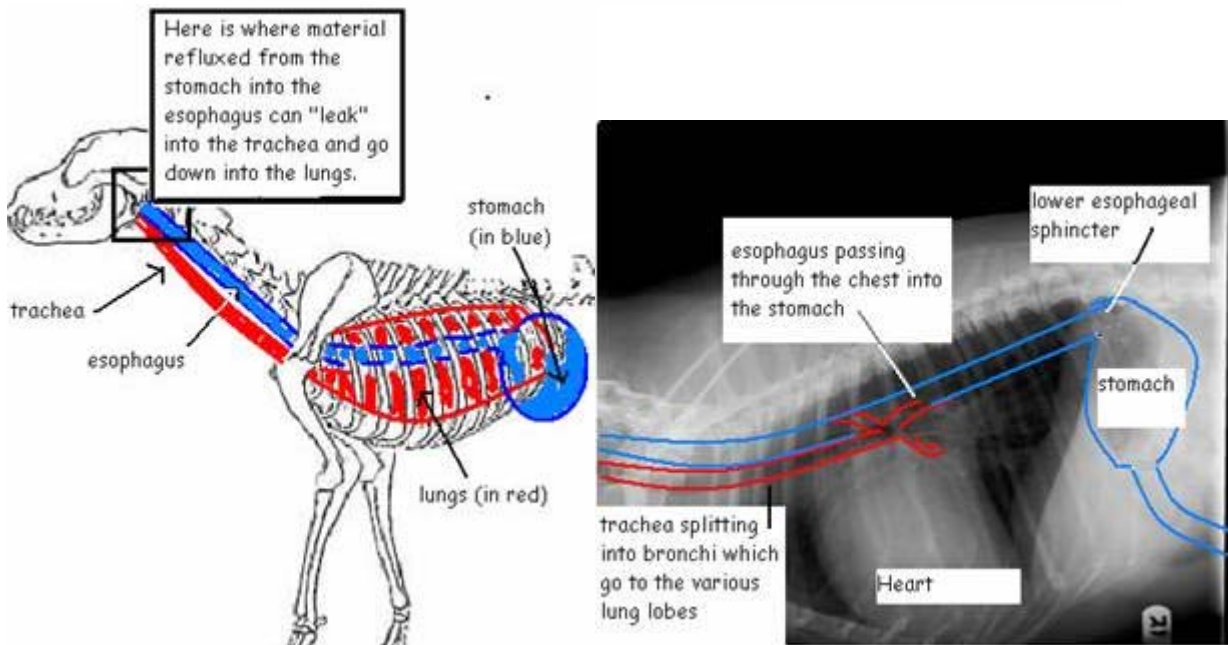
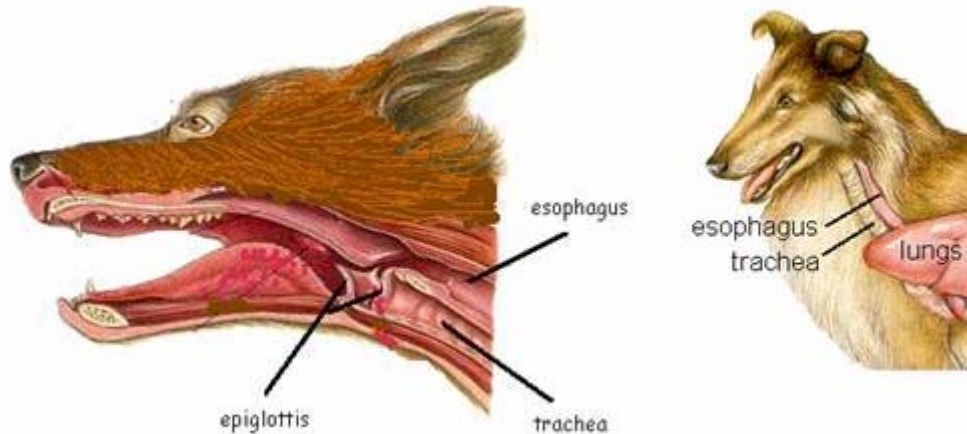


USING A NEBULIZER TO TREAT ASPIRATION PNEUMONIA-part 1

Dogs (and cats) with megaesophagus are prone to developing **aspiration pneumonia** because of their tendency to regurgitate into the back of their throat. The fluid/food then is breathed (aspirated) into the trachea, entering the lungs and causing infection.



