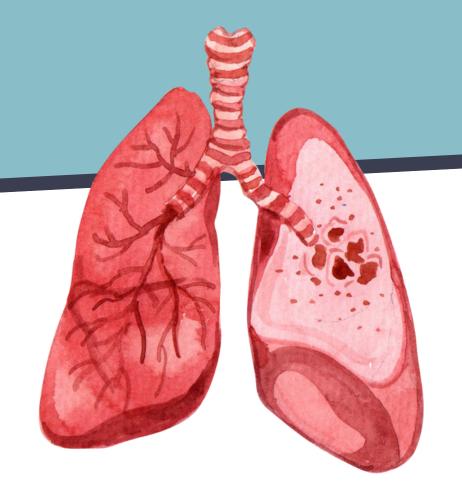
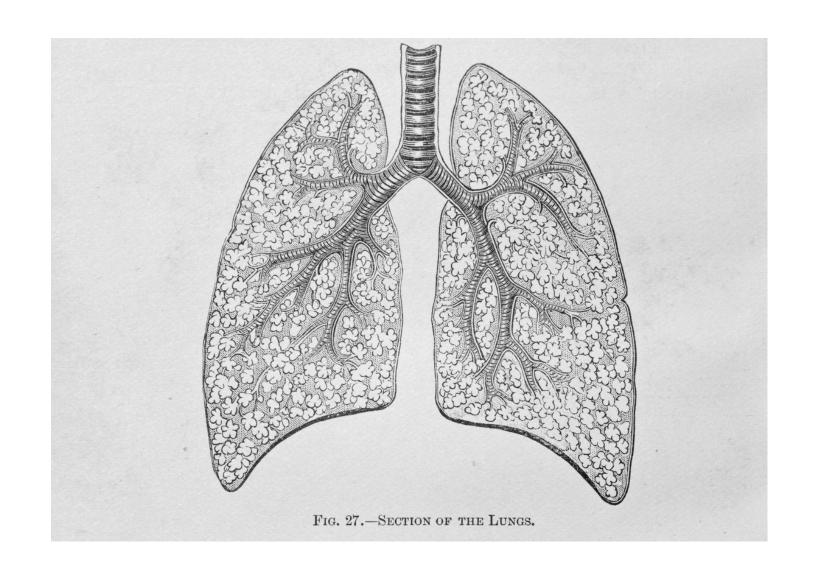
# VIDEO-ASSISTED THORACIC SURGERY

(VATS)



## 101

- Video-assisted thoracic surgery (VATS) is a minimally invasive surgical technique used to diagnose and treat problems in the chest.
   During a VATS procedure, a tiny camera and surgical tools are inserted into the chest through one or more small cuts in the chest wall.
- During the procedure One Lung Ventilation (OLV) is utilized to surgically induce a pneumothorax.
- Because it is minimally invasive, it comes with reduced pain, length of hospital stay and morbidity than that of an open thoracotomy.



## <u>INDICATIONS</u>

- Treat pleural cysts, blebs and effusions
- Biopsy mediastinal masses
- Wedge resection
- Lobectomy
- Lung volume reduction
- Cervical sympathectomy
- Pleurodesis
- Pericardial effusion
- Decortication

## **CONTRAINDICATIONS**

- Severe COPD
- Hypoxia
- Severe pulmonary hypertension
- Severe adhesions in the pleural cavity
- airway mass
- unable to tolerate lung isolation (OLV)

#### **PLEURODESIS**

- Treats recurrent pleural effusions and spontaneous pneumothorax
- A chemical agent (sometimes Talc) is applied the pleural layers, causing them to adhere to one another.
- When the layers adhere there is no longer space for the accumulation of fluid, air, etc.

#### **WEDGE RESECTION**

 Removal of a wedge shaped section of lung, possibly diseased, containing a tumor, or for diagnosis of chronic lung disease.

#### **DECORTICATION**

- Surgical removal of the surface layer of the pleura once it has become thick and fibrous from chronic disease.
- Once this inelastic cover is removed, the lung should be able to expand more easily.





