GIF-Tube®
For Needleless Subcutaneous Fluid Administration
Procedure & Information Guide

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Procedure Updates can be found at www.practivet.com

IMPORTANT
Optimal results are obtained by never reusing fluids or IV sets. If the patient must receive fluids twice daily, refrigerate opened IV fluid-IV line combinations. Failure to refrigerate will cause rapid failure of the SQ tube due to fibrosis related to low-grade infection. NEVER reuse after the bag or IV set has been opened for over 12 hrs.

For Technical Support contact PractiVet® at (800) 641-8988
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## Placement of the GIF-Tube for SQ Fluid Administration

*Read pg. 3, “Maintenance of the GIF-Tube”, Before Performing This Procedure.*

Prep thoroughly. For anesthesia, we use a very low dose of IV Ketamine / Valium followed by Isoflurane in cats, and Propofol and Isoflurane in dogs. The patient should be intubated, prepped and positioned in ventral recumbency with the neck secured over a rolled towel. Gently tape the head to the table to steady it. **Mark the tube insertion point on the dorsal midline. (Cats & small dogs: 2.5-3 inches from the base of the skull. Larger dogs: between shoulders.) Be certain the assembled tube will not touch the ears causing irritation.**

If right-handed, stand on the right side of the patient. **Moisten the stylet and terminal tube with sterile saline.** Insert the stylet into the GIF-Tube and be sure the terminal end remains seated in the end cap. Make a nick with a # 11 blade through skin & SQ. Tent the skin and pass a mosquito hemostat 1-1.5” deep into SQ to start tunnel. Pass the moistened stylet/tube assembly through the incision and **just off of the dorsal midline. (Note that the tube starts at the midline but is directed just lateral to it as it is passed.)**

Grasp the tube through the drape and skin, and **direct caudally & ventrally. In very thin patients, you may meet resistance in the area of the shoulders.** Use your left hand to guide tube and continue to advance it until it finds the plane of separation between the layers of tissue. **Direct the tube toward the flank area. Insert all the way to the skirt so that no tube is exposed. Be certain that the polyester, tissue-ingrowth cuff is passed through the incision site and completely buried.**

**Secure the caudal-most sutures at the 5 & 7 o’clock position first.** Once secured, the stylet may be withdrawn. Grasp the terminal end of the tube through the drape and skin and hold in place as the stylet is withdrawn. **Suture the tube skirt in place using a tough, coated, multi-strand suture like 2-0 Braunamid.** Do not use monofilament nylon or silk or any suture smaller than 2-0. **Don’t suture too tightly to the skin.** Allow room for a hemostat tip in the loop of each stitch. Place the remaining sutures at every 10-minute position. **The sutures should bite 1/4 inch of skirt and 1/8 inch of skin.** Bring the two together without pressure on the skin or the skirt. Most patients will allow the placement of replacement sutures when necessary without anesthesia.

**Place the MicroClave on the tube. Screw on while firmly grasping the hub that it screws onto to prevent the hub from rotating within the tube.** Attach the IV line and administer fluids. **(Always use a NEW IV line/IV bag combination). Never use fluids that have been previously opened.** Replace cap on MicroClave.

We recommend adding the proper daily dose of Baytril® (5mg/kg) to each bag for the first 10-14 days to help protect against any infection. It is best to have owner inject pre-measured antibiotic directly into bag prior to administering fluids. Do **not inject directly into GIF-Tube as this may cause irritation and fibrosis around the tube.**

We recommend that you apply Soft-Paws® to the patient for at least the first month to prevent scratching damage to the tube. For the first 10 days apply a small drop of antibiotic, chlorhexidine or Zymox® to incision site.

**IMPORTANT**

Carefully follow the instructions included in “Maintenance of the GIF-Tube”. We recommend training key staff members in the maintenance and client procedures. Veterinary and client-training videos are available on CD from PractiVet. Four Client Instruction Guide booklets are included in your kit. **Send clients home with the provided instruction booklet and video CD to insure that aseptic technique is followed.**

A common mistake is to use a previously opened fluid bag after surgery to “test” the implant. **ALWAYS use a new IV Line/IV Bag combination when accessing the GIF-Tube.**
Maintenance of the GIF-Tube
Sterile technique is extremely important because an implant is in place.
Following the steps recommended below can minimize infections.

♦ Bacteria will be protected from the body’s response as well as antibiotics by a biofilm that naturally forms around any implant. The body will respond to bacteria by walling off the implant and preventing fluid flow through it. This will result in the fluid forming tight pockets and leaking out through the insertion incision around the implant.