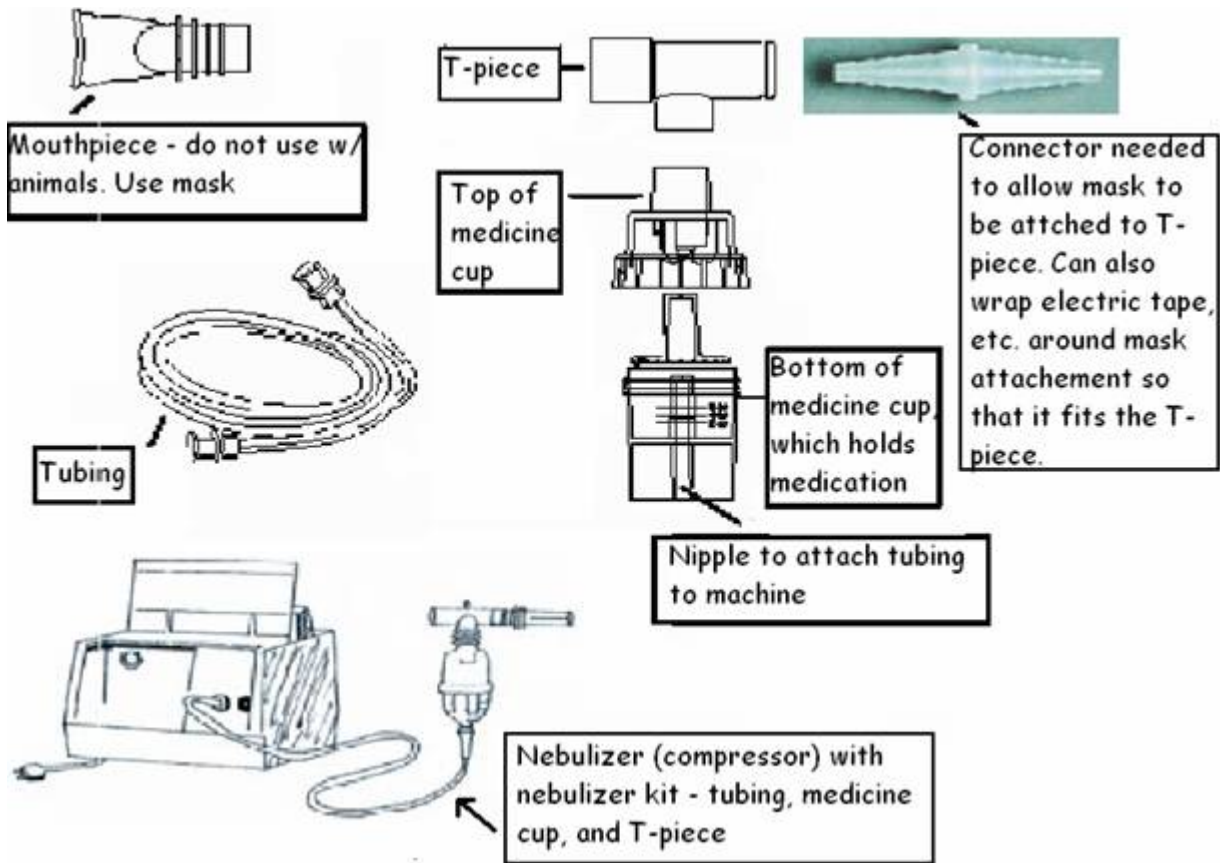
In the illustration you can see that the esophagus lies above the trachea. The epiglottis is a piece of flesh that protects the trachea, which leads to the lungs, from food or fluid passing into the lungs. With aspiration pneumonia, contents of the esophagus can leak into the trachea, behind the epiglottis, resulting in aspiration pneumonia.