#### **POST-OPERATIVE CARE**

#### 1. Pain control

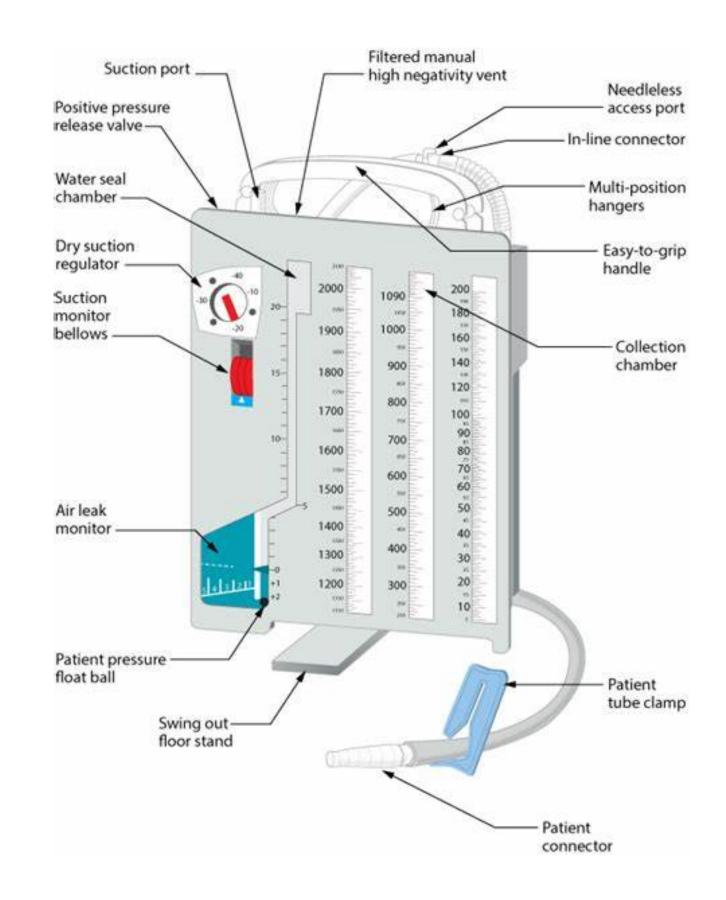
- Pain control with PRN medications is very important.
- The patient may have a nerve block placed in the OR

#### 2. Respiratory Care

- Monitor for hypoxia
- Prevent atelectasis (deep breathing and Incentive spirometry)
- closely monitor lung sounds

#### 2. Chest tube maintenance

- Closely Monitor output and patency
- The chest tubes are usually removed within a few days post operatively.
- The patient may go home with a smaller chest tube drainage system to help them manage an effusion outside of the hospital.



## Drainage instructions PleurX<sup>™</sup> catheter system

Getting started: Have all drainage supplies ready and then thoroughly wash your hands.



1 Open all packaging. Unfold blue wrapping. Place bottle near wrapping and lay access tip on blue wrapping.



2 Pick up each glove by the wrist cuff and put both of them on.



3 Tear open alcohol pads. Lay open alcohol pad pouches on blue wrapping a short distance from sterile items.

Connecting the drainage bottle: Be sure to keep the end of the catheter and access tip clean.



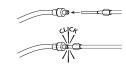
⚠ Close roller clamp completely by rolling the wheel on roller clamp toward bottle. Remove access tip cover by twisting and pulling gently. Set access tip on blue wrapping.



5 Take valve cap off catheter.



6 Clean around valve opening with first alcohol pad.

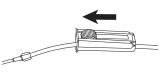


7 Insert access tip into catheter valve.

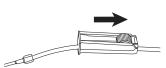
Draining fluid:Do not drain more than 1,000 mL from your chest or 2,000 mL from your abdomen at any one time.



Remove support clip from top of drainage bottle and push down T plunger.



O To begin draining, roll the wheel on the roller clamp away from vacuum bottle.



1 Nhen finished draining, completely close the roller clamp by rolling the wheel on roller clamp toward bottle Final steps and disposal you have any questions or concerns, contact your doctor or nurse.



11 Pull access tip out of the valve; set drainage line down.



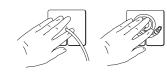
1 2 Clean around the valve opening with second alcohol pad.



13 Place new cap on catheter valve and twist it until it snaps into its locked position.



1 1 Clean around catheter site with third alcohol pad.



15 Place foam catheter pad around catheter and wind catheter on top of pad. Cover catheter with gauze pads.



self-adhesive dressing over gauze pads.



17 Push down T plunger and move the plunger in a circular motion to further puncture foil seal so fluid can be poured out.



Remove flexible cap and drainage line from bottle.

Empty bottle into toilet. Place bottle in a plastic bag, seal tightly and discard.



These instructions are to be used only as a supplemental reference. Read the *Instructions for Use* that come with the drainage kits and watch the drainage video for more detailed instructions.

BD, Vernon Hills, IL, 60061, U.S.

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#### PATIENT GUIDE

Please consult the Aspira System or Drainage System Patient Guide for warnings, cautions and full instructions for use.

#### STEP 1: Prepare the Workspace

- 1 Clear space on table.
- 2 Clean surface with disinfecting wipe.
- 3 Wash hands with warm soapy water. Scrub for one full minute. Dry with a clean towel.
- Place supplies on cleaned area.