Protection of the MicroClave & Entry Site

1. Before each treatment, remove the Port Cap (if used) from the MicroClave, and drop it into proper disinfectant. PractiVet recommends only concentrated chlorhexidine surgical-prep solution or a freshly made 1:10 bleach solution*. Wipe the tip of the MicroClave with a cotton ball dipped in one of these disinfectants. Do not use alcohol because it evaporates too rapidly to be bactericidal.
   *As an alternative to a chlorhexidine prep solution, mix 1 part regular chlorine bleach to 10 parts distilled water. This is approximately ½ measuring teaspoon per ounce of water. STUDIES SHOW THAT BLEACH MUST BE PREPARED FRESH FOR EACH TREATMENT!
2. Avoid accidentally unscrewing the MicroClave when you remove the port cap.
3. Maintain the site where the tube penetrates the skin by routinely cleaning the tube/skin interface under the skirt with peroxide on a Q-tip. Check stitches for signs of inflammation and treat when necessary with a drop of antibiotic/steroid medication on the stitch site.
4. Reach under GIF-Tube skirt and trim hair when necessary on longhaired cats if necessary.

Protection of the Exposed GIF-Tube Parts

1. Apply Soft Paws as a precaution or if the patient shows any inclination to bother the apparatus.
2. Cover the apparatus with a cut-off tube sock.
3. Proper placement of the initial incision on the midline and 2.5-3 inches or more from the base of the skull will prevent the port from rubbing on the ear and causing scratching.
4. IMPORTANT: The client should replace the MicroClave every 10 uses or every 14 days, whichever is sooner. Do this by unscrewing the MicroClave from the hub. Hold the Luer Hub in place when unscrewing the MicroClave to prevent loosening of the hub within the tube. Disinfect & clean the hub with a cotton ball moistened with the proper disinfectant before applying a new MicroClave.

All recommendations are explained in the GIF-Tube Client Information Guide and CD.

Protection of the Fluids & IV Set

1. Use a new IV line and bag of fluids for each treatment. We recommend 250ml bags for small patients. These bags are approximately the same cost as liter bags, but they are easier for the client to handle.
2. Warm fluid in the microwave before the IV line is inserted. This will make the administration of large volumes of fluids much more comfortable for the patient. It takes about 25-30 seconds to warm a 250ml bag in typical microwave. Never give fluids that are over 100° F.

If You Must Reuse Fluid-IV Line Combinations (12 Hour Window Only)

1. Refrigerate the opened fluid-bag-IV line combinations. Failure to refrigerate will cause rapid failure of the SQ tube. Never reuse after the bag or IV set has been opened for over 12 hrs. A quick convenient method of bringing the fluids back to between room and body temperature once the IV line is inserted is to place 1/3 of the fluid bag in a small bowl in the sink. Protect the IV line by hanging it above the sink on a cup hook. Allow hot water to run into and overflow the bowl until fluids are at proper temperature. Never give fluids that are over 100° F.
2. When the cap is removed from the terminal end of the IV line, drop it into the disinfectant. After each treatment, replace the cap on the line in a sterile manner.
Handling Complications

1. Blockage or Slowdown of Fluid Flow
The primary cause of a slowdown of fluid flow is infection. Always rule out infection first if the tube is not functioning properly. Note that infections are generally low-grade and rarely cause fever or pain. This is because the bacteria are contained within the biofilm that forms around the implant. *Perform flush test described below.*

**Facts About Infection…. Infections can be the result of:**
1. Contamination during the implant procedure or use of opened IV lines or fluids after surgery
2. Migration of bacteria through the incision and down the external wall of the tube prior to tissue growing into the mesh cuff. (It takes 1-2 weeks for the tissue to grow into the cuff and seal site.)
3. Inappropriate reuse of IV lines and fluids

**Infection around the tube can leave the tube non-functional due to fibrosis around it.** Whenever the owner notices any decreased flow rate of the fluids or tight pocketing, use the **FLUSH TEST** to check for infection. Don’t assume the tube is kinked or migrated. Kinking or blockage within the tube is very rare and will not cause fluids to run out at the tube/skin interface or to form tight pockets under the skin.

Start infection treatment as described below regardless of your findings, pending a culture.

