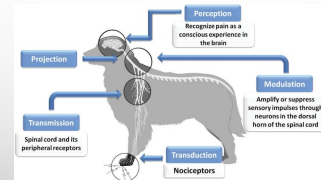


ORAL BLOCKS MADE EASY

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1

PAIN PATHWAY



2

SYSTEMIC VS LOCOREGIONAL

- SUPERIOR INTRAOPERATIVE ANESTHETIC STABILITY
- BETTER POSTOPERATIVE PAIN SCORES
- LOWER REQUIREMENT FOR POSTOPERATIVE OPIOIDS
- GREATER FOOD INTAKE
- POTENTIALLY CHEAPER IN LARGER DOGS

Veterinary Anaesthesia and Analgesia 2020; 47: 111–126

<https://doi.org/10.1016/j.vaa.2019.08.004>

RESEARCH PAPER

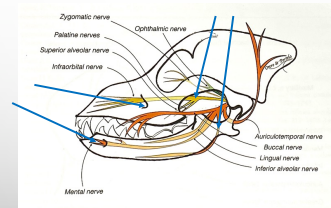
Peripheral nerve block versus systemic analgesia in dogs undergoing tibial plateau levelling osteotomy: Analgesic efficacy and pharmacoeconomics comparison

Nunzio Polombo, Enzo Vetrone, Chiara De Gennaro & Federico Carletto
D&V White Referrals, Station Farm, London Road, St. Albans, Hertfordshire, UK

Correspondence: Enzo Vetrone, D&V White Referrals, Station Farm, London Road, St. Albans, Hertfordshire, UK. Email: evetrone@dvwhite.co.uk

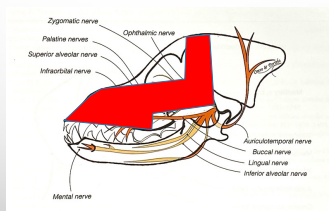
3

ANATOMY FOR DENTAL BLOCKS



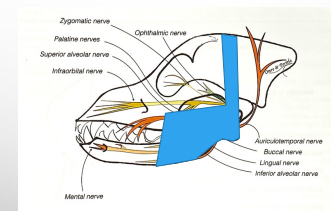
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DERMATOME - MAXILLARY



5

DERMATOME - MANDIBULAR



6

DERMATOME - INFERIOR ALVEOLAR

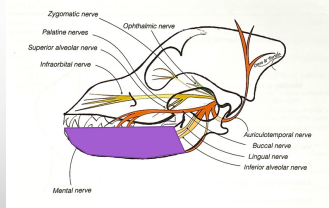


Image credit: Otero & Portales 2019

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DERMATOMES

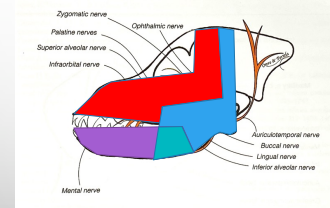


Image credit: Otero & Portales 2019

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MAXILLARY NERVE BLOCK

- FOR PROCEDURES INVOLVING:
 - MAXILLA (BONE AND SOFT TISSUE)
 - HARD /SOFT PALATE
 - UPPER DENTAL ARCH
 - UPPER LIP
 - NOSTRILS

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MAXILLARY NERVE BLOCK INTRAORAL APPROACH

- INSERT THE NEEDLE PERPENDICULAR TO THE LAST MOLAR



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MAXILLARY NERVE BLOCK
INTRAORAL APPROACH

POTENTIAL COMPLICATIONS:

- EASY TO INJECT INTRAVASCULARLY
- RETROBULBAR HEMATOMA
- NERVE INJURY
- LOCAL ANESTHETIC TOXICITY
- ALLERGIC REACTIONS

References: Otero et al., 2019



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A LITTLE TIP..



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MAXILLARY NERVE BLOCK - INFRAORBITAL APPROACH

- ABOVE 3RD PREMOLAR (107/207)
- SLIDE YOUR FINGER ROSTRO-CAUDALLY
- IDENTIFY THE LITTLE DEPRESSION OF THE INFRAORBITAL FORAMEN
- USE A NEEDLE OR A CATHETER FOR THE INJECTION
- SOME PRESSURE ON THE CANAL WHILE INJECTING MAY HELP CAUDAL SPREAD



