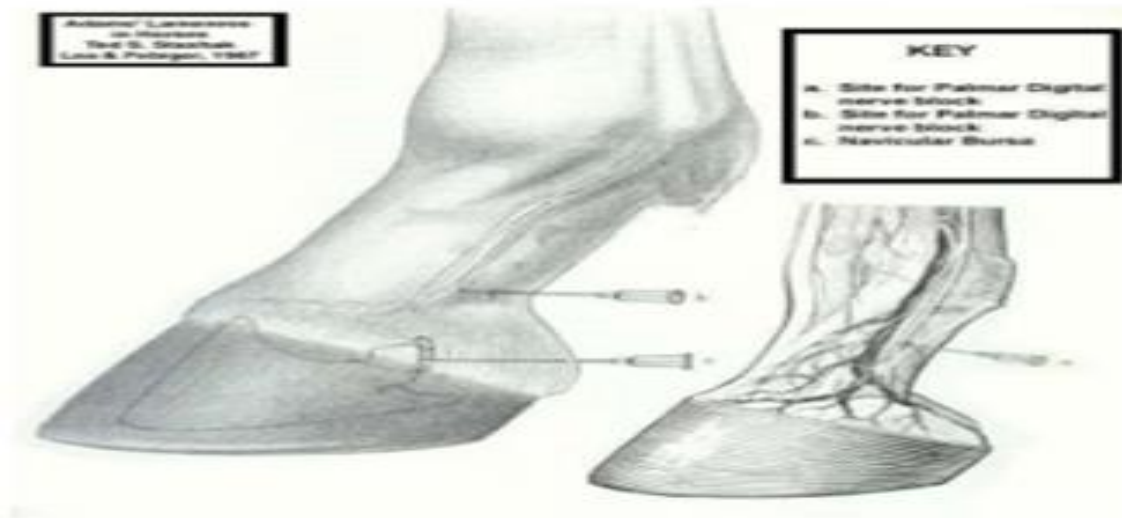


Corneal nerve block in goat

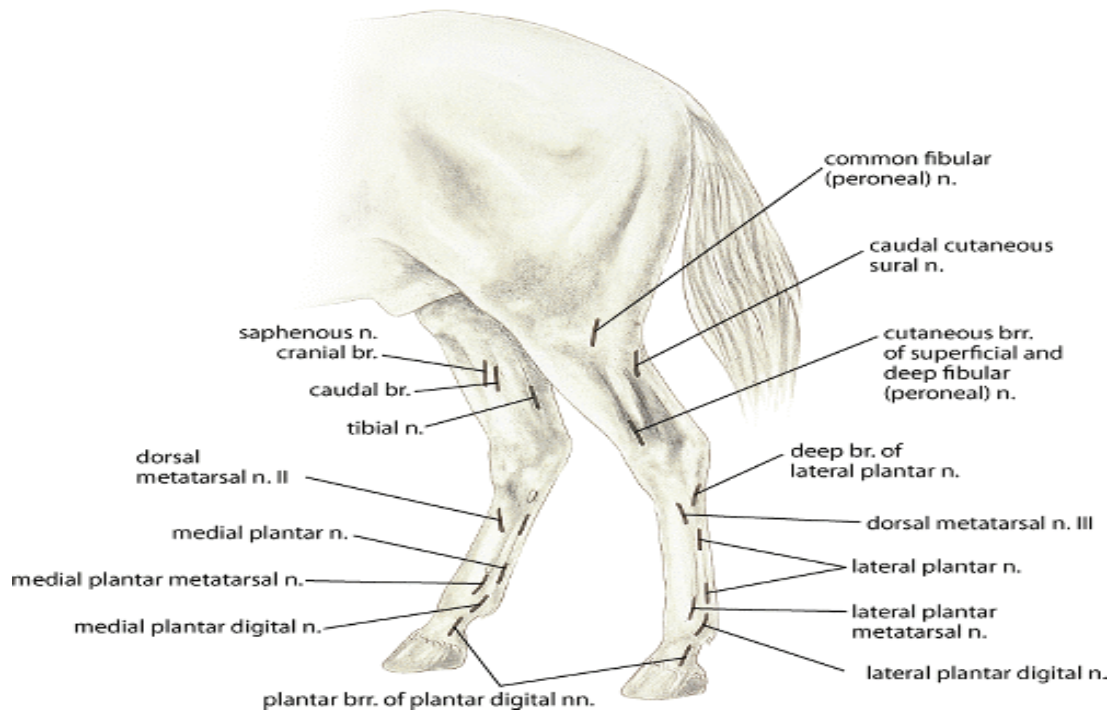
B - regional anesthesia about the limb :

