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Product of the Quarter

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ROUTING CHECKLIST

Position	*Initials*
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Veterinary Technician	
Veterinary Assistant	

Past Issues of Vapors can be found on our website.

Potpourri

This issue of Vapors will discuss some questions that are not frequently asked and are a potpourri of topics. The questions may not seem that important but they can affect outcomes.

First, what is the correct oxygen line pressure? There is no correct pressure but there is an optimal pressure and there is a maximum pressure. The components on the anesthetic machine that receive the oxygen from the supply line are normally rated to receive no more than 100 pounds per square inch (psi). Except in extremely rare situations, the pressure should not be 100 psi or above. Oxygen regulators that are preset at the factory are usually set at 60-80 psi. If the regulator has a line pressure gauge and an adjusting handle, the pressure should be set between 40-60 psi. Some users prefer to have a lower line pressure, i.e. 20 psi. Some practices use oxygen concentrators that deliver oxygen at only 5-10 psi. So what is the answer? All of these pressures will deliver oxygen to the patient which is the primary goal, but there are other considerations. If, for example, a concentrator is used, the low pressure does not allow the flush valve to operate properly. The delivery of a high volume from the flush valve requires higher pressures. The optimal pressure for proper flush valve operation is 40-50 psi. The lower the pressure, the less "robust" the flush will be. At lower pressures, the flowmeter needle valve will have to be turned more rotations to achieve the desired flow rate. If excessive pressure is delivered (90 psi or above), some flowmeter components may be damaged when the needle valve is opened. Activation of the flush valve under excessive pressure may cause pressure in the breathing circuit that will harm the patient, especially if a non-rebreathing circuit is used. The optimal pressure should be 40-60 psi but lower pressures will work as long as the user is aware of the above considerations.

The second question in our potpourri of topics concerns waste gas. How is waste gas from a carbon dioxide monitor evacuated? If a monitor is used that draws gas from the monitor must be evacuated. The exit port on the monitor is usually a small hose barb or a luer lock fitting. One end of a small tube is connected to this fitting and the other end is connected to a fitting that will connect to the evacuation system. This is accomplished by cutting the evacution tubing 6-12" from the pop-off valve and connecting the two ends of the tubing to the fitting from the monitor. Most monitors remove 100cc-250cc/minute from the anesthesia circuit. This is a significant volume to be introducted into the work environment and is why it must be evacuated. If an active evacuation system is used, a proper atmospheric interface must be used to prevent negative pressure from being applied to the monitor. The circuit should also be free of obstructions so that positive pressure will not be created in the monitor. Proper evacuation of waste gas from the monitor will assure a safe work environment for all staff.

What about contamination of the soda sorb canister assembly, breathing tubes, and bag? Two additional questions may also be asked: 1) When is it an issue? and 2) Why are there not more problems? This is usually an issue when a patient with a contagious condition is anesthetized. The best solution is to dispose of the breathing tube and bag. However, soaking the accessories in a disinfectant solution, such as chlorhexidine, can be effective. If this method is used, the accessories must be rinsed thoroughly before using them again. The breathing tubes and bag should be rinsed with fresh water daily whether there are known infectious agents or not. Regular replacement of these components is recommended, especially if contamination is suspected. What about the canister assembly? Seldom, if ever, is it completely disassembled and disinfected and yet there don't seem to be problems related to infectious organisms. This is probably due to the alkaline environment in the canister assembly caused by the presence of the soda sorb. The pH is probably high enough to kill any organisms that are introduced into the canister assembly.

If you have a "potpourri" question, feel free to call or email!

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