

Vetamac Vapors

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This issue of "Vapors" will introduce a question and answer section. Some Frequently Asked Questions (FAQs) will be addressed. If you have a question, please e-mail us at info@vetamac.com. Answers will be returned as soon as possible.

The Anesthetic Machine as an Intermittent Dosing Device - Part III

FAQs

In the previous issue of "Vapors", two of the characteristics of the anesthetic machine were discussed-volume and flow. The relationship of these characteristics determines the rate of change of concentration of anesthetic in the system when vaporizer settings are changed.

A third characteristic is one way valve configuration and function. If the one way valves do not function properly, this creates dead space and fresh gas may not reach the patient and carbon dioxide may not be removed. If sufficient fresh gas does not reach the patient, this can result in light anesthesia. If CO₂ is not being removed, this will cause an increased breathing rate because of increased carbon dioxide levels in the blood.

The final characteristic is the amount of intentional mechanical dead space. This will have the same effect as improperly functioning one way valves and is created by monitoring devices attached to the endotracheal tube or excess length of the tube that is outside the mouth. This dead space should be minimized as much as possible.

The second system to consider is the non-rebreathing system. Because of the characteristics of this system no re-breathing of expired gases occurs and there is no resistance to breathing since there are no one way valves. There is no mixing of fresh gas and expired gas in this system if the fresh gas flow is high enough to flush all of the expired gas away before the next inspiration. Therefore, changes in inspired concentration take place immediately because there is no mixing of gases. This system offers better control but is not as economical as the rebreathing system.

With the knowledge of the basics of the machine and an understanding of how the machine affects DUDE, the anesthetist is better able to diagnose problems that may arise with the machine. Remember, there is no safe inhalation agent, there is no safe anesthetic procedure, there are only safe anesthetists.

By Harry Latshaw
MS, RVT, VTS (Anesthesia)

Q: How full should the soda sorb canister be?

A: If the canister is filled too full, granules may become lodged between the canister edge and the seals. This creates the potential for leaks. This can be prevented by filling the canister to approximately 3/4 of an inch from the top.

Q: What is one of the most common things people neglect on the anesthetic machine?

A: Changing the CO₂ absorbent. As the absorbent is exhausted and is in the machine for long periods of time, it absorbs moisture and this moisture will collect in the machine. This causes the seals and other parts of the machine to deteriorate.

Q: Is it necessary to use Teflon tape or other thread sealer on DISS fittings that connect the O₂ hose to the machine?

A: No. These fittings are a compression style fitting and the tighter the nut, the tighter the seal between the hose fitting and machine fitting. Many DISS fittings have an internal O-ring that makes the seal even better.

Q: Who is this new person servicing my anesthetic machine?

A: Stefanie Skiles. Stefanie graduated from Purdue University in 2005 with a degree in Animal Agribusiness and a minor in Ag Economics. Stefanie joined Vetamac in March 2006 working as an in-house lab technician in the vaporizer lab. She currently serves as a field service technician in Indiana. Stefanie resides in the Rossville, Indiana area with her husband, Chad, one dog, and two cats. She enjoys working with her husband on their hog farm which is jointly owned with his brothers. Stefanie also enjoys working for Skiles Construction, the construction company owned by her and her husband. Her hobbies include reading, cooking, and outside activities.