will work well in dogs from 70 to 200 pounds. A simple rule of thumb is if the Tube feels too tight or too loose upon insertion, use the next size Tube, smaller or larger as appropriate.

Q: 11. Why do I hear air leakage sometimes when I first insert the Tube?
A: If a patient is "light" when first intubated, he may cough or forcefully expire. The baffles will release pressure exceeding 20-30 centimeters of water. So when first tubed, a "honking" sound of this pressure release is normal. When the patient is breathing normally, no leakage will occur. In either case, there will be no leakage during inspiration, so the patient will be receiving all the oxygen and anesthetic he requires.

Q: 12. What is the proper method of inserting the Tube?
A: The stylet included with the Tubes is necessary due to the flexibility of the Tube. Insert the Tube in the usual fashion and stop inserting while the Tube is in a forward motion. This will insure the baffles will seal the trachea and allow excess pressure to escape. Remove the stylet and secure the Tube to the snout in the usual ways.

Q: 13. Can positive pressure be applied?
A: Yes, 20-30 centimeters of pressure can be applied. If the operator desires more pressure, the Tube is merely withdrawn ¼ inch, and the baffles will flip over and as much pressure as deemed necessary is available.

Q: 14. Why does the Safe-Seal Tube cause no threat of damage to the Trachea?
A: There is minimal contact with the tracheal mucosa with the Safe-Seal ET Tubie and the pressure caused by the bending of the baffles varies between 1-3 centimeter of water. Inflation cuff Tubes have a large area of tracheal contact and require up to 30 centimeters of water pressure to seal. If inadvertent movement of the Tube occurs, the Tube will rotate and not cause friction damage to the mucosa. The baffles keep the tip of the ET Tube centered in the trachea at all times, thus not allowing pressure points typical of inflation cuff Tubes.

Q: 15. Sterilization Recommendations:
A: Method: Steam sterilize the product using the following parameters after removing all non-autoclavable protective packaging and labeling: Cycle: High Vacuum, Temperature 270 F (132 C), 4 minutes of exposure Cycle: Gravity, Temperature 270 F (132 C), 10 minutes of exposure Cycle: Vacuum, Temperature 270 F (132 C), 10 minutes of exposure

Q: 16. "I feel that I have to use too much pressure to insert the Tube. Is this a problem?"
A: No. After over 6,000 procedures performed, no problems have arisen to suggest that this is a problem. The pressure you feel while inserting the Tube is created by the bending of the baffles at the level of the arytenoid cartilages which are very tough. The needed pressure of the baffles (Blainers) is about 3 centimeters of water. An inflated cuff on traditional Tubes exerts 20-30 centimeters of water - which is about 10 times the additional pressure in a more sensitive area then the passage of the Blains through the arytenoids. The amount of pressure or resistance that you feel is similar to the pressure you feel when passing a large stomach Tube down the esophagus. Lubrication of the baffles either with water or KY is beneficial in reducing the friction at the arytenoids.

Q: 17. What if we see some blood when we remove it?
A: During the first 3 years of our clinical trials on real patients, if blood was noticed on the Tube the source was investigated. In most cases the blood came from the oral cavity from procedures such as dentals. All of the other cases the dogs were scoped and found pathology such as inflamed glottis or larynx caused by coughing, barking, viruses, etc. Remember that any blood or fluid in the throat is removed by the Safe-Seal Tube and is therefore visualized. With inflation cuff Tubes, the blood remains in the trachea and is not seen.

For more information, techniques and frequently asked questions, go to InnovativeAnimal.com® and Innovative Animal LLC Patent Pending
INSTRUCTIONS

For more information, techniques and frequently asked questions, go to InnovativeAnimal.com, click “Products”, click “Surgical Supplies”, click “Endotracheal Tube”

The Safe-Seal Endo Tube is easy to use and extremely safe. It removes almost all of the dangers of an inflation cuff Tube and provides several advantages. Here are some helpful tips:

1. A stylet is very helpful when inserting the Tube. The flexibility of the Tube is an extreme advantage, eliminating tracheal trauma by rotation of the tube during anesthesia. The patient can even be rotated without disconnecting the Tube from the anesthetic machine. The soft, flexible baffles will simply rotate, causing no undo pressure on the tracheal mucosa.

2. The Tube should be inserted in the normal fashion and stopped while inserting in a forward motion. This allows the baffles to lean rostrally thus allowing an “o” ring effect to seal the trachea during inspiration. In this position the baffles are designed to allow bypass of excess pressure in the lungs, more than 20-30 centimeters of water. If more pressure is desired by the operator for artificial respiration, the Tube is simply pulled back 1/2 inch and the baffles will flip over and allow as much pressure to be applied as the operator deems safe.

3. It should be noted that when a patient is first intubated and is “light” that the patient may forcefully cough or expire and sounds of air leakage around the Tube may be heard. This is normal and is due to the fact that excess pressure is allowed to bypass the Tube. No leakage should occur after the patient is breathing easily.