**Flushing Test**
The flush test is the most valuable tool that we have to determine the status of the tube. Flush test every tube whenever you see the patient. You will quickly learn what is normal and what is not. If you have an incubator and blood agar plates, you can also place the fluid from the test on a blood agar plate. Observe for growth and send for sensitivity if indicated. Even 1 or 2 colonies may be significant and will be missed frequently if fluid is sent to a lab for culture. When sending fluid to lab, send 1 ml and have it cultured like a urine sample.

Flush 10-12 ml of STERILE, FRESHLY OPENED, saline or ringers into the GIF-Tube.

**Draw back on the syringe and aspirate all of the fluid that you can.**

- **If the tube is functioning perfectly,** you may only draw back a few ml of the fluid. The fluid will look clear but it may have some white specks of fibrin or white blood cells present.
- **If the body is beginning to react** due to inflammation or infection, you will draw back most of the fluid that you injected. This is because the **body is forming a thin pocket of fibrous tissue around the tube.** There will be significant fibrin and WBCs present. **Blood is always a sign of infection in these cases.** Culture the fluid that you withdraw. If the owner is still able to treat through this tube, add a daily dose of Baytril® to each day’s fluid for 10-14 days. Have the owner inject the antibiotic directly into the fluid bag just prior to administering the fluids. We use 5mg/kg of Baytril once daily. Oral antibiotics may also be used as indicated.

**If the tube is non-functional,** flush fluids containing Baytril back and forth through the tube and then remove the tube. See **GIF-Tube Removal** under Questions And Answers. Start on oral Baytril or Zeniquin® (cats). **Do not place a new tube on the other side for at least 7 days.**

- The human and veterinary literature confirms my own experience that it is difficult to eliminate an infection when there is an implant in place. **If there is a definite infection present, the tube must be removed.** Once the tube is removed appropriate antibiotics will generally be quickly effective against the infection. **If there is an abscess present, drainage is indicated. The tube can be converted to a drain under local anesthesia.** Incise the skin 2” from the proximal and distal ends and pull 1.5 inches of tube through the skin incisions after removing the skirt and connectors from the tube.

**IMPORTANT:** To avoid contamination, do not attempt to place another tube on the opposite side until the infection is completely eliminated and the original incision is healed. Wait a minimum of 7 days.

2. Other Complications
   - **Kinking of a properly placed tube is very rare.** It will not cause fluids to form tight pockets or to backflow out of the tube/skin interface. Radiographs will reveal kinking.
   - **Blockage within the tube is also a rare complication,** and it is often confused with backpressure caused by the fibrosis around the tube caused by infection.
**Questions and Answers**

**GIF-Tube for Subcutaneous Fluid and Drug Administration**

What are the possible applications of the GIF-Tube?
The GIF-Tube is currently being used whenever SQ fluids are indicated on a long-term basis.
- Chronic nephritis in dogs and cats and other species
- Improving the quality of life in terminally-ill patients
- Increased hydration of megacolon cats to promote softening of the stools
- Parvo – Mix all your medications into the Lactated Ringers solution (Naxcel®, Reglan®, pain management medications, etc). Place the GIF-Tube and send client home to care for pet in own environment when you judge this is indicated by their circumstances. **In a severely debilitated animal, consider use of a local anesthetic. Be certain to do a thorough prep as these animals are very susceptible to infection.**

How is the GIF-Tube supplied?
The GIF-Tube and its accessories are sold in two different kits: *GIF-Tube Single-Patient Kit* & **GIF-Tube Kit**

*GIF-Tube Single-Patient Kit (Item# 3110).* This kit supplies everything you need for a single surgical procedure (1 GIF-Tube and 1 Stylet), as well as a GIF-Tube Client Kit (see below for details), which supplies your client with all of the supplies needed for 30 SQ treatments (except fluids). Veterinary & Client Instructions and CD/Video are included.

**GIF-Tube Kit (Item# 3010) has supplies for 4 surgical procedures.** This kit includes 4 GIF-Tubes, 1 S/S Stylet, 4 MicroClaves with caps, Veterinary and Client Instructions, and CD/Video. No IV lines are included. When ordering GIF-Tubes, please remember to order additional MicroClaves or the GIF-Tube Client Kit so that you will have these items available when your client needs them. These items are available from your distributor.

