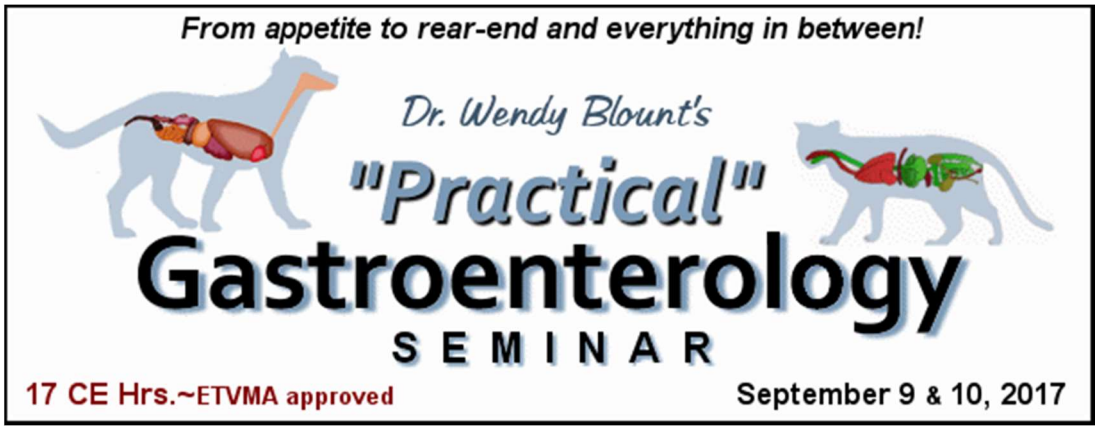

ESOPHAGOSTOMY TUBE PLACEMENT

Gather Supplies:

- **12-14Fr tube for cats, 12-16Fr tube for dogs** – red rubber or silicone
- **2-0 or 0 non-absorbable suture**
- **White tape** - porous
- **Bandage material** - Cast padding, Vetrap or elastikon, 4x4 gauze and scissors to trim, antibacterial ointment.
- **Curved or right angle hemostat** – appropriate size for patient. Long enough for box locks to be in the oral cavity when the tip is in the esophagus, half way between the angle of the mandible and the thoracic inlet. Sterile for the live patient.
- **Curved or straight hemostat**, not sterile
- **Polypropylene catheter** stylet small enough to easily pass in the tube, not sterile
- **Lubricating jelly** (sterile for the live patient)
- **Surgical blade** -- #11 or #15 preferred (sterile for the live patient)
- **Needle holders, thumb forceps and scissors** (sterile for the live patient)
- **Cutting needles** (sterile for the live patient) if not swaged on suture material
- **Sharpie** (permanent marker) to mark tube length
- **Plug** for the feeding end of the e-tube – injection plug, syringe plunger, Christmas Tree, etc.
- **Sterile gloves and drape**

For the live patient, you will also need:

- drugs and equipment for induction of anesthesia, intubation and maintenance on gas anesthesia
- clippers and scrub materials
- sterile surgical gloves – keep drape for sterile field to work from

Patient Preparation:

- Patient should be fasted for 12 hours prior to esophagostomy tube placement.
- Anesthetize patient – I prefer my patient intubated and on gas anesthesia, but others are happy with a short acting injectable anesthesia.
- Position patient in right lateral recumbency.

- Esophagostomy site is in the left jugular furrow, midway between the angle of the mandible and the thoracic inlet. Clip and surgically prepare the skin 2-3 inches square around the esophagostomy site.

Prepare the tube:

- Place the feeding end of the tube where you would like it to be anchored (opening over the left dorsal neck and facing caudally).
- Direct the aborad end of the tube cranially, then in a 180 degree turn ventrally and then caudally at the esophagostomy site.
- Continue caudally, and trim the distal end of the tube just caudal to the base of the heart, at the 7th or 8th intercostal space.
- If the catheter is "closed end", trim the distal tip off, even if the tube is the proper length. Closed end feeding tubes tend to get clogged.

Place the Esophagostomy Tube:

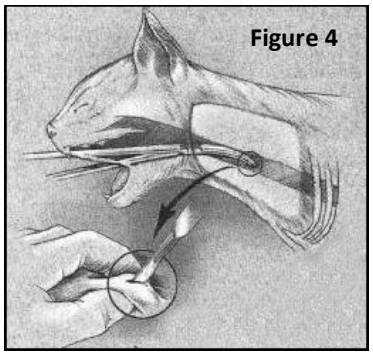
Figure 4

- **Place the right angle forceps** with tip up gently into the esophagus (gentle retraction on the tongue by an assistant can help move slowly past the larynx), until you can see the tip pressing upward on the skin at the esophagostomy site (see figure 4 right).
- Don sterile gloves and place sterile instruments on sterile field (I use the glove packaging for my sterile field).
- Position the tip of the right angle forceps either dorsal or ventral to the jugular vein, so that your stab incision will not traumatize the left jugular vein.
- With the left hand put gentle pressure on the hemostat handle, so that the tip is pushing firmly upward on the skin over the esophagus.