1-anesthesia in fore limb : like median nerver block ,ulnar nerve block , high volar (palmar) ,low volar (palmar)





2- Anesthesia in hind limb : like tibial nerve block , high planter nerve block , low planter nerve block .



C - Regional anesthesia about the trunk : (paravertebral nerve block) injection local anesthesia (peri neural) about the spinal nerves which it emerge from vertebral canal (th 13 ,L1 ,L2 ,L3)

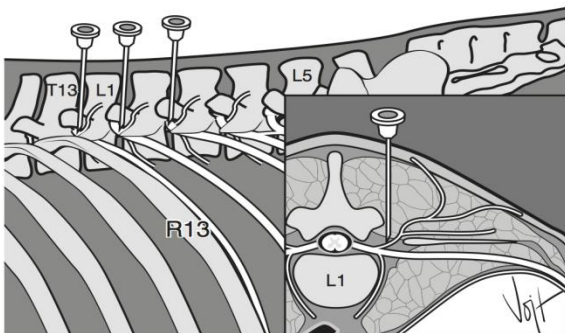


Figure 6-1 Proximal paravertebral nerve block. Note that the needles are placed just cranial to the transverse processes and less than 2.5 cm from midline.

(From Muir WW, Hubbell JAE, Skarda RT, Bednarski R: *Handbook of veterinary anesthesia*, ed 3, St Louis, 2000, Mosby.)

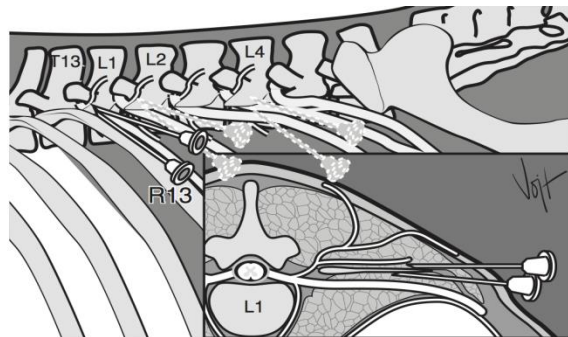
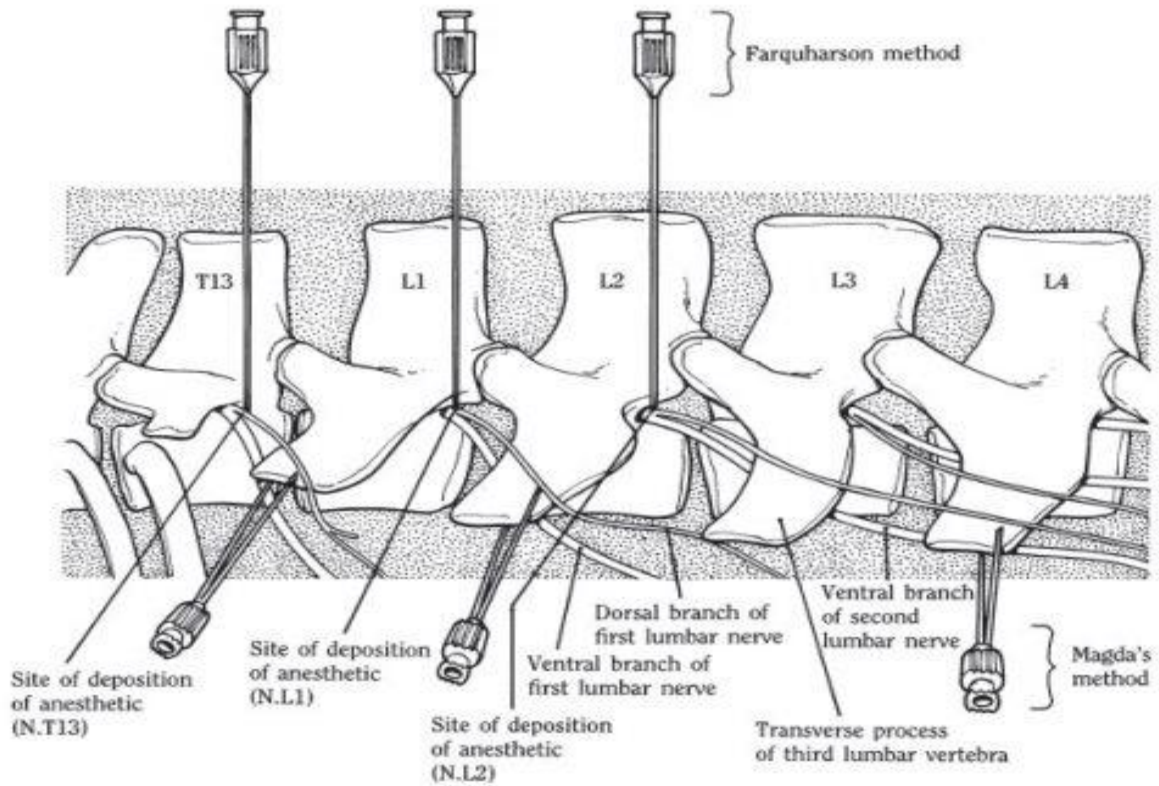


