

The Veterinary Surgeon's Guide to Successful Anesthesia

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AIMS OF LECTURE

The “art of anesthesia” involves many factors that are not only based on medical or pharmacologic knowledge, but also the mental knowledge of how to appropriately approach an anesthetic case. Successful anesthesia for any patient involves approaching anesthesia with the appropriate mindset, prioritizing prevention over treatment, being intentional with treatment choices, and utilizing all those aspects to finally then create the best anesthetic drug protocol - *not the other way around*.

MINDSET

All drugs – *especially anesthetic* – should not be thought of as “just a means to an end” goal, but more so as an important part of the overall treatment plan (i.e. an important factor in “the journey to the final destination”). By approaching anesthesia with this mindset, your patients & your team will experience smoother and more successful anesthesia experiences. The best mindset when approaching anesthesia involves considering the anesthesia components as an important part of the patient’s journey through their care experience, ensuring to plan ahead for the worst outcomes which allows a team to then avoid those possibilities, and to aim for better results with each anesthetic event by learning and making improvements each anesthetic experience. Just as you learn how to be better after an incision dehisces, we should also be applying the same efforts of improvement with our anesthetic events.

PREVENTION OVER TREATMENT

Actively considering & making choices that avoid negative anesthetic outcomes will always lead to more successful anesthetic experiences for not only your patient, but your team as well. For example, if you anticipate this aggressive dog may require a lot of injectable sedatives to sedate properly for pre-operative radiographs, why not prevent that need for more injectable sedatives by considering addition of oral sedatives? Planning ahead for any negative anesthetic outcome will allow your patient’s anesthetic experience to occur smoothly, as well as each team member’s role to also be performed smoothly. Aspects that help teams consider how to prevent negative anesthetic outcomes include:

- ASA Status – *assessing ASA & understanding how this impacts anesthetic drug selection*
- Identifying specific anesthetic case goals – *for both the patient & the team*
- Performing thorough case preparation prior to anesthetic drug protocol decisions
- Incorporating Anesthesia / Surgical Checklists into your practice – *proven to reduce anesthetic morbidity & mortality (M&M) rates in all sectors of veterinary medicine*
- Incorporating Multimodal Anesthesia techniques – *e.g. locoregional / nerve blocks*
- Prioritizing Recovery Quality – *the recovery period has the highest M&M rates of all ax-phases*

TREAT WITH INTENT

Just as your choice in suture type, pattern, etc., is intentional in order to serve your patient’s needs best, the same approach should be applied to any choice in anesthetic drug or therapy that your patient receives. Anesthetic events will always be more successful when the team approaches anesthetic drugs or methods with intention – “*Why did you choose this opioid over another? Why are you choosing this monitor over another? Why are you administering this reversal agent(s)?*” All aspects of anesthesia should have a supported reason or an intent behind their application to your patient’s anesthesia. Aspects that help teams consider how to be intentional with their anesthetic choices include:

- Understand the relationship of basic cardiovascular physiology variables – BP, CO, HR, SVR, SV
- Understand the relationship of basic respiratory physiology variables – SpO₂, EtCO₂, FiO₂, PPV
- Understand & “prove” to yourself how each anesthetic drug impacts the above variables – e.g. *inhalant anesthetics, IV fluids, reversal agents*
 - Often involves understanding the pharmacology of anesthetic drugs – e.g. *receptors, pharmacokinetics (aka how a drug moves in the body)*

CHOOSING DRUG PROTOCOL

Anesthetic events are more successful when all of the above aspects are considered prior to choosing an anesthetic drug protocol. Selection of anesthetic drugs is safer for the patient & easier for the team when you consider your anesthetic goals for the case – e.g. *you wanted to avoid vomiting with intramuscular opioid administration, thus you chose methadone over hydromorphone since you know how each of these drugs impacts that property*. Anesthetic goals, and thus the anesthetic drug protocol, should be individualized for each patient. While standardized protocols are helpful in that it allows teams to become comfortable with what to expect from the anesthetic drugs involved, it does not always ensure all goals are met for the individual patient. Anesthesia teams should be malleable & knowledgeable in all anesthetic drugs and/or methods in order to provide the best anesthetic care for each individual patient. Anesthetic drug protocols are always enhanced when multimodal techniques are incorporated such as locoregional techniques / nerve blocks, constant rate infusions, and/or more than one agent to meet the case goals. When uncertain if the chosen anesthetic protocol is appropriate or meets all the goals for the patient, consider consulting with a Veterinary Anesthesiologist or seeking online/textbook resources – see below.

RESOURCES:

Lamont, L., Grimm, K., Robertson, S., Love, L., & Schroeder, C. (Eds.). (2024). *Veterinary Anesthesia and Analgesia, The 6th Edition of Lumb and Jones*. John Wiley & Sons.

Johnson, R. A., Snyder, L. B., & Schroeder, C. (Eds.). (2022). *Canine and feline anesthesia and co-existing disease*. John Wiley & Sons.

Campoy, L., & Read, M. R. (2013). *Small animal regional anesthesia and analgesia*. USA: John Wiley & Sons.

Cooley, K. G., & Johnson, R. A. (Eds.). (2018). *Veterinary anesthetic and monitoring equipment*. John Wiley & Sons.

Campoy, L. (2022). *Development of Enhanced Recovery After Surgery (ERAS) protocols in veterinary medicine through a one-health approach: the role of anesthesia and locoregional techniques*. *Journal of the American Veterinary Medical Association*, 260(14), 1751-1759.

Member directory. American College of Veterinary Anesthesia and Analgesia.
<https://acvaa.org/diplomate-dashboard/members/>

Home page. North American Veterinary Anesthesia Society. <https://www.mynavas.org/>

Home page. Association of Veterinary Anaesthetists. <https://ava.eu.com/>