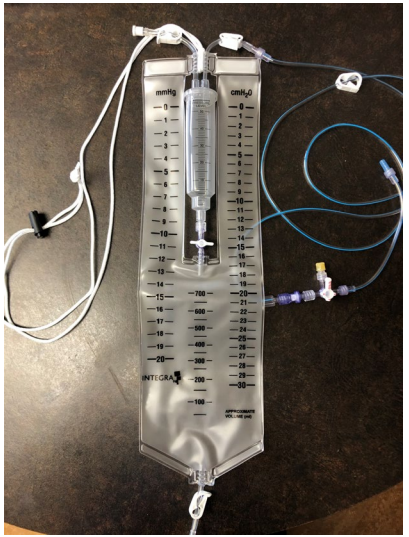
Ventricular Drainage System
Model NL850-500V



Tips for Set-up

Refer to the Instructions for Use to review complete set up and procedures.

- DISCLAIMER: The pressure transducer is shown for training purposes only. Follow the manufacturers Instructions for Use and the hospital protocols for specific application.

- DISCLAIMER: The “external anatomical reference point” for the Foramen of Monro is per the hospital policy and procedure.

- INDICATION: The major indication for external drainage is the management of hydrocephalic shunt infections. If an internal shunt is not indicated, treatment of other cerebral conditions such as preoperative or postoperative pressure monitoring may also require external drainage of CSF to control increased intercranial pressure.

- CONTRAINDICATIONS: This device is not designed, sold, or intended for use except as indicated.

- lntegra makes no claim for or representation as to the performance characteristics of this product if it is used in conjunction with components of other manufacturers.

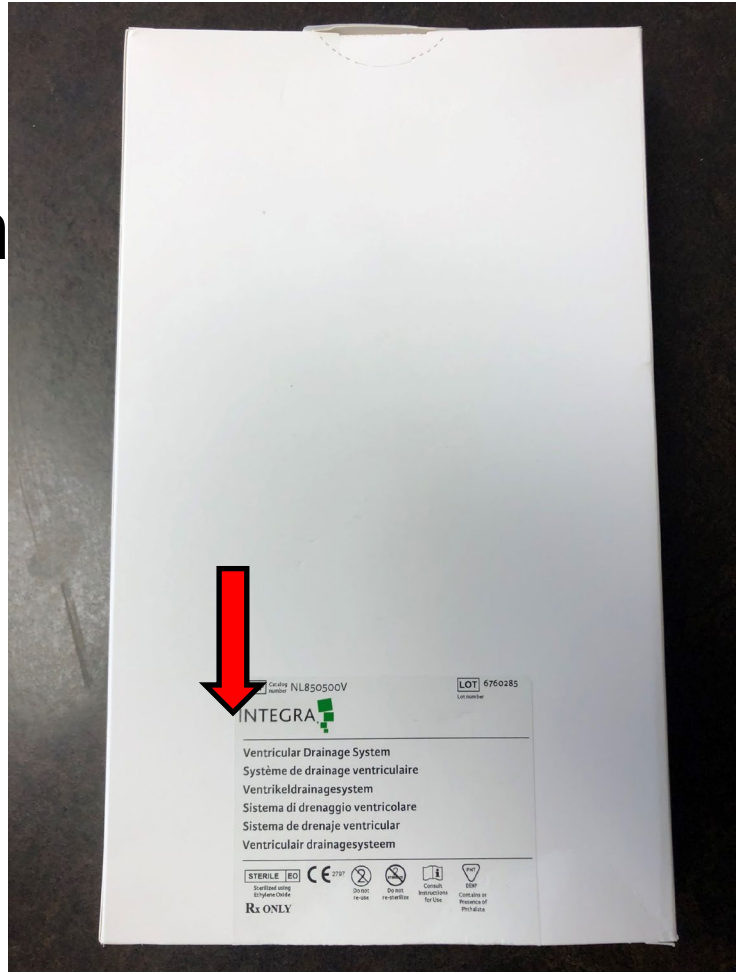
Objectives:

- What to gather
- Important parts of the system
- Attachment of an external transducer *(The pressure transducer is shown for training purposes only. Follow the manufacturers Instructions for Use and Local hospital protocols for specific application).*
- Priming the system
- Attaching to an IV pole
- Leveling the system
- Adjusting the burette to pressure ordered
- Changing the bag
- CSF sampling
- Transport of patient

NL850-500V
Ventricular Drainage System

You will need:

- Ventricular Drainage System
- “Flushless” External Transducer (not included)
- IV pole
- “Preservative Free” NS (not included)



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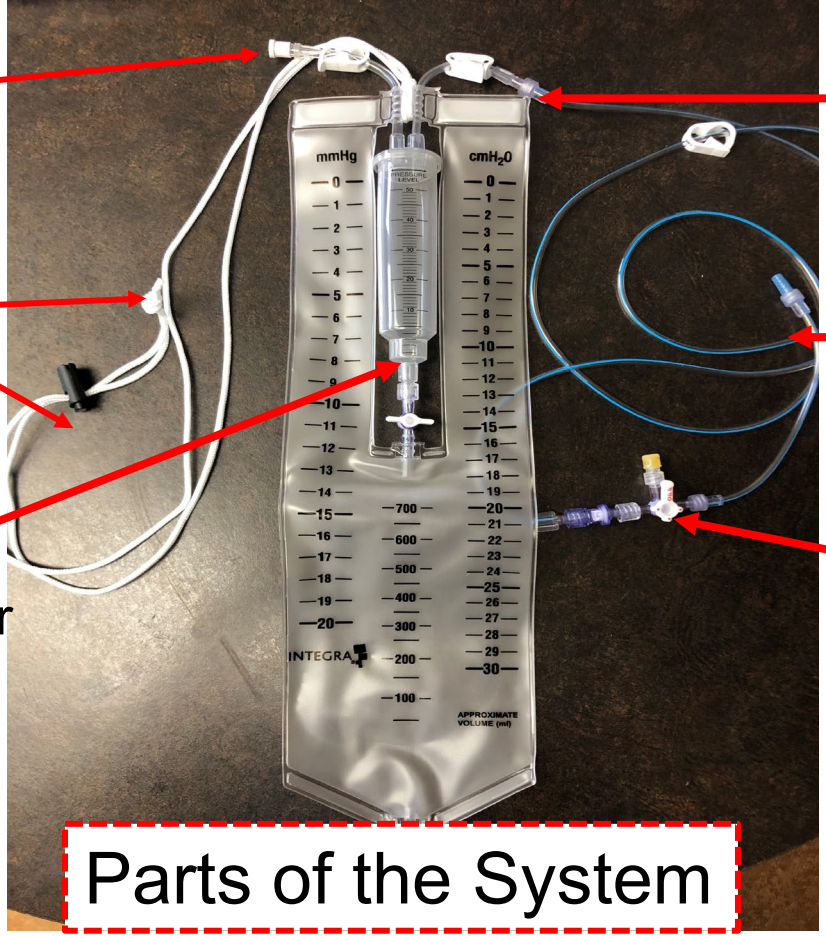