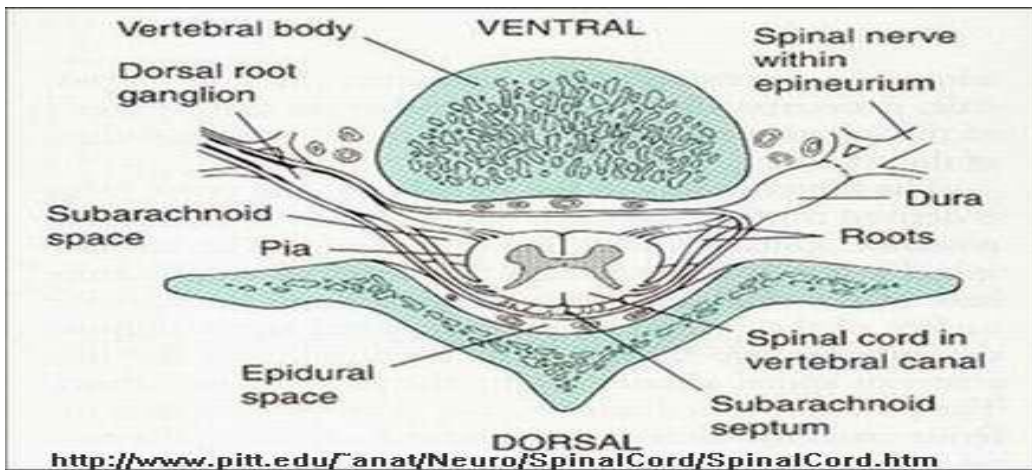
Figure 6-2 Distal paravertebral nerve block. Note that the needles are placed just above and below each transverse process, and lidocaine is infiltrated in a fan pattern.