A **nebulizer** is a machine that sprays a fine mist of medicine into the respiratory tract. One can be purchased from medical supply stores, or from ebay. There are several good nebulizer brands - Pulmo-Aide, Omron, DeVilbiss, etc. Make sure that you obtain the compressor (ie. the machine), tubing, and the medication cup - the tubing, T-piece and medication cup are called a "nebulizer kit." You will either have to make an administration mask, or, purchase an appropriate sized mask from a veterinarian. There is more information regarding pneumonia treatment on this website:

<http://www.veterinarypartner.com/Content.plx?P=A&A=1758&S=1&SourceID=42>

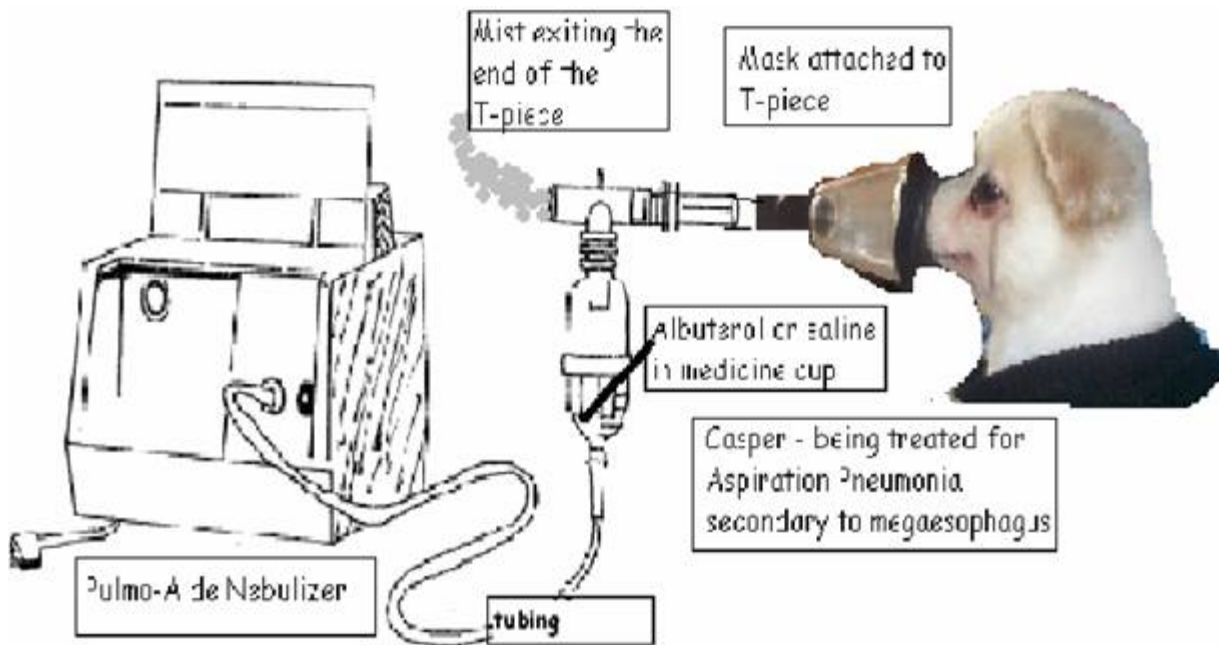
Steps in using a nebulizer:

1. Plug in the machine. It's also called a compressor.
2. Insert one end of the tubing into the compressor and the other end into the cup.
3. Attach the t-piece to the mask (obtain from vet.)



There are a variety of masks available for pets of varying sizes through your veterinarian.

See next page for additional steps and another diagram showing the mask on the dog.