Air vent

Cord with cord lock – used to suspend from IV pole

Burette – CSF collection chamber

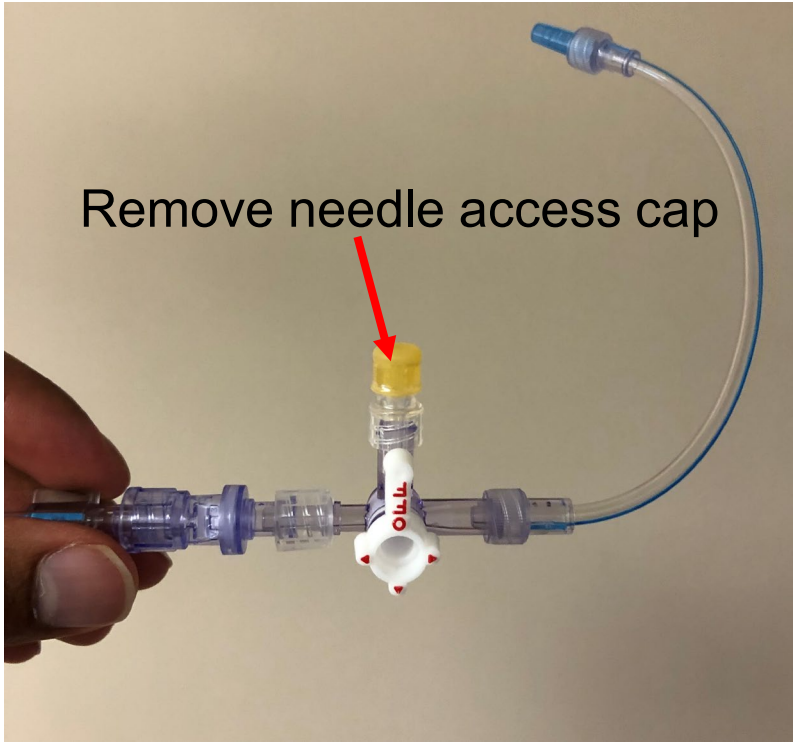
Connection to enable bag change

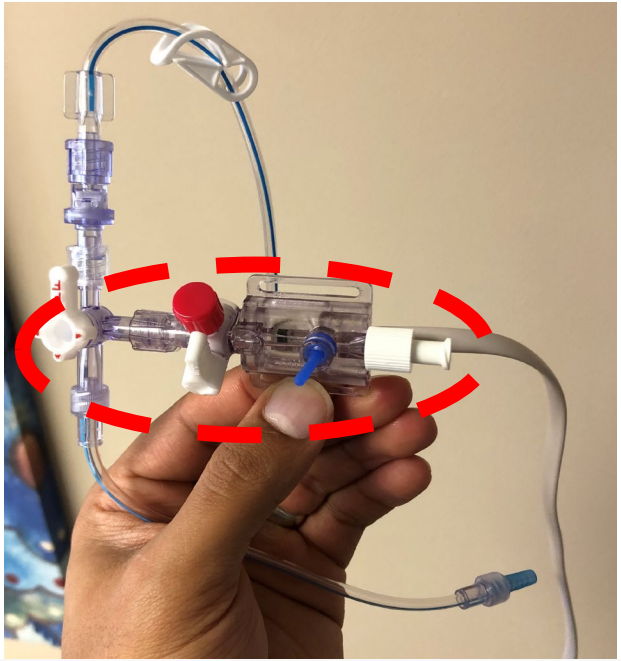
Connection to attach to EVD catheter

External transducer attaches here (not attached)

Parts of the System

Attachment of an external transducer





Attach “flushless” external transducer

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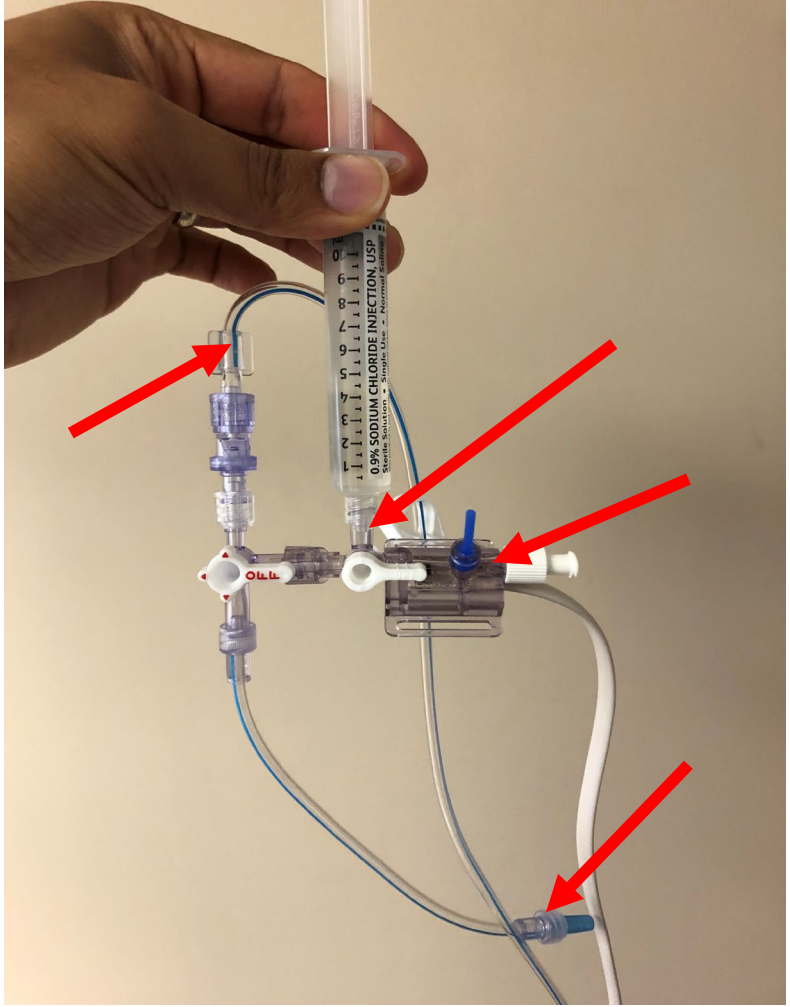