#### For additional information, please visit: www.myaspira.com www.merit.com

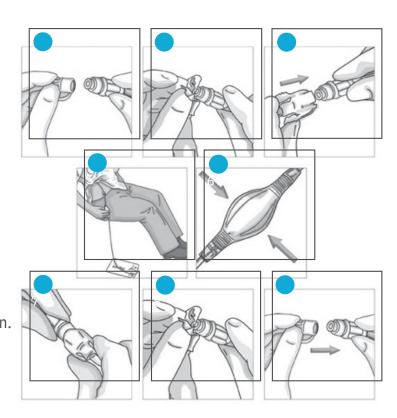
#### Remove dressing only if:

- 1. It has been one week since you changed the dressing.
- 2. Your doctor recommended changing the dressing at every drainage. - OR -
  - 3. The area under the dressing is moist.

#### STEP 2: Drainage Procedure

NOTE: If the catheter is taped to the skin with tape strips, remove the tape. NOTE: If the catheter is damaged, place the slide clamp (in kit) between the catheter damage and the exit site. Contact your doctor.

- 1 Peel open the pouch with the drainage kit.
- 2 Remove and discard valve cap from catheter valve.
- Wipe catheter valve with alcohol pad.
- 4 Connect drainage line to catheter. You should hear or feel a click when secure.
- 5 Place bag on a flat surface at least arms length below chest or abdomen.
- 6 Squeeze pump one time. Let fluid drain until bag is full or fluid stops flowing. If fluid does not flow, refer to troubleshooting section.
- When fluid stops or bag fills to 1,000 mL from the chest or from the abdomen, disconnect drainage line from catheter.
- Wipe catheter valve with new alcohol pad.
- Place new valve cap on catheter valve.



### QUICK REFERENCE



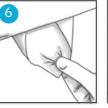
#### STEP 3: Dressing Procedure

If it is not time to change your dressing, tape the catheter to the skin and skip to step 4.

NOTE: Look at the exit site and skin around it. If you notice any redness, swelling, oozing or have pain at the exit site, finish draining and call your doctor.

- 1 Peel open the pouch with the dressing supplies.
- 2 Remove the gloves from the pouch.
- 3 Pick up glove at cuff end and place on hand.
- 4 Pick up second glove with the gloved hand and place it on your other hand.
- 5 Remove sterile sheet from the pouch and place it on prepared workspace.
- 6 Lay sheet flat so you can see dressing supplies.
- Clean skin around exit site with alcohol pad. NOTE: Make sure exit site and skin are dry before pr oceeding.
- 8 Place split gauze pad on skin around catheter.







Dress Weekly

over catheter and gauze.

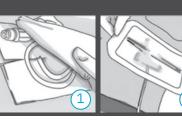
catheter. Place clear dressing

1 Place gauze on top of



#### Dress At Every Drainage

- 1 Coil catheter on top of split gauze pad. Place gauze on top of the catheter.
- 2 Place clear dressing over catheter and gauze.

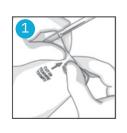




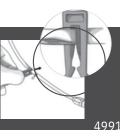


#### STEP 4: Discarding Fluid and Used Supplies

- 1 Over the toilet, tear or cut the corner of drainage bag.
- 2 Empty fluid into toilet.
- 3 Throw drainage bag and used supplies into trash. Wash
- 4 hands.



NOTE: If the catheter is damaged, place slide clamp provided in drainage kit between the damage and catheter exit site. Call your doctor.



#### A CLINICIAN'S TROUBLESHOOTING GUIDE

Obtain a physician order to flush the catheter with saline per facility protocol. A 10 mL syringe and the Apsira Luer Adapter (Product code 4992305) can be used to facilitate flushing.

If you have any additional questions, please contact the 24/7 dedicated Aspira Medical Services & Support line at 833–3ASPIRA (327–7472).

#### Is There Pain During Fluid Drainage?

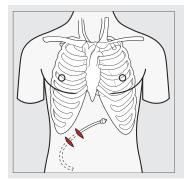
Pain during fluid drainage can be caused by draining fluid too quickly. If the patient experiences pain while draining, raise the bag to slow the flow. Disconnect the bag to stop the flow.

#### Is There Fluid Leakage Around Catheter Site

Fluid leakage around the catheter site can be caused by one of the following:

Catheter displacement with fenestration in the tunnel **Datble**ter exchange is required. When inserting a new catheter, make sure all of the catheter fenestrations are inside the pleural or peritoneal space during insertion (verify by checking for the barium stripe using fluoroscopy or X-ray) Avoid excessive tension on the external catheter segment or valve. Secure catheter to prevent excessive tension.

