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Indications

- Extractions
- Cancer
- Facial trauma
- Endodontics
- Temporomandibular joint disorders
- Tenismus

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Diagnostics

Pending patient status

- Bloodwork
- CT (cone beam vs helical) vs. dental rads vs. skull rads
- Thoracic rads
- ECG
 - Endocarditis or cardiomyopathy
- +/- Clotting profile
- +/- 2M antibody titre test/muscle biopsy

<https://todaysveterinarypractice.com/dentistry/cone-beam-computed-tomography-in-veterinary-dentistry/>

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Pain Management

- Surgical pain
- Acute vs. chronic pain
- Hyperalgesia
- Cancer pain
- Pain scoring
- Preemptive analgesia
- Systemic vs. local analgesia



<https://www.veterinarydentalcenters.com/oral-conditions/tooth-fracture/jaw-fracture/>



<https://fbah.com/feline/dental-disease/>

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Systemic Analgesics

- Opioids
- Analgesic CRIs
- Alpha-2s
- Ketamine
- NSAIDs
- Buprenorphine
- Transdermal?



0 - All to absent	1 - All to moderately present	2 - All to markedly present
Ears being forward	Ears slightly pulled apart	Ears flattened and rotated outward
Eyes narrowed	Eyes partially opened	Squinted eyes
Muzzle relaxed (round shape)	Muzzle really tense	Muzzle tense (rigid shape)
Whiskers loose and curved	Whiskers slightly curved or straight	Whiskers straight and moving forward
Head above the shoulder line	Head aligned with the shoulder line	Head below the shoulder line or tilted down (like towards the death)

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Local Anesthetics

- Infraorbital
- Maxillary
- Mental
- Mandibular
- Palatine
 - Dorsal recumbency, mouth opened
 - Needle advanced through palatal mucosa midway between midpalatal suture and dental arcade
 - Slightly rostral to the mesial roots of the maxillary 4th premolar
 - Needle is angled 30–45°, advanced caudally
 - Aspirate and inject slowly

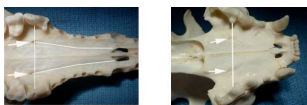


Figure 4: Dog skull, showing the two palatine foramina (arrows), the transverse line they are located on, and the course of the nerves cranial to the foramina.



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Local Blocks

- Duration of procedure
 - Adjuncts to extend block duration
 - Re-block post-op
- Bacterial load
 - Bacteremia
- Effects of chronic inflammation
 - Lower local tissue pH
 - Diminished effects of LA



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Local Block Adjuncts

- Epinephrine
 - Tachycardia/hypertension risk
- Dexmedetomidine
 - 1mcg/ml
- Buprenorphine
 - 0.01-0.2mg/kg



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Additional Considerations

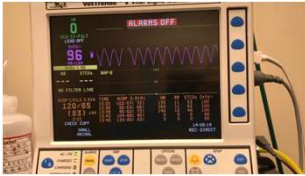
- Airway management
- Duration of procedure
- Trauma patients
- Hemorrhage and secretions
- Electrocautery
- Oronasal fistulas or debris
- Patient positioning
- Mouth gags
- Pharyngeal Stimulation
- Recovery



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Airway Management

- Expect the unexpected
- Preoxygenate!



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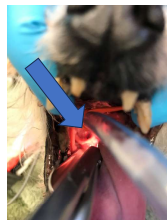
Airway Management



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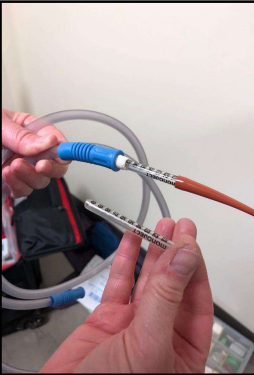
The Difficult Airway

- Guided Intubation
- Endoscopic Guidance
- Lateral Pharyngostomy
- Tracheostomy



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Creating an Alternative Oxygenation Method

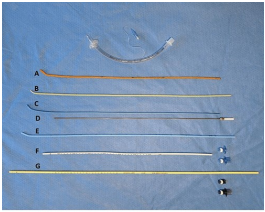


- Materials needed:
- Red rubber catheter
- 1cc syringe
- Suction tubing
- Flow meter
- Oxygen (obviously)

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Guided Intubation

- Insert tip of guide tube through cricoid cartilage
- ETT can be passed once situated half the distance from the cricoid cartilage to the thoracic inlet
- Remove guide tube




Source: Orlando B. Hung, Michael F. Murphy: Hung's Difficult and Failed Airway Management, 3rd edition
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Endoscopic Guidance

- Helpful when larynx cannot be visualized with laryngoscope
- Abnormal oropharyngeal, laryngeal, and/or nasal anatomy
- Scope can be placed inside the tube, alongside the tube, or through the nasal passage
- View the ET tube entering the glottis



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Lateral Pharyngotomy (Pharyngostomy Tube)

- Diverts the circuit end of the endotracheal tube to the lateral aspect of the head

Uses:

- Oropharyngeal surgery
- Orthopedic procedures involving the mandible or maxilla



<https://msexvet.com/blog/educational-content/patient-positioning-for-mandibular-fracture-repair>

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Lateral Pharyngotomy

Advantages

- Minimal supplies and expense
- Maintains normal dental occlusion
- Improves access and visualization within the operative field during oropharyngeal surgery
- Minimizes interference with anesthesia equipment

Disadvantages

- Invasive
- Experience needed for placement



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Lateral Pharyngotomy

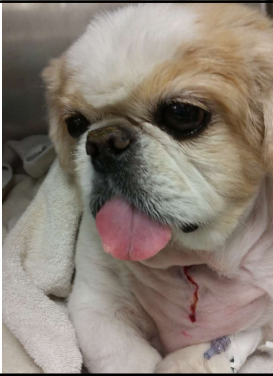
- Skin incision over hemostats
- Push hemostats through
- Clamp patient end of ET tube
- Pull ET tube out of mouth
- Reverse tube into trachea



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Tracheostomy

- Invasive with significant risks
 - Only used in patients where there is no other option
- Bypasses the upper airway completely
- Severe obstruction or inability to open mouth
- Can be pre, intra, or post operative as needed
- TIVA needed for placement, but inhalant can be used once placed



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Tracheostomy Potential Complications



- Increased mucous production and possible obstruction
- Infection
- Seromas
- Tracheal stricture
- Cartilage damage
- Hemorrhage or hematoma
- Pneumothorax
- SQ emphysema
- Aspiration
- Dysphagia
- Tracheal malacia
- Tracheocutaneous or tracheoesophageal fistula

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Duration of Procedure

- Hypothermia
- Hypotension
- Patient positioning
 - Extended lateral recumbencies
 - Atelectasis
- MAC reduction
 - TIVA vs. PIVA vs. Inhalant
- Prolonged recoveries



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Trauma Patient Considerations

- Brain trauma
 - Anisocoria
 - Pupillary light reflex
 - Increased intracranial pressure
 - ETCO2 considerations
 - Cushing's Triad
- Lingual function
- Intractable hemorrhage
- Endotracheal tube and occlusion evaluation



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Hemorrhage and Secretions

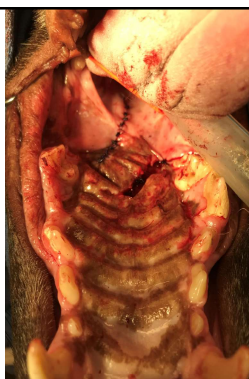
- Pre-op hemorrhage
 - Clotting profile?
 - Baseline PCV + intra-op
 - Address hypovolemia preop
- Intra-op hemorrhage
 - Leak test ETT cuff super important!
 - Gauze
 - Suction
 - "Squeegee" at extubation
- Secretions
 - The atropine question
 - Intubation tools



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Oronasal Fistula or Debris

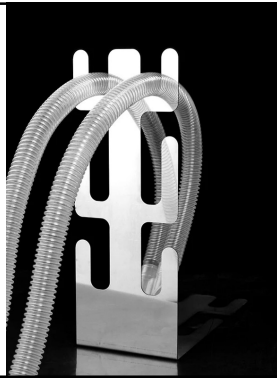
- Pre-op
 - Rhinitis
 - Predisposition for aspiration pneumonia
 - Chest rads
- Post-op
 - Suction debris if possible
 - Risk of dyspnea
 - Pulse ox
 - Monitor closely



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Patient Positioning

- Visualization of surgical site
- Extended lateral
 - Atelectasis
 - PEEP
- Circuit tubes and ETT
 - Disconnect when repositioning
 - Circuit holders for head extended procedures
 - Prevents pulling of excess pressure on ETT



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Mouth Gags

- Careful with cats/small dogs
 - Spring loaded can cause cerebral ischemia and blindness
 - Extended pressure on maxillary artery ↓ blood flow
- Smart mouth gags
- Cut syringes



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Pharyngeal Stimulation

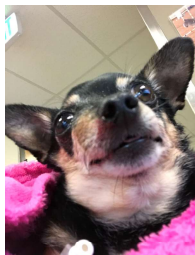
- Need deeper plane of anesthesia to suppress gag reflex
- Neuromuscular blockade?
 - IPPV/mechanical vent
- Topical local anesthetic



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Recovery: Soft Tissue Swelling

- Monitor closely for dyspnea
- Cold pack if possible
- NSAIDS
- Soft tissue vs. hematoma vs. abscess evaluation



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Recovery: Nutrition

- Patient may be coming in malnourished due to dental pain or disease
- Ability to open mouth may be compromised
- Post-op discomfort
- Ability to take oral meds?
- E-tube placement?



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Recovery: Analgesia

- Re-administer locals prior to recovery
 - Toxicity?
 - Adjuncts
 - Nocita?
- Full mu opioids vs. partial
- OTM vs. oral vs. transdermal vs. injectable
- Regular pain assessment



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Questions?

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