Priming the System

- Prime the system prior to connection to the ventricular catheter using aseptic technique
- Using aseptic technique, flush the entire system: to the patient end, through the transducer, and up to the burette
- Ensure there are **NO** air bubbles

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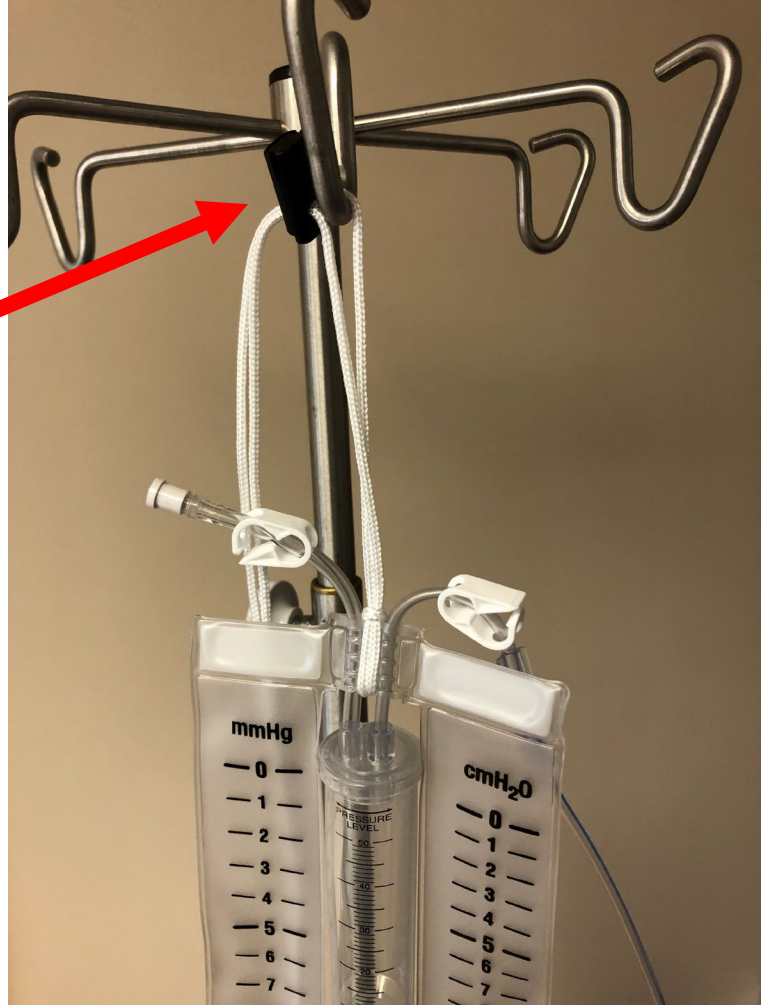
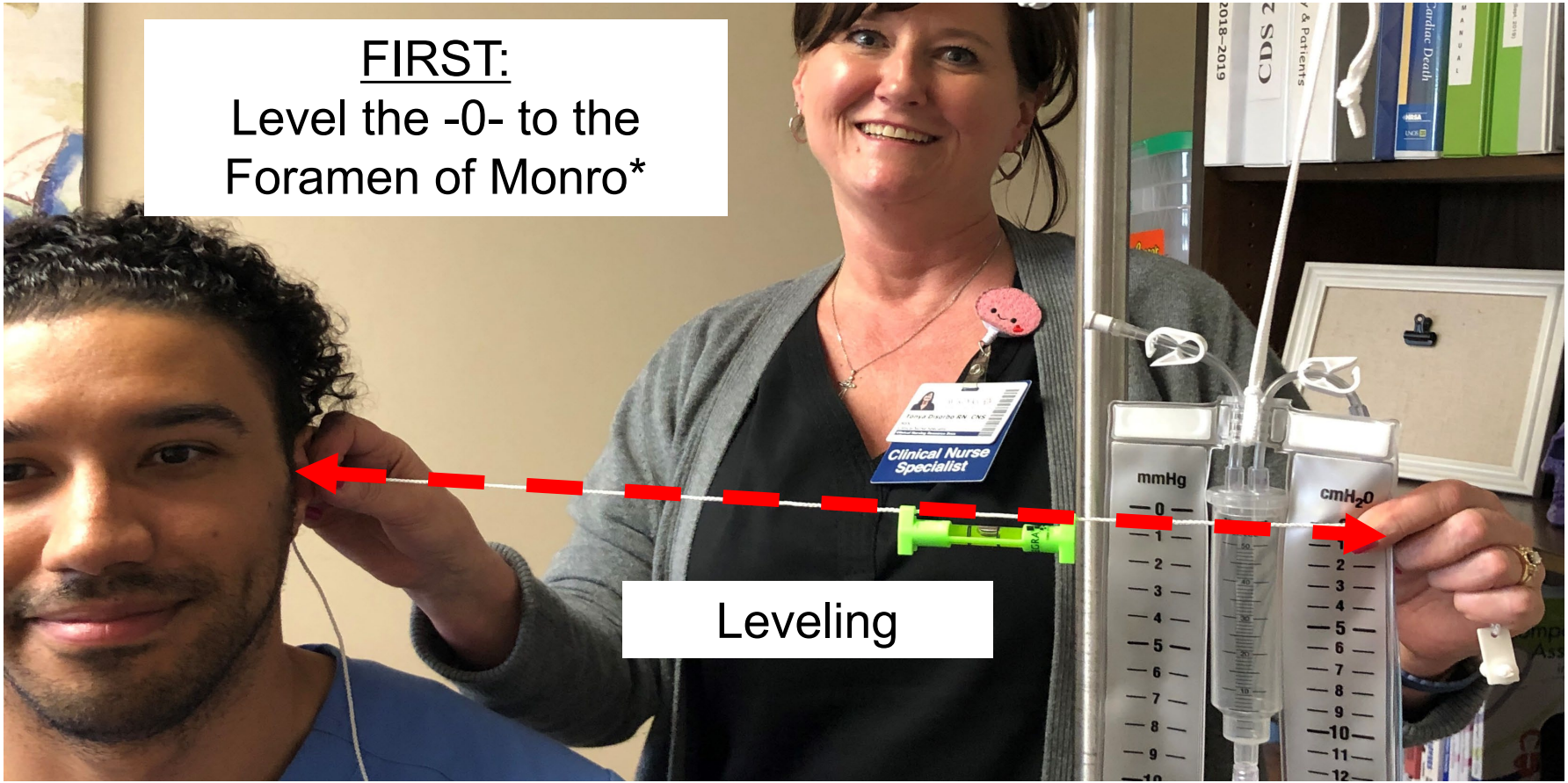
Suspend the drainage bag to the IV pole using the cord lock