**GIF-Tube Client Kit**: To make the treatment convenient and cost-effective, PractiVet has made available the GIF-Tube Client Kit. This 30-treatment supply pack includes all of the supplies your clients will need for their pets’ treatment, except for the fluids & disinfectant supplies. Provided in the kit are 30 GIF-Tube Fluid Administration Sets. (Each set contains a luer-lock connector to provide a secure connection to the MicroClave during fluid delivery). Also provided are 3 fenestrated drapes to facilitate easy clave changes, 3 MicroClaves, and 3 MicroClave caps. Instructions for routine changing of the MicroClave are also included. The GIF-Tube Client Kit is available through your distributor. (Item # SFM6800)

How do I sterilize the GIF-Tube?
The GIF-Tubes and Stylets are now shipped STERILE. If it is necessary to re-sterilize, always wrap tube and stylet in a drape or place in a sterilization bag. The tubes and stylet can be steam autoclaved in the usual manner up to 270°. Always prepare more than one tube prior to a surgery in case you break sterility. **The MicroClave cannot be resterilized!**

Can damage to the skirt be repaired?
Household silicone sealant can be used to repair damage to the skirt. PractiVet can provide a circular patch to place over a badly damaged skirt.

Is the GIF-Tube available in multiple sizes?
At the current time, the tube is available in one size that fits almost all-sized animals. Other sizes will be available soon for very small animals such as ferrets and for large dogs. The current size is excellent for adult cats and most dogs. Five hundred ml can be administered to a 60 lb dog in less than 5 minutes.

**The tube can be modified for animals smaller than a small adult cat in the following manner:**
1. Determine how long you want the tube to be.
2. Remove the end cap from the end of the tube by grasping it and working it out & cut tube to desired length.
3. Dip the end of the tube in alcohol and then force the end cap back into place.
4. Add new fenestrations to replace any you cut off. Keep them close to the end of the tube.
5. Hold the stylet in place with the palm of your hand as you insert the tube, as it will no longer fit into the luer lock.

Why do we recommend 2-0 Braunamid suture?
We have had this suture last for over 1 year in our GIF-Tube patients. It is very resistant to breaking when scratched or as it ages. We have not had long-term success with any monofilament suture. **Braunamid is not a PractiVet product, but it is available from your distributor.**
What do we use for anesthesia?
For debilitated cats: a very low dose of Ketamine/Valium® IV, and mask with Isoflurane® if necessary. Intubate and maintain on gas.
For dogs: Propofol® followed by Isoflurane® or mask with Sevoflurane®.
In very debilitated dogs, consider the use of a local anesthetic. Prep the path down the side that the tube will take and mark with and indelible marker. Infiltrate this line and the incision location on the neck with diluted lidocaine.

How long can the tube remain in place?
Most tubes will function for many months to over a year with minimal complications. Infection prevention is a must for long tube life. For maximum life of the GIF-Tube, avoid reuse of fluids & IV sets and always make MicroClave changes when indicated.

How is the GIF-Tube Removed?
Anesthesia is not necessary. After removing the sutures, enlarge the opening in the skin slightly by spreading a pair of hemostats in the incision. Grasp the tube and apply steady traction while pushing the skin back over the tube at the incision site. The polyester tissue-ingrowth cuff will break loose from the tissue and the tube will slide out. Occasionally, a local around the proximal ½ inch of the tube is necessary if the tube has been in place for a long period of time.

Is there a preventative measure taken to reduce the chance of fibrin in the tube?
We originally used heparin to prevent fibrin formation; however, our experience has shown that if there is no infection present, the body will “ignore” the tube and fibrin will not form. Heparin is never necessary or recommended.

Do you put the tube in midline or laterally?
We place the tube 2.5-3” behind the base of the skull in cats and between the shoulders in medium to large dogs. Once inserted, the tube is directed off of the midline in the direction of the flank so that the opposite side will be available if complications occur. Fluids accumulating in the flank produce less pressure and discomfort.

What is an average charge for this procedure?
Charges for placement of the GIF-Tube vary widely by practice. Keep in mind that it is a surgical procedure requiring an implant, anesthesia and sterile technique. Typically, the total is about the cost of a complete Dental Package plus the cost of the implant. The long-term cost of the day-to-day treatment of animals with SQ fluids can be affordable or cost-prohibitive depending on the philosophy of the veterinary practice. In our practice, these patients are usually our favorite patients and belong to our best clients. If we can make the daily cost affordable, it is a win-win situation. There are many on-line websites advising your clients on cheaper sources of fluids and supplies. In our practice, we have found it best to keep control of our patients’ treatment by providing supplies at a mark-up that takes into account the long-term nature of this treatment.