4. When inserting the Tube, lubricating the baffles with water or lubricating gel may be helpful but is usually not necessary. If a smaller patient is to be intubated and the Tube is marginally tight, lubrication is beneficial.

5. The operator should be aware that the body weight of the patient is not the only factor in determining the size of the Tube to be used. The Safe-Seal Tube will fit a larger range of tracheal sizes than traditional inflation cuff Tubes. However, there are breeds of dogs whose tracheas are either larger or smaller than their weight would suggest. Rottweilers for instance have a small trachea for their weight. A 1/8 inch Tube will usually fit a large Rottweiler quite comfortably. The simple rule is if the Tube seems tight while inserting, simply use the next smaller Tube.

6. Kinking or bending of the Tube is possible if extreme right-angle pressure is applied to the Tube, similar to standard inflation cuff Tubes used today. This is prevented by securing the mouth piece to the snout in the usual fashion, with the flared portion of the mouth piece next to the front teeth. On the smaller Tubes, the tip of the Tube is more flexible than the shaft. But when inserted properly, it is safely inside the trachea and is not subjected to kinking or bending. For this reason the small, 1/8 inch Tube should be inserted until the coned portion of the Tube, where the shaft meets the smaller tip, is in contact with the opening of the larynx.

7. To withdraw the Safe-Seal Tube, simply detach from the snout and remove. Unlike traditional Tubes, it is not necessary to tilt the patient’s head and neck downward to prevent aspiration of fluids which may have accumulated proximal to the cuff of the Tube. The Safe-Seal Tube will “squeegee” the trachea clean.

8. When using a relatively small Tube in a very large patient, if air leakage is detected, simply move the Tube forward or backward 1/8 inch to reposition the baffles and the Tube should seal. If not, use the next larger Tube.

FREQUENTLY ASKED QUESTIONS

Q: 1. What makes this endotracheal Tube better?
A: The Safe-Seal Tube was developed to eliminate the problems associated with inflation cuff Tubes. Mitigating risks of over pressurization, under inflation or ease of use make this Tube safer and cost effective. It cleanses the trachea upon extubation and isatraumatic to the tracheal mucosa.

Q: 2. How long will it last?
A: The K-9 Safe Seal Tube is made of a medical grade silicone and can be autoclaved for reuse. With the elimination of movable or inflatable parts there is no concern for failure of the tube if it were to be reused. The K-9 safe tube should be replaced periodically to insure that general wear and tear will not be an issue with function of the tube.

Q: 3. Do I need to worry about the Tube kinking?
A: The soft, flexible nature of the Tube is an extreme advantage. Rotation of the patient will not cause harm to the trachea because the baffles rotate easily. As with all Tubes, a right angle bending force could cause kinking. The operator should be aware that the Tube should be securely attached to the snout and if using a nonrebreather apparatus, that it should be kept in front of the patient on the table. Kinking has not been a problem in the seven year clinical trials. When using the smallest Tube, the tip of the Tube is 1/4 inch and is therefore more flexible. The shaft of the Tube is 3/8 inch diameter and resistant to kinking. As long as the flexible tip is safely inside the trachea, it is not subjected to bending forces.

Q: 4. What about sterilization and cleaning?
A: The medical grade silicone is autoclavable and resistant to cold disinfectants. Gas sterilization is safe but not necessary. The durable silicone can be scrubbed in the usual fashion.

Q: 5. How many Tubes do I need?
A: Only 4 sizes of Tubes are necessary for a small animal practitioner for dogs weighing 10 to 200 pounds.

Q: 6. Will water or fluids leak past the Tube during procedures such as dentals?
A: No. The Tube is designed to seal with 20-30 centimeters of water pressure in the trachea. Unless positive pressure exceeding this amount is applied in the pharynx, no passage of fluid is allowed to enter the lungs.

Q: 7. How does the Tube prevent over pressurization of the lungs of my patient?
A: The carefully spaced and tapered baffles are designed to allow excess of 20-30 centimeters of water to bypass and escape. Thus, if the pop-off valve is accidentally left closed, the pressure will be released and no harm will come to the patient.

Q: 8. What about “dead air space” in small, brachiocephalic breeds?
A: The total volume of a dog’s lungs determines if dead air space is a problem. A 20 pound pug with a short nose has roughly the same total volume as a 20 pound Whippet with a long nose. The length of the nose is irrelevant. Use of a non-rebreather for small dogs is useful whether using the Safe-Seal Tube or the conventional inflation cuff Tubes.

Q: 9. Who has been using this Tube?
A: Many veterinarians have participated in our trials, including board certified doctors. Some of their testimonials are included in the web site. The response has been overwhelmingly positive. Check them out!

Q: 10. How do I determine the correct size of Tube to use?
A: There is tremendous variation in the size of the trachea and larynx between different breeds of dogs. As a general guide line the small Tube will properly fit dogs ranging from 10 to 30 pounds. The middle size Tube will usually work in dogs from 25 and up to 80 pounds and the large Tube