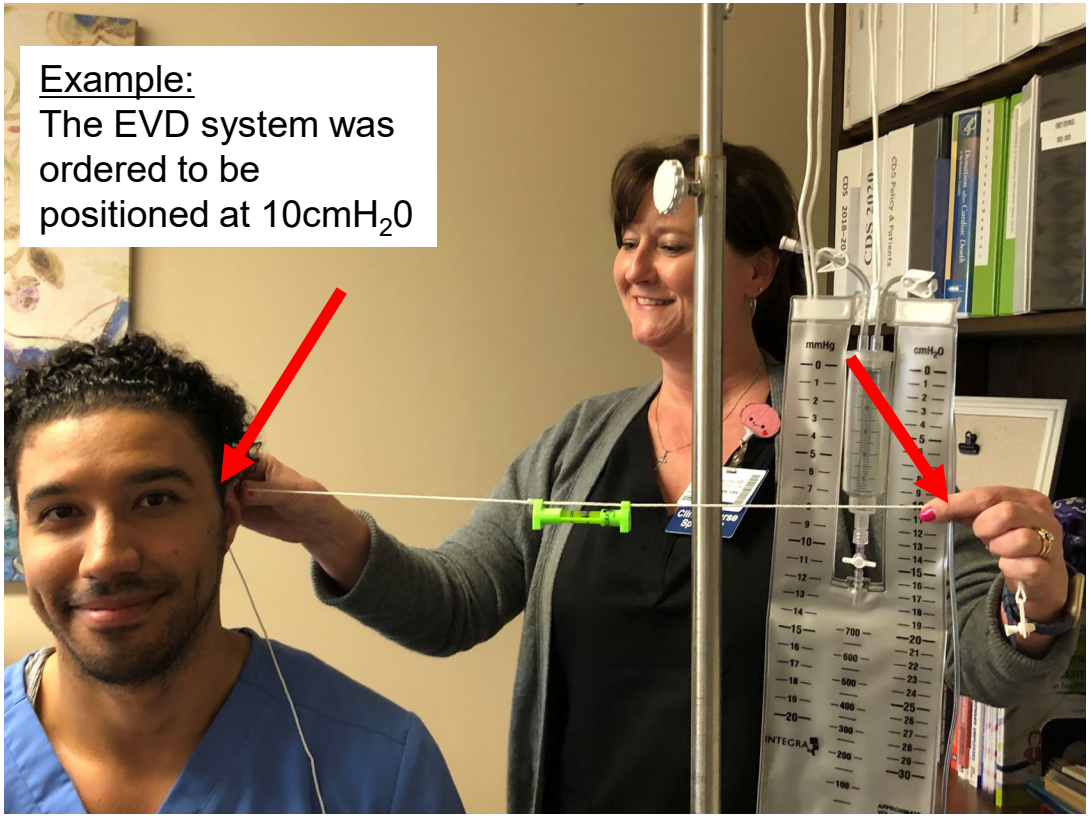
*The “external anatomical reference point” for the Foramen of Monro is per the hospital policy and procedure.

Adjustment of bag

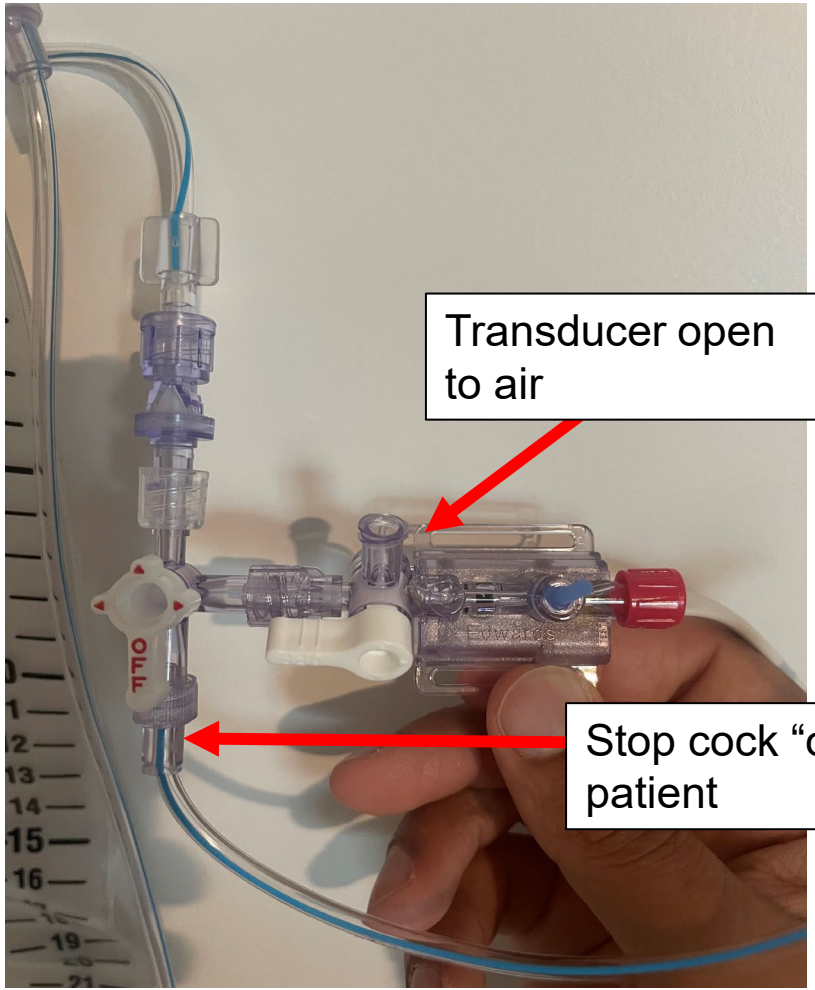
- To adjust the EVD system to the level of the pressure set by the physician:
  - first level the -0- to the Foramen of Monro
  - then adjust the bag to the desired pressure level

- The “external anatomical reference point” for the Foramen of Monro is per the hospital policy and procedure

WARNING: Proper placement of the collection bag is critical, as its height controls the ICP. It is essential that neither the patient nor the collection bag be raised or lowered accidentally. Height changes should only be made by qualified personnel on the orders of the physician. CSF will not drain from the ventricles if the clear plastic tubing is occluded. If shunting is the primary function, reopen the tube clamps promptly after bag replacement and resume CSF drainage to maintain the intracranial pressure.