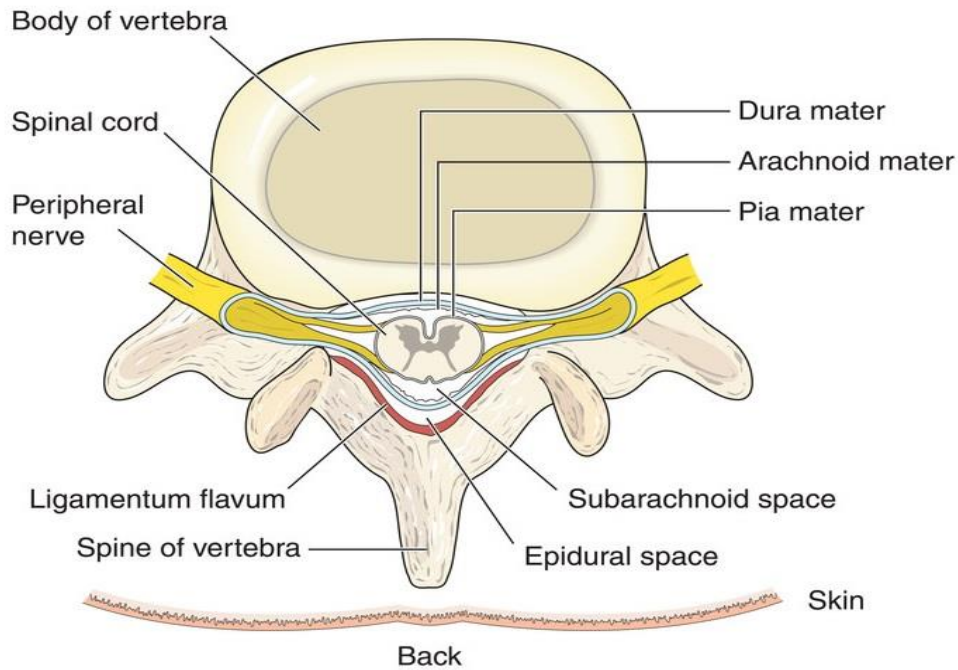
(From Muir WW, Hubbell JAE, Skarda RT, Bednarski R: *Handbook of veterinary anesthesia*, ed 3, St Louis, 2000, Mosby.)



5- Spinal anesthesia :injection of local anesthesia drug into some part of spinal canal to make loss of sensation and divide into :

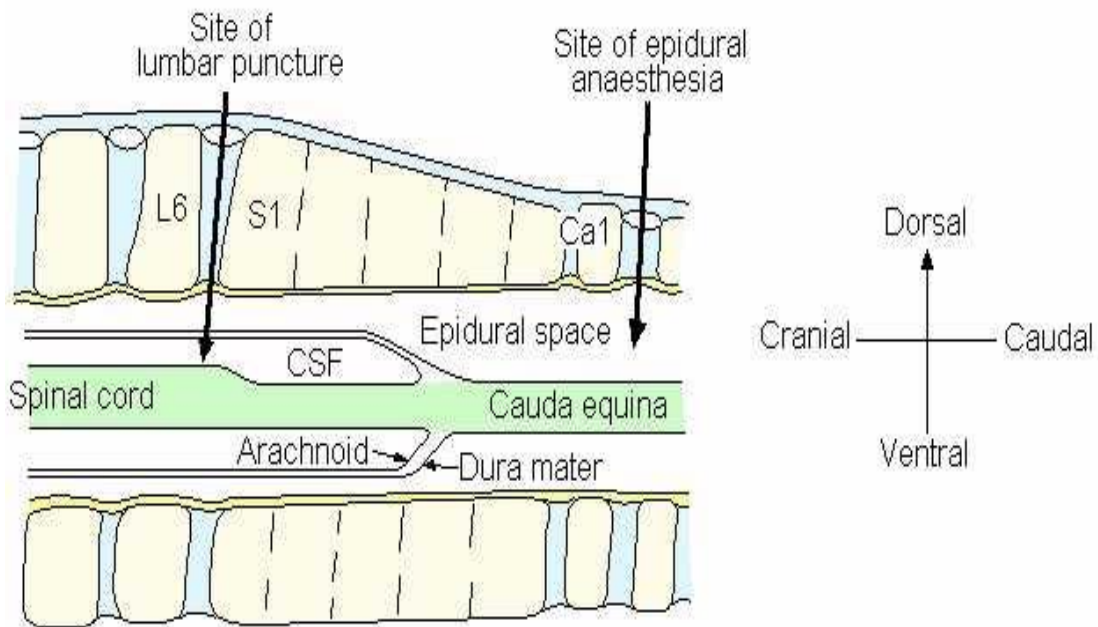
a- Subarachnoid injection (use in humen) .