Allegro receiving a nebulizer treatment

3. Place either albuterol and/or saline in the medicine cup.
4. Start the compressor.
5. Keeping the cup up straight, hold the mask up to your pet's face. You might want to "practice" placing the mask against the pet's face, prior to using the nebulizer. Put a little dog/cat food, baby food, cream cheese or peanut butter inside of the mask and allow the pet to lick it. This can also distract a pet while the treatment is proceeding.
6. After five to ten minutes, you'll see and hear that the medicine is running out. Shake the cup downward a few times to make sure all the medicine has come through. You're done!

Take apart the plastic parts of the nebulizer and wash all the parts.

Cleaning the Nebulizer:

Bacteria and viruses can live and reproduce in a nebulizer that is not routinely cleaned.

After each use, swish each piece in warm running water. At the end of the day, after you use it the last time, scrub each piece with warm soapy water. Rinse each piece under warm running water. Let each piece air-dry on a clean dish towel or a paper towel. When the pieces are completely dry, put the nebulizer back together. If not using for a period of time, store it in a clean, dry bag.

Twice each week, or after the treatment is completed, mix 1/2 cup white vinegar with 1 and 1/2 cups of tap water. Soak each piece in this mixture for one hour. Rinse each piece under warm running water. Let each piece air-dry on a clean dish towel or a paper towel. When the pieces are completely dry, put the nebulizer back together.

What do I do if I have cleaned my nebulizer and the tubing is still wet?

There is an easy way to dry the tubing. Attach the tubing to the compressor. Then, switch on the machine, and let it run for a minute or two. The blowing air will dry out the tubing. Use a paper towel or clean hand towel to dry the other parts.

What medications can be administered with a nebulizer?

1. Albuterol - opens up the bronchioles, making it easier to breath, and allowing antibiotics to get "deeper" within the lungs - use this prior to using the saline. As albuterol can increase heart rate, it should be used with caution in dogs with heart disease. Treatments should not exceed 3 per day, unless advised by a veterinarian. The dose of albuterol may need to be adjusted based on the size of the dog. Following are suggestions for treatment with the nebulizer, for pneumonia:

- over 60# - 3cc (1 vial)
- 45-60# - 2.5 cc
- 30-45# - 2.0 cc
- 20-30# - 1.0 cc
- 10-20# - 0.5 cc
- under 10# - 0.25 cc

Following treating w/ nebulization with 2-3 cc of sterile saline.

If your pet has any nervousness, rapid heart rate or pant excessively. Although symptoms are rare, they can occur. Symptoms will disappear within an hour or so. If this happens, report to your veterinarian for possible adjustment of dosage, or change in frequency of treatments.

2. Saline - decreases thickness of mucus and helps to moisturize the bronchioles, which helps material to be coughed up. Saline can be obtained from your veterinarian (can use saline used as intravenous fluids). Do not use that used for contacts.
3. Antibiotics - gentocin or amikacin, which are intravenous antibiotics, can be mixed w/ saline (6mg/kg of antibiotic, mixed w/ saline enough to make 3 cc. total volume) once daily (ideal to monitor kidney function as these drugs can be hard on the kidneys. Nebulizing w/ these antibiotics are more "kidney friendly" than when they are given intravenously.
4. Mucomyst can be given via the nebulizer to loosen and thin debris in the lungs.

As a suggestion to veterinarians who have not used albuterol, here is an example how we write our prescriptions:

Albuterol 0.083% 2.5 cc vials x 25
sig: using a nebulizer, administer q8-24hr as directed

Albuterol comes in a box of 25 vials, each containing 2.5 cc.

Suggestions for treatment with the nebulizer, for pneumonia:

1. Have veterinarian advise on dose of albuterol for your pet (see guide above)
2. Nebulize the computed dose of albuterol; if 1 cc or less, mix with 1 cc of saline
3. Nebulize additional 2-3 cc. of saline after albuterol treatment is completed

For prevention of recurrence of aspiration pneumonia, for example in patients with megaesophagus, or pets with bronchitis, daily, every other day or twice weekly nebulizer treatments with either saline and/or albuterol may be useful.

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