Zeroing of the External Transducer



Turn the stopcock “off to the patient” and “open the transducer to air”

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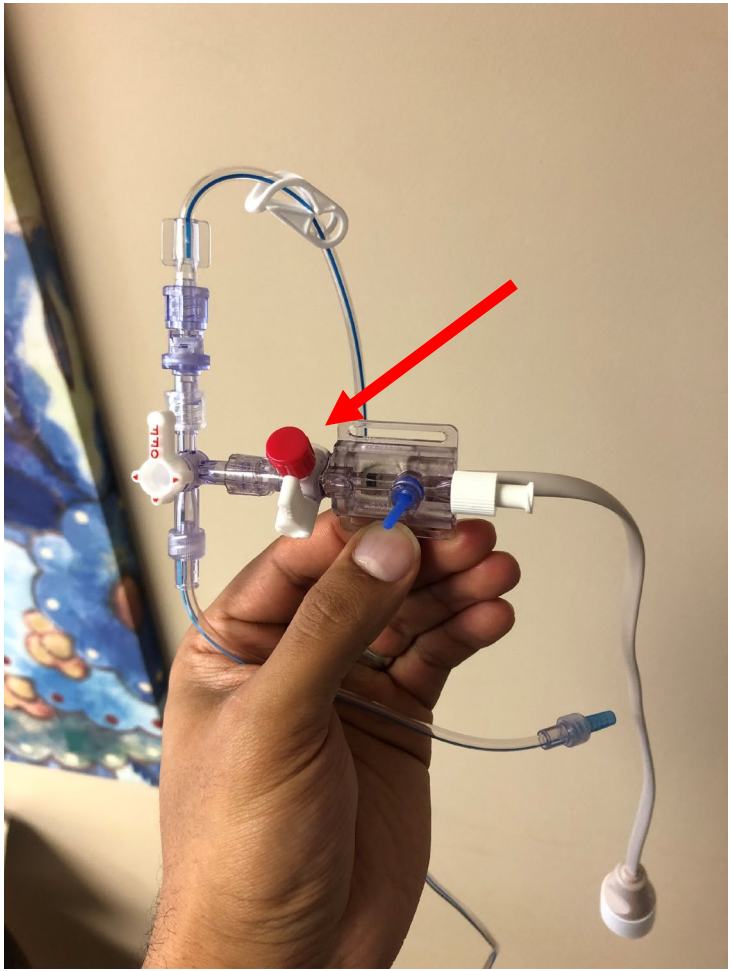

Zeroing of the External Transducer

Replace the dead-end cap per hospital protocol

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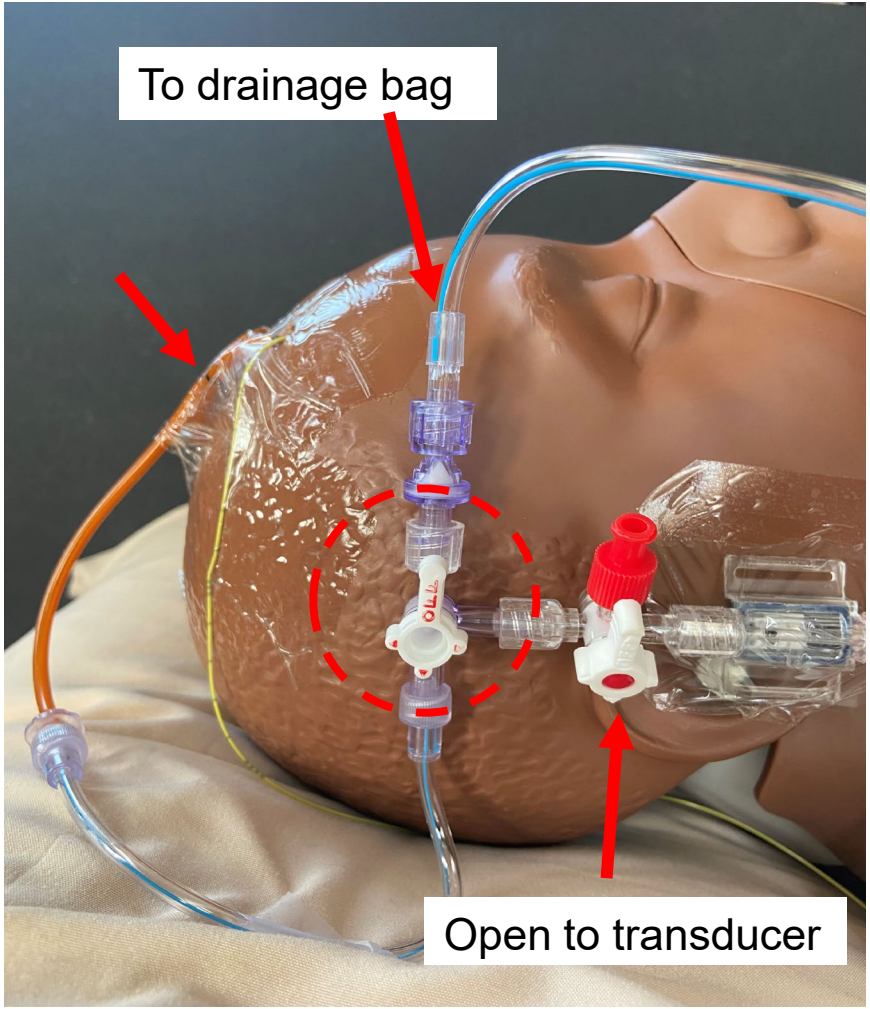
Measuring ICP- off to drain



