Overview:
Dental procedures typically involve instillation of water in and around the mouth (i.e., near the airway), multiple position changes, and may be lengthy procedures. These procedure-related factors are often combined with patient factors such as underlying disease and diminished organ reserve associated with aging. So, regardless of age or concurrent disease, patients are at increased risk of aspiration, tracheal/pharyngeal trauma, hypothermia, low blood pressure and impaired respiratory function. Another anesthesia-related consideration is the fact that inflammation and pain associated with dental disease is often exacerbated immediately following cleaning procedures and tooth extractions.

Minimize the risk of anesthetic complications and maximize patient comfort:

- Premedicate animals with an opioid +/- a tranquilizer to provide analgesia, reduce anesthetic requirements and decrease patient stress (ex: hydromorphone +/- acepromazine).
- Oxygen supplementation prior to induction is important to prevent hypoxemia.
- Induce anesthesia with an intravenous agent. DO NOT perform mask inductions because they are dangerous for pets and staff members, and are extremely stressful for patients.
- Place an endotracheal tube with the aid of a laryngoscope in every patient and verify the seal repeatedly to protect the airway from potential aspiration.
- Use caution when intubating the trachea, inflating the endotracheal tube cuff and when moving the patient to avoid trauma to pharynx and trachea.
- Thermal support with an active warming device will help prevent heat loss and minimize hypothermia.
- Provide patient support with IV fluids to facilitate clearance of drugs and treatment of hypotension.
- Monitor temperature, blood pressure, anesthetic depth, end-tidal CO₂ and pulse oximetry to help prevent, recognize and facilitate treatment of common complications associated with anesthesia for dental procedures: hypothermia, hypotension, hypoventilation and hypoxemia.
- Perform local anesthetic nerve blocks whenever possible to achieve site-specific analgesia during dental procedures.
- Administer anti-inflammatory and opioid analgesics to provide pain relief.
- Consider using balanced anesthetic techniques (analgesic CRI plus inhalant) to minimize cardiovascular depression.
- Perform an oral exam at the end of the procedure while the patient is still anesthetized to verify that the pharyngeal region is free of blood and debris.
Recommended resources


- This is the *one* anesthesia reference book that I think every small animal practice should own. *Veterinary Anesthesia Update* is written by Nancy Brock, a veterinary anesthesiologist who has worked in private practice for over 20 years, so it is organized for quick review of critical topics. Includes info on equipment, anesthesia protocols for healthy and sick patients, treatment of complications, and pain management.
- Available through http://nancybrockvetservices.com/Products.html or AAHA Press or VIN.


- This spiral bound book has excellent drawings of local anesthetic blocks. The pages are waterproof, so the book holds up well on your treatment table.

Trinity Trach Tube Ties

- Fluorescent ties that secure even a wet endotracheal tube. Reusable. Order on-line at www.trachhtubeties.com

Endotracheal tubes

- Clear, PVC tubes with Murphy eyes for sizes 2.5 thru 10. Source: AirCare Tubes by Smiths-Medical. Available through veterinary distributors.
- Silicone tubes with Murphy eyes for sizes 11, 12, and 14. Source: Surgivet or Jorvet. Available through veterinary distributors.

Non-rebreathing circuit adapter with manometer

- Bain circuit adapter, also known as Universal Control Arm. Order the adapter that comes with a Safety Pop-Off Valve. Source: Supera Anesthesia (formerly LEI Medical).

Safety pop-off valve

- Safety Pop-Off Valve by LEI Medical, Inc.: Compatible with nearly all anesthesia machines. Prevents inadvertent over-pressurization of patients. Source: Supera Anesthesia (formerly LEI Medical).
  http://www.superavet.com/accessories.html  ph: 1-503-723-5068 or 877-620-1500 (toll-free in USA)
- Occlusion Valve with Safety Relief: Safety pop-off valve for Matrix (Midmark) anesthesia machines.
  Ph: 877-503-3756  Available through veterinary distributors.

How to safely inflate the endotracheal tube cuff:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>First, inflate the endotracheal tube cuff fully to check for leaks prior to every use</td>
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<tr>
<td>2.</td>
<td>Make sure cuff and tube are clean (no blue residue! – disinfectants are caustic to airway)</td>
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<tr>
<td>3.</td>
<td>Double check end of endotracheal tube for thin films of dried mucous that can obstruct airflow</td>
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<tr>
<td>4.</td>
<td>Make sure the light on the laryngoscope blade works</td>
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<tr>
<td>5.</td>
<td>Once the endotracheal tube is in place, inflate the cuff gradually with small volumes</td>
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<tr>
<td>6.</td>
<td>Deliver a manual breath and attempt to hold the inflation pressure at 20 cmH2O</td>
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<tr>
<td>7.</td>
<td>You want to hear a slight leak at 20 cmH2O, but not below that pressure</td>
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<tr>
<td>8.</td>
<td>This will help ensure that the cuff is not over-inflated</td>
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<tr>
<td>9.</td>
<td>Check the seal of the cuff repeatedly because anesthetic agents cause muscle relaxation and the tracheal diameter gets larger as the trachealis muscle relaxes</td>
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