Reference: Ochoa et al., 2019

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INFRAORBITAL VS MAXILLARY

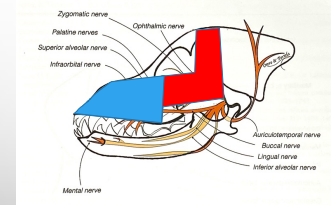


Image credit: Ochoa & Peralta 2019

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MAXILLARY NERVE BLOCK – INFRAORBITAL APPROACH



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MAXILLARY NERVE BLOCK – INFRAORBITAL APPROACH



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MAXILLARY NERVE BLOCK – INFRAORBITAL APPROACH



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INFERIOR ALVEOLAR NERVE BLOCK

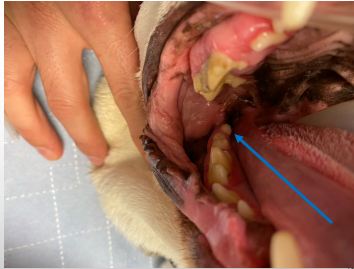
- FOR PROCEDURES INVOLVING:
 - MANDIBLE BODY CRANIAL TO THE FORAMEN
 - LOWER DENTAL ARCH
 - LOWER LIP

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INFERIOR ALVEOLAR NERVE BLOCK

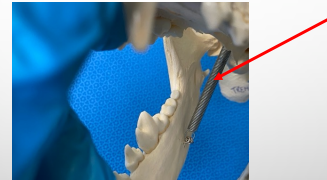
1. FEEL WITH YOUR FINGER THE MANDIBULAR ARCH
2. SLIDE YOUR FINGER DORSO-VENTRALLY
3. FEEL THE NEUROVASCULAR BUNDLE
4. INSERT THE NEEDLE BESIDE IT



Reference: Otero et al., 2019

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INFERIOR ALVEOLAR NERVE BLOCK

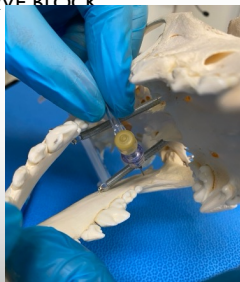


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INFERIOR ALVEOLAR NERVE BLOCK

POTENTIAL COMPLICATIONS:

- TONGUE SELF MUTILATION
- LOWER LIP TRAUMA
- NERVE INJURY
- LOCAL ANESTHETIC TOXICITY
- ALLERGIC REACTIONS



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TONGUE SELF MUTILATION

- Usually occurs when dog is dysphoric
- Hold patient's mouth closed
- Sedate or re-induce anesthesia
- Closely examine the tongue and treat appropriately
- Recover slowly with sedation

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MENTAL NERVE BLOCK

- For procedures involving:
 - Mandible body cranial to the foramen
 - Dental arch cranial to the foramen

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MENTAL NERVE BLOCK

1. LOCATED VENTRAL TO THE 2ND PREMOLAR
2. SLIDE YOUR FINGER ROSTRO-CAUDALLY
3. FEEL THE NEUROVASCULAR BUNDLE
4. INSERT THE NEEDLE BESIDE IT



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MENTAL NERVE BLOCK

POTENTIAL COMPLICATIONS:

- LOWER LIP TRAUMA
- NERVE INJURY
- LOCAL ANESTHETIC TOXICITY
- ALLERGIC REACTIONS



25

NEEDLE SELECTION

- 22/20 GAUGE HYPODERMIC NEEDLE
- USE A T-PORT TO FACILITATE POSITIONING
- 22/24 GAUGE IV CATHETER (FOR INFRAORBITAL)



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DRUG SELECTION

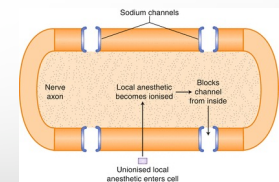
Drug name	Maximum dose	Onset (min)	Duration (h)
Lidocaine	4mg/kg	2-3	1-2
Bupivacaine	2mg/kg	6-10	3-6
Ropivacaine	3mg/kg	6-10	2-4
Bupivacaine + Dexmedetomidine	2mg/kg 0.001mg/mL	10	Up to 24h
Bupivacaine + Epinephrine	2mg/kg 0.005mg/mL	10	Up to 12h

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DRUG SELECTION

- Local anesthetics are weak bases
- Unionized form can enter the axon
- No benefit in mixing local anesthetics



Lidocaine (pKa 7.8) + bupivacaine (pKa 8.1)

- **NOT quicker**
- **SHORTER duration**

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VOLUME SELECTION

- Dogs
 - 0.5 mL of 0.5% ropivacaine/bupivacaine if below 10Kg
 - 1mL 0.5% ropivacaine/bupivacaine if above 10Kg
- Cats
 - 0.5mL of 0.5% ropivacaine/bupivacaine

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