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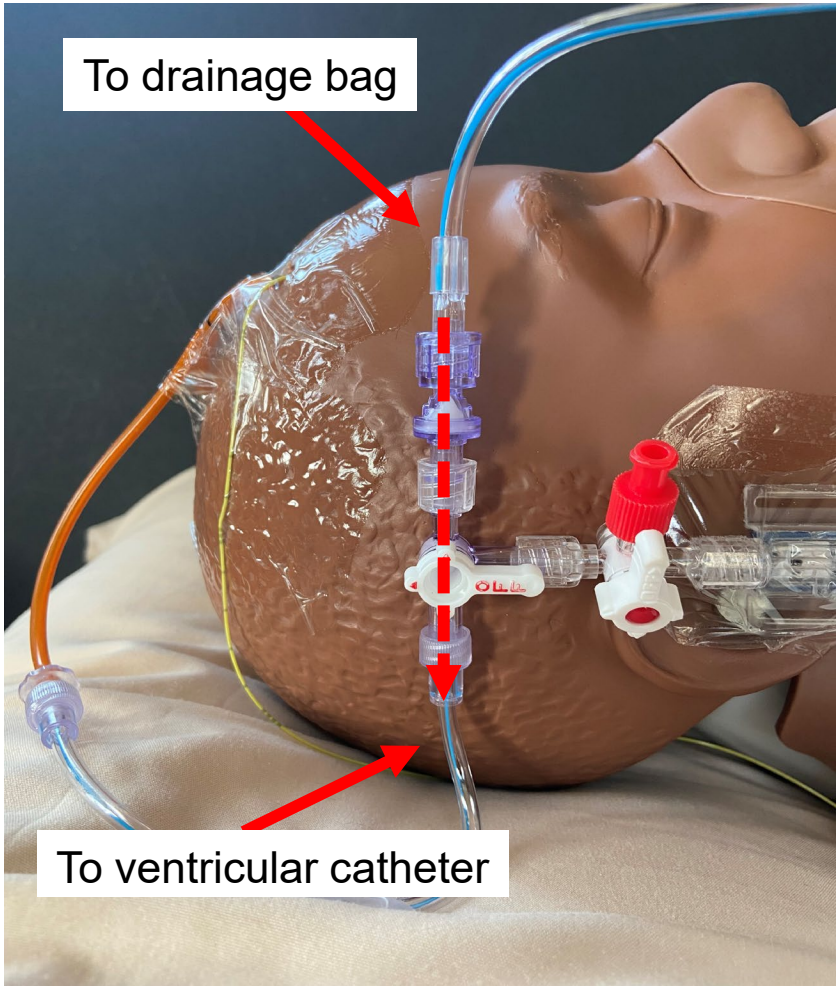
Draining CSF
(<u>not</u> transducing ICP)



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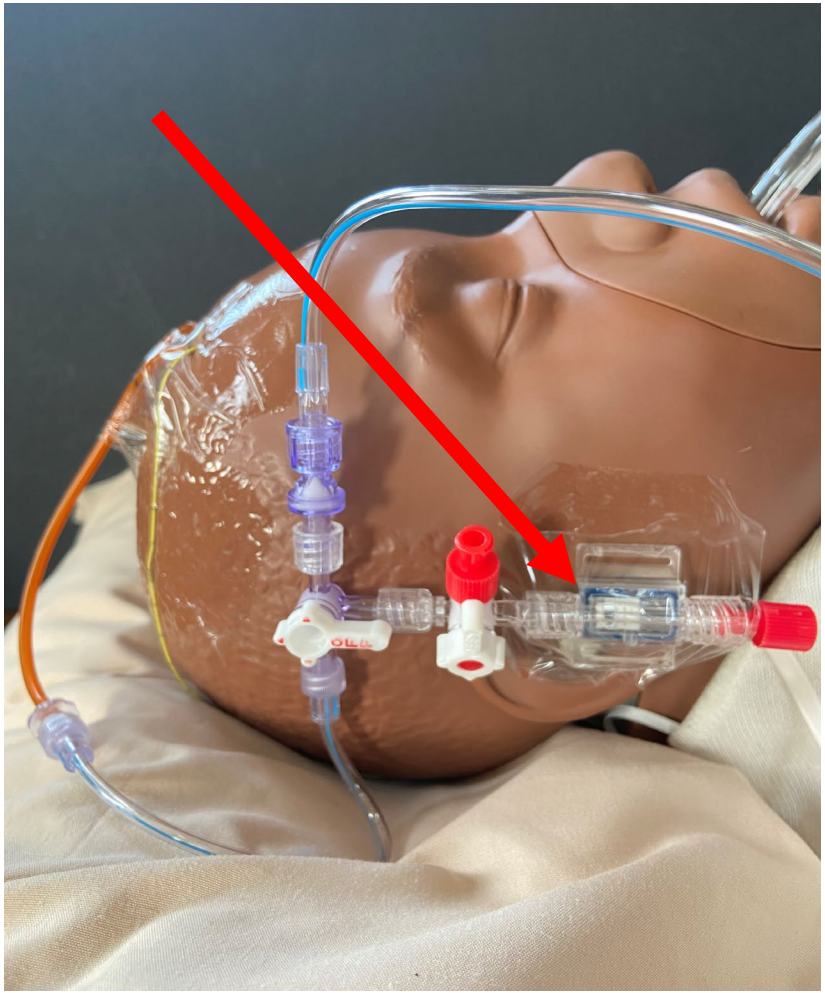

When transducing ICP
<u>always</u> position/level the
external transducer
to the Foramen of Monro

The “external anatomical
landmark” that references
the Foramen of Monro
is per the hospital’s policy and
procedure