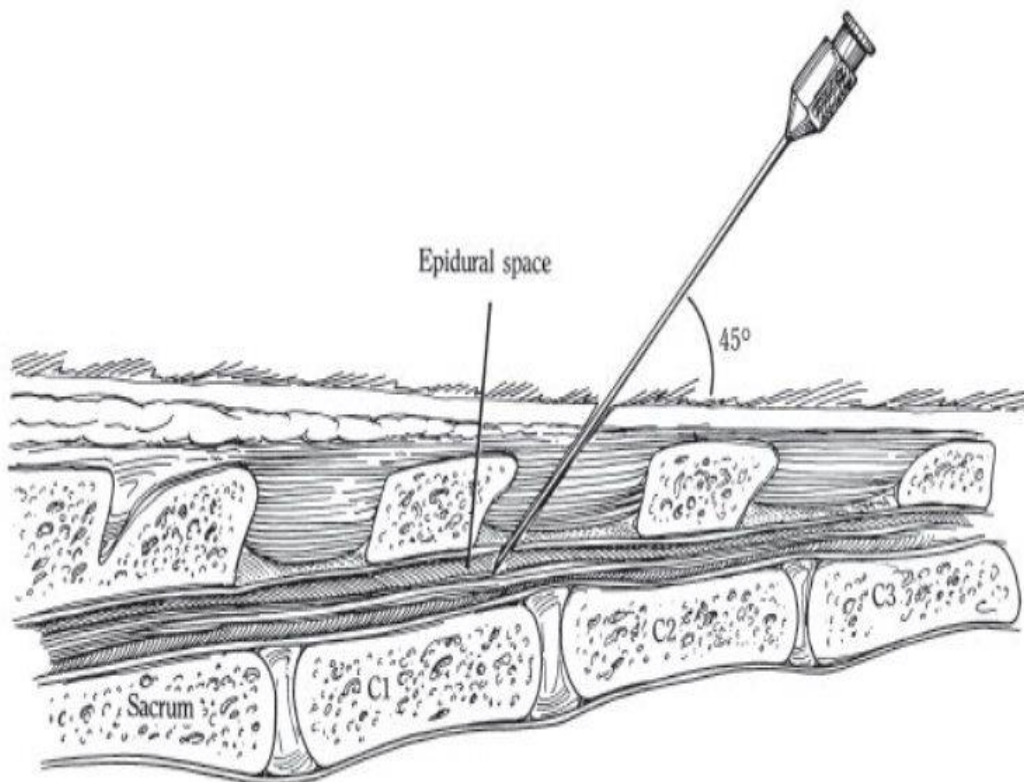
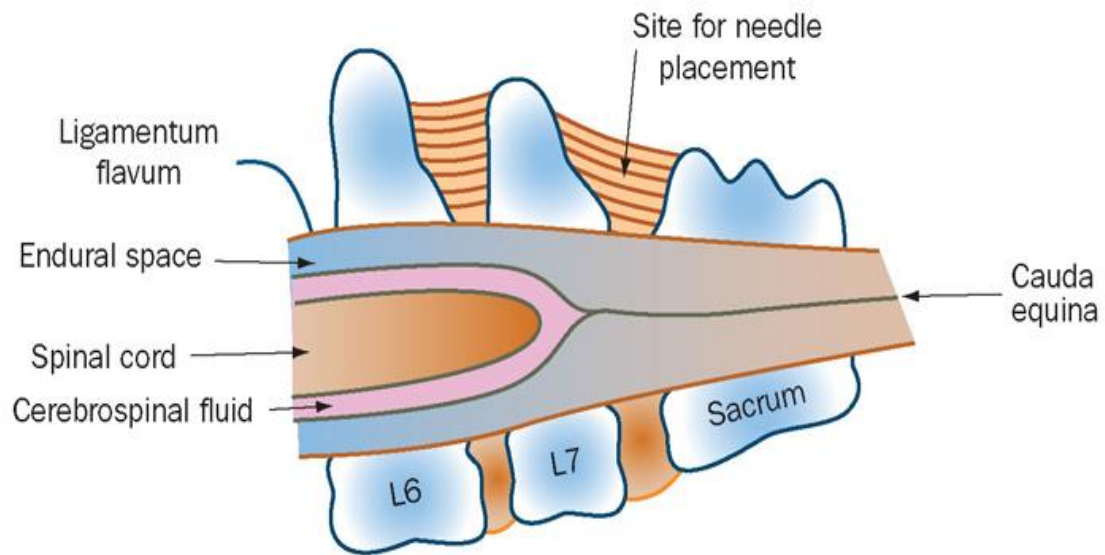