Peritoneal catheter is tunneled downward rather than santaine and medial to the insertion site exchange is required. Refer to tunneling instructions below as well as the Aspira Peritoneal Drainage Catheter Instructions for Use to ensure proper tunneling technique.



Peritoneal Catheter **Tunneling Technique** Make an incision at the desired catheter insertion site. Make another incision superior and medial to the insertion site at a distance selected for tunnel length (generally 5-8 cm)

Clogged drainage holes and fluid buildup in chest or abdomen. Refer to Is Slow or No Drainage, Solution #3: Occlusion management section on the next column.

Excessive pressure in the abdomen due to fluid or internal organ enlargement leading to back pressure and fluid !@akpessing the frequency of drainage may help to alleviate pressure. Please call Medical Services & Support at 833-327-7472 if you suspect that this is the cause.

#### Is There Slow or No Drainage?

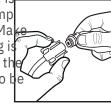
Drainage volumes can vary over time. If a patient is unable to drain as much fluid as expected, this could be due to several reasons, including:

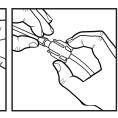
- Decrease in fluid buildup;
- Loculations (pockets of fluid located away from drainage
- Catheter or valve partially or totally occluded.

If there is reason to believe that the patient has fluid to drain but has been unsuccessful at doing so, please follow these steps below.

#### Solution #1: Check drainage line connections

Ensure that there is no kinking or clamp on the catheter. Mak sure drainage bag is positioned below the area that needs to b drained.





Check the connection of the catheter valve to the bag. Disconnect and reconnect the bag. You should hear an audible click indicating that the connection is secure.

Gently squeeze the pump again. If this does not work, try to reposition the patient. The presence of loculations (pockets of fluid located away from drainage holes) around the fenestrations of the catheter can cause drainage to be reduced at certain positions.

#### Solution #2: Use new drainage kit or alternative drainage method

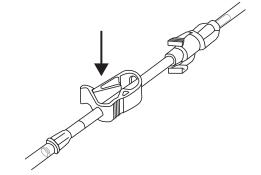
If drainage flow does not initiate after attempting Solution #1, try using a new drainage kit, making sure that the connection is secure by listening for audible click. Alternatively, low suction can be used by connecting the Aspira Universal Tubing Adapter. If this does not work, proceed to Solution #3

#### Solution #3: Occlusion management

If Solution #1 and #2 are unsuccessful, this could indicate presence of an occlusion, protein buildup, or a clot.

#### C AUTION:

• Flush saline through adapter prior to connecting to the catheter to eliminate presence of air.



When using the

Luer Adapter or

Universal Tubing Adapter to access the catheter, the adapter must be attached to the syringe or wall suction line prior to attachment to the catheter.

• The Luer Adapter and Universal Tubing Adapter create an open pathway into or out of the catheter; to close the pathway when not in use, tighten pinch clamp.

Prior to flushing, you can attempt to aspirate the catheter with a partially filled syringe. This may loosen or free any debris that may be in the valve.

Do not flush against resistance. Resistance to flushing may indicate an occlusion. In this case, you can replace the valve using an Aspira Valve Repair Kit (product code 4992306), following the instructions below.

If repairing the valve does not work, this could indicate that the fenestrations on the distal end of the catheter have been occluded by protein buildup or a fibrin sheath. A physician can flush thrombolytic agent per facility protocol using the Apsira Luer Adapter (product code 4992305).

#### Aspira Valve Replacement Instructions

Do not connect the Aspira valve to other manufacturer's drainage systems, as this will result in damage of the valve.

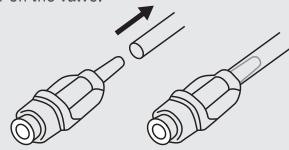
**CAUTION:** Be careful not to dislodge the catheter during the valve replacement process.

NOTE: The catheter should be clamped between the valve and the exit site. Ensure that the catheter is clamped and remains clamped throughout the repair procedure.

1. Inspect the catheter to determine where it needs to be cut off. Do not cut at this time.

NOTE: Be sure to retain as much of the external catheter length as possible.

- 2. Make sure the catheter is clamped at least 5 cm distal to the cutoff point.
- 3. Clean the catheter with alcohol and/or povidone iodine wipes, where it will be cut off.
- 4. Using sterile scissors, cut the catheter at a 90° angle distal to the existing valve.
- 5. Advance the catheter over the new valve stem past the shoulder on the valve.



NOTE: If the catheter and new valve are connected and then disconnected, trim the proximal end of the catheter and attach a new valve to ensure a secure connection.

- 6. Remove slide clamp from catheter.
- 7. Place a new cap over the catheter valve.