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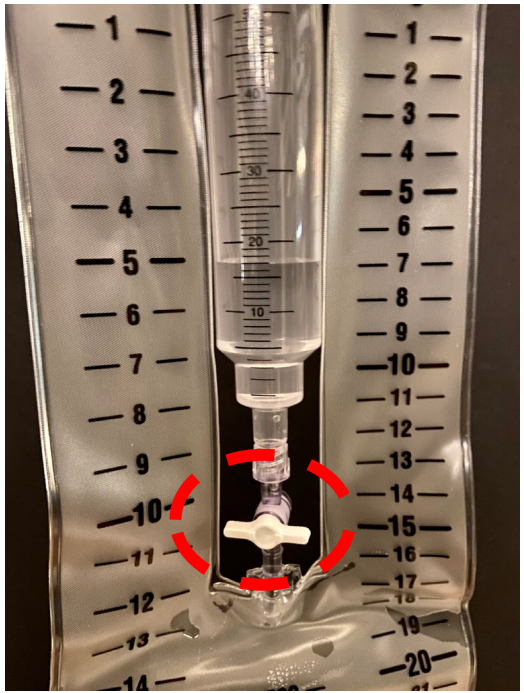
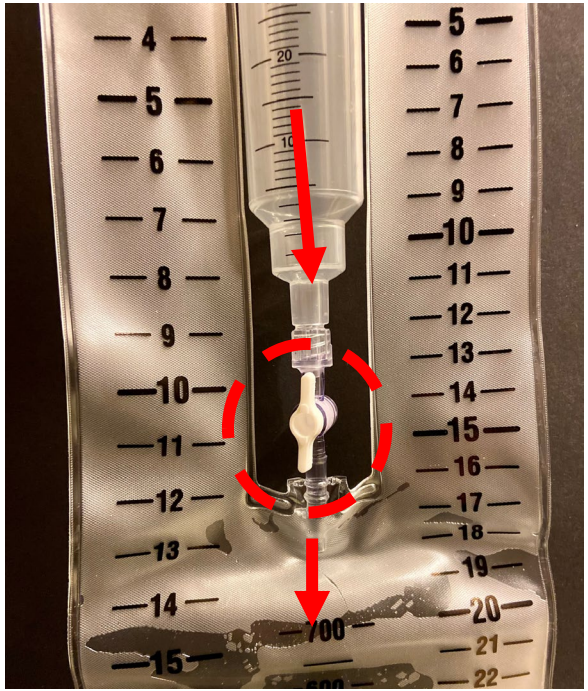
Assessing CSF Drainage ***NOTE position of 2-way stopcock

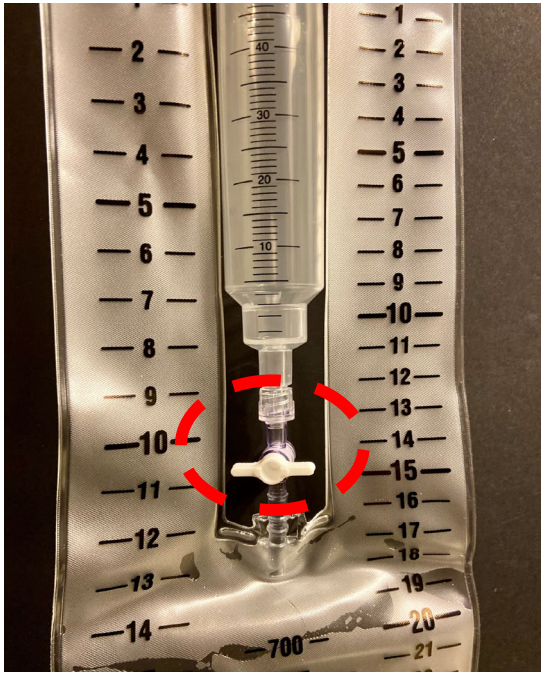
CSF accumulates into burette hourly



Drain CSF into bag



CSF reaccumulates into the burette

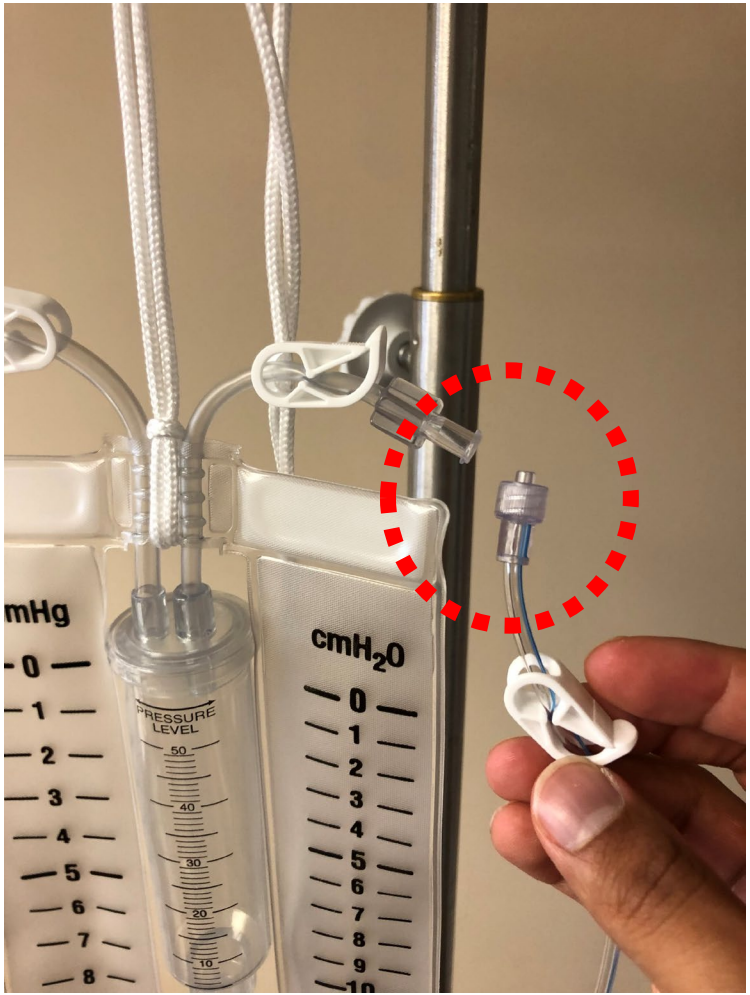


Changing the Bag

When the bag becomes full:

- clamp off patient line
- disconnect the bag from the patient line
- replace with a new sterile bag