b- Epidural injection :divide into:

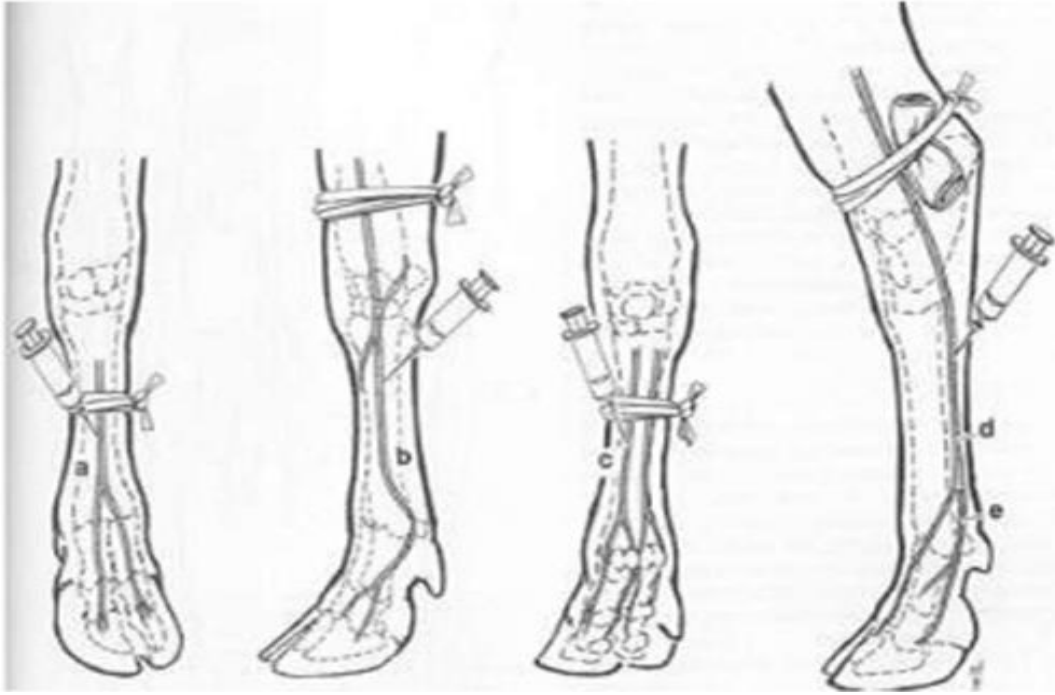
- 1- Cranial (high) epidural anesthesia (injection between last lumbar and first sacral vertebral) (Lumbosacral) .
- 2- Caudal (Low) epidural anesthesia (injection between first coccygeal and



second coccygeal vertebral) .



5 - Intra venous regional anesthesia : (like in limb) make tourniquet on limb before injection local anesthesia solution .



6- Intra- articular anesthesia (intra synovial) : used in these joints (fore limb joint and hind limb joint) .