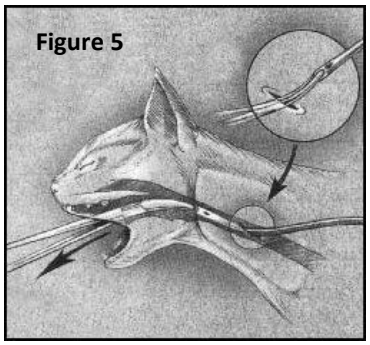
Figure 5

- With the right hand, palpate the tip of the right angle forceps to **confirm that there is nothing entrapped between esophagus and skin.**
- **Make a small stab incision i**n the skin only over the tip of the right angle forceps, just big enough to barely see the tip of the forceps (see figure 4 above right).
- Bluntly force the tip of the forceps through the esophagus, to **expose the tips.**
- Open the forceps**, grasp the distal end of the esophagostomy tube**, and lock the forceps closed (see figure 5 right). It often works best to put just one of the tips into the inside of the tube, and the other on the outside prior to locking.

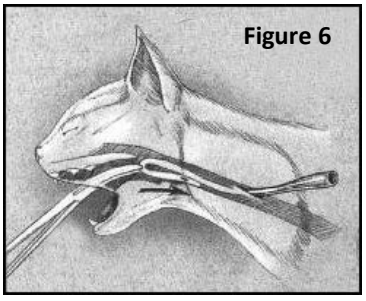
Figure 6

- **Pull the forceps and tube cranially** (see figure 5 above right), until the feeding end of the tube is snug against the skin. Some resistance is expected, but if you meet too much, you can enlarge the stoma very slightly in order to pass the tube. You want the stoma snug around the tube.
- Detach the right angle forceps and **feed the end of the tube back into the esophagus back toward the stomach**, using your fingers or a straight/slightly curved hemostat.

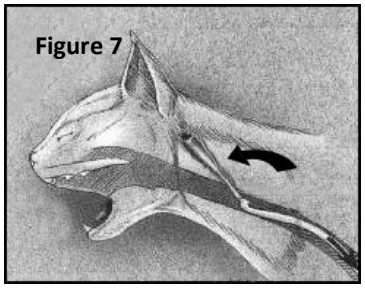
Figure 7

- When the final loop is seen or palpated in the pharynx (see figure 6 above right), use a hemostat to feed the tube entirely into the esophagus. When it is properly placed, the feeding end of the tube will "flip" from caudal to cranial (see figure 7 right). Sometimes pulling the feeding end of the tube 1-2 inches in the cranial direction will help achieve the "flip."
- **Confirm that the tube is properly placed** without stricture at the stoma site and without any kinks either by passing the stylet fully into the tube. In the live patient, you can aspirate with a large syringe – there should be negative pressure if the tube is in the esophagus, and aspiration of free air if the tube is in the trachea. Or alternatively in the live patient, you can blow air into the tube and check for burping sounds heard in the mouth. If the pet is intubated cuff inflated, passing the e-tube into the trachea is near impossible.
- Take a radiograph if you wish, to confirm proper placement.

Secure the E-Tube

- **Place the feeding end of the tube where you would like it to be anchored**, and then place a **double-tagged white tape butterfly on the tube ¼ inch or so from the esophagostomy**. The tube should slide in and out of the esophagostomy with mild resistance. If the esophagostomy is pinched so as to occlude flow, enlarge by a small amount very carefully with the surgical blade. Be careful not to nick the tube.
- **Suture the white tape butterfly** dorsally and ventrally to the esophagostomy site.
- An alternative means of securing the tube (rather than tape butterfly) is making a purse string around the stoma and using two long free ends of non-absorbable suture in a **Chinese finger cot** pattern. This technique holds better if monofilament suture is used, as well as a soft tube (such as silicone) that "grabs" the suture well.
- Use both a tape butterfly over a finger cot suture for extra security if you wish.

Apply Bandage

- **Allow the patient to recover** to sternal recumbency prior to bandaging the tube in place. It is difficult to gauge the proper bandage tension when the muscles are relaxed under general anesthesia. Esophagostomy tube bandages placed under anesthesia are often too snug.
- There are many bandaging techniques that can be used. I like to:
    - Cut a small piece of **4x4 gauze, apply antimicrobial ointment** to it, and place it on the esophagostomy site.
    - **Protect the shaved skin** with 4x4 gauze placed between the skin and the tube. This becomes less necessary as hair re-grows.
    - **Anchor the tube firmly in place with porous white tape.** Some like elastikon, but I find it very difficult to remove without a great deal of discomfort to the patient. Leave no loops of tube that could be caught by a toenail to pull the tube out.
    - **Wrap with cast padding then Vetrap** or Coflex. I like to tuck the feeding end under the last layer of Vetrap so that it does not dangle and bother the pet.

Check the Tube

- Once the patient has recovered swallowing reflex, check patency of tube with 10 cc of water or saline. If resistance to flow, re-wrap the bandage.