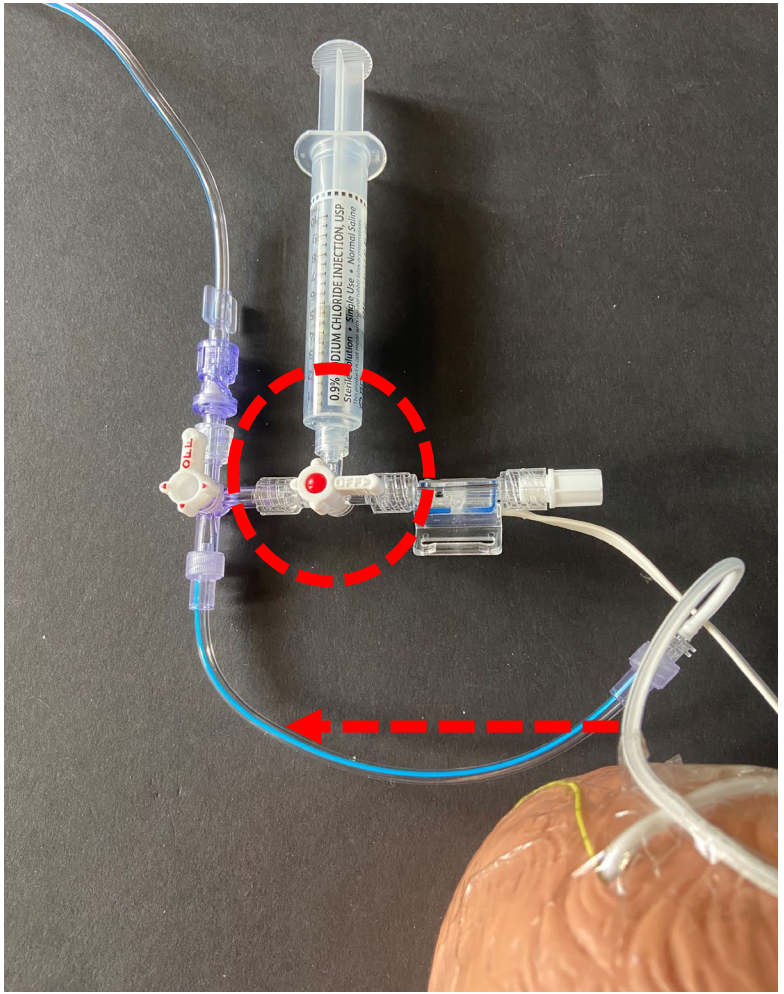
***use aseptic technique when changing the bag



CSF sampling

CSF can be sampled via the 3-way stopcock that is attached to the external transducer (not included).

For procedure, follow your hospital's policy and procedure



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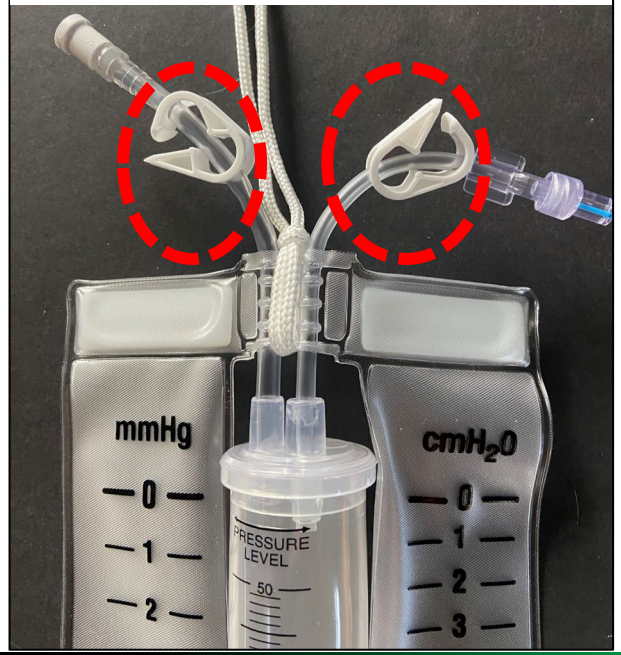
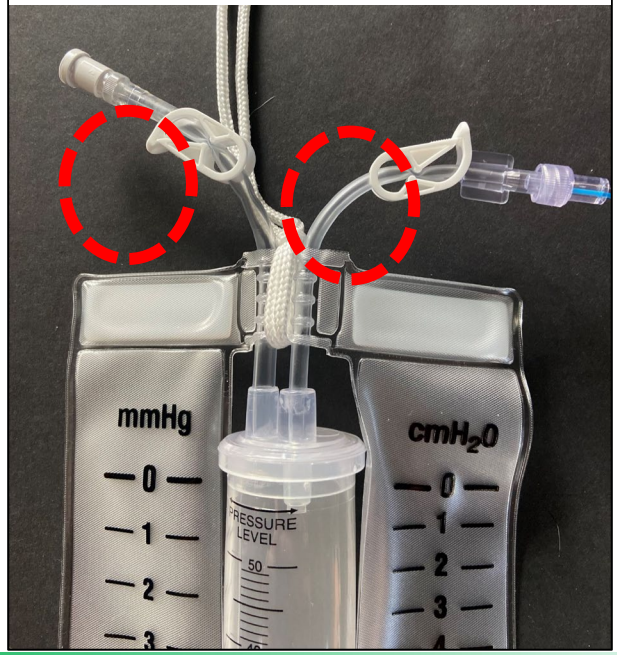
Patient transport… clamp the air vent and clamp off the drain

Open vent and draining position



Clamped vent and off to drain position



WARNINGS

- Hydrocephalic patients with cerebrospinal fluid drainage systems must be kept under close observation for signs and symptoms of changing intracranial pressure due to shunt failure. These signs and symptoms may vary from patient to patient. Increasing intracranial pressure is characterized by headache, vomiting, irritability, listlessness, drowsiness, other signs of deterioration of consciousness and nuchal rigidity. In the infant, increased scalp tensions at the anterior fontanelle and congestion of scalp veins will be noted.
- Proper placement of the collection bag is critical, as its height controls the ICP. It is essential that neither the patient nor the collection bag be raised or lowered accidentally. Height changes should only be made by qualified personnel on the orders of the physician. CSF will not drain from the ventricles if the clear plastic tubing is occluded. If shunting is the primary function, reopen the tube clamps promptly after bag replacement and resume CSF drainage to maintain the intracranial pressure.
- Physicians who infuse drugs into this device must be assured of the compatibility of the drugs, with polycarbonate, polyvinyl chloride, polyethylene, ABS and acrylic. Some change in the drug potency may occur when in contact with these materials.

PRECAUTIONS

- This product is intended for single use only. Reuse of the device can result in contamination and/or disease transmission. This product should not be resterilized. Resterilization may affect the performance characteristics and the safety of the device.
- Prior to surgery, all prospective patients or their representatives should be informed of the possible complications associated with this product.
- When the ICP monitoring port of the ventricular catheter is not in use, the protective cap must be in place to help prevent contamination. Aseptically clean all injection/ sampling ports before using.
- This device is intended for SINGLE USE ONLY; DO NOT RESTERILIZE.
- lntegra makes no claim for or representation as to the performance characteristics of this product if it is used in conjunction with components of other manufacturers.
- Contact with collodion remover, acetone and/or any other incompatible substances with product material may affect the integrity of the device, causing cracks and potential leaks on plastic components.

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