How do you dispense the supplies to the client?
In our practice, we provide our clients fluids by the case. For cats and small dogs, dispense 250 ml bags of fluids for easier handling and less temptation to reuse the bag. Remember that it is critical to the long-term success of this procedure to not reuse bags and sets that have been open for over 12 hrs. For all other supplies needed, we provide our clients with the GIF-Tube Client Kit, which offers all supplies needed for 30 treatments via the GIF-Tube. Optimal results are obtained by NEVER reusing fluids or IV sets.

Contact your distributor or VSM to order GIF-Tubes, Videos or Supplies
VSM: (800) 535-4057
For Technical Support, Contact PractiVet at (800) 641-8988
E-mail: info@vsmllc.com
Web Site: www.practivet.com
GIF-Tube Client Kit

Developed to provide GIF-Tube patients with the components needed for at home fluid therapy (except the fluids) in a convenient, 30 treatment, cost effective kit.

The new GIF-Tube Client Kit:
- Makes home fluid therapy simple and affordable
- Provides clients with the necessary components for fluid delivery (except the fluid) in 1 dispensable kit
- Reduces inventory cost and space

The new MicroClave:
- Provides a physical barrier against microorganisms
- Allows for rapid fluid delivery
- Attaches directly to the GIF-Tube eliminating the need for an injection port
- IV Lines (and syringes) attach to the MicroClave eliminating the need for Clip Lock Cannulas
- Streamline design is more comfortable to patients

Featuring the new MicroClave
The latest in needleless technology

GIF-Tube Client Kit
(Item#SFM6800) Contains:
- 30 Specially Designed, Economical IV Sets
- 3 MicroClave Connectors
- 3 Protective MicroClave Caps
- 3 Disposable Drapes for MicroClave Changes
- 1 Disposable Forceps

www.practivet.com
GIF-Tube® Client Feedback

Not sure your clients would be interested in a GIF-Tube implant? Read what some happy GIF-Tube cat owners have to say:

Excerpts from CRF Support Online Group Forum

Teri writes:
We were giving him fluids every day via those horrid needles. My kitty looked like a pin-cushion. He also was getting extremely frustrated and very upset with the whole process. Then my vet and I discussed the GIF-Tube that I had read about on the feline CRF website. I thank Dr. St. Germain for creating this wonderful apparatus. It has made life so much easier on my cat and myself. NO MORE PAINFUL INJECTIONS! Pudge is more alert, is eating better, and is my loving, purring fluff ball again.

Emily writes:
I think the GIF-Tube is great. I have had no problems with complications since I strictly follow sterile procedure. I am really grateful for the tube because she no longer wanted to get in my lap for fear of a needle stick. Now with the GIF-Tube she sits in my lap all the time. All of her medications except for her phosphate binder are given in her SQ fluids. This makes things much easier on all of us. Thanks PractiVet!

Aleta writes:
Yesterday I gave them fluids with my neighbor looking on (formerly it had taken both of us to hold him down and stick needles in him while he struggled and yowled, and it was getting harder and harder to find and keep a needle connection). Today, I did it all by myself. Leo the Lion-Hearted became Leo the Lamb!

Candy writes:
I just got home from having blood rechecked! BUN is 37.4 and creatinine is 2.25. I have been on cloud nine! I want to say “thank you” also, to everyone in this group and Dr. St. Germain. I see how well Speck is doing and I am amazed!

Kathy writes:
The “wow” from the title (of my email) is because I can clearly see how much better Ravenal is feeling. This morning, our 3½ year old daughter climbed into bed with us and for the first time ever, Ravi went straight up to my daughter, cuddled in by her neck, and started purring loudly. I was almost in shock but of course I was also thrilled! I didn't think a 19½ year old cat would be interested in starting a new relationship with a 3½ year old, but I was proven wrong!

Thanks to PractiVet for making this product available. I'm glad to know there's something there that will help her feel better in her golden years!

An Update on Samson, Our Mascot

Samson, (featured in the GIF-Tube literature), recently lost his battle against CRF. Samson’s GIF-Tube remained complication-free for 18 months. He strongly opposed needle injections, and would not tolerate SQ treatments. Samson was given two additional years of quality life without the pain of daily injections. Samson was a celebrity at the trade shows, and is even pictured in the brochure for the North American Vet Conference with his adoptive Mom, Deirdre.

Samson, age 18, recently passed of complications related to Chronic Renal Failure.

For more client responses, visit the CRF GIF-Tube Users Forum at http://groups.yahoo.com/group/giftube or www.practivet.com

If you have questions regarding the product or the surgical procedure or would like to place an order, call VSM at 800-535-4057