
Ventricular Catheter Insertion and Care

Purpose:

To drain cerebrospinal fluid, monitor and/or decrease intracranial pressure by insertion of a catheter into the ventricle.

Equipment: Cranial access kit
External ventriculostomy drainage system
Ventriculostomy catheter
Sterile gowns, gloves, caps, masks
ICP monitoring transducer
Xylocaine 1% with Epinephrine 1:100,000
Clippers
Sterile saline syringe
Hibiclens brushes
Chloraprep brushes
Chlorohexidine patch
Dressing
Ordered Conscious Sedation medication

Procedure:

1. Identify patient and explain procedure.
2. Perform Time Out
3. Provide analgesic sedation for the patient
4. Wash hands using Hibiclens scrub brushes.
5. Assist physician with positioning of patient. If patient's head needs to be held, it must be held under the sterile drape.
6. Physician inserting the ventriculostomy must wear surgical gown, gloves, cap, and mask. All other persons must wear cap and mask.
7. Open cranial access kit and ventriculostomy catheter using sterile technique.
8. Prepare pressure monitoring set-up and drainage system:
 - a. Open the drainage system, maintaining sterility.
 - b. Open the pressure transducer and dead end cap onto the sterile field.
 - c. Open the saline syringe onto the sterile field
 - d. Put on sterile gloves, hat and mask.
 - e. Attach the transducer to the port on the left side of the system.
RN flushes transducer portion and MD flushes drain portion
 - f. When physician is ready, assist in connecting to catheter.
 - g. Level at ear (external auditory meatus) and zero.
 - h. Confirm ICP parameters are ordered and set alarm parameters relative to the ICP goal set by the physician.
 - i. Places dead end cap on luer – lock port on EVD tubing.
9. Care of patient with ventriculostomy:
 - a. Clean site with Chloraprep and cover with nonocclusive dressing.

Dressing to be changed every 4 days and prn. MD to be notified when dressing is dampened. This could signal leakage within the system.

- b. Check pressure level each time patient's position is changed and adjust drainage system level according to physician's order.
- c. Zero q shift and prn.
- d. Record ICP, CPP, and output every hour.
- e. Drainage bag should be changed when full. This can be done by the nurse. Swab the tubing where bag connects to system with chlorohexidine or betadine. Don sterile gloves and mask. Turn stopcock off to the sterile system. Clamp the full bag and remove it, replacing it with the empty bag.
- f. Cerebrospinal fluid samples can only be drawn by the neurosurgery resident or staff neurosurgeon. Medical students or nurses cannot draw CSF samples.
- g. If the physician orders clamping of the drain, drain should be clamped at the stopcock nearest the transducer to allow for ICP monitoring.
- h. Dressing changes are performed in accordance with Infection Control Guideline 16.0

http://www.sh.lsuhs.edu/policies/policy_manuals_via_ms_word/infection/IC%2016.0.pdf

at least every 96 hours. Dressing changes are performed more often if dressing becomes soiled or saturated.

10. Removal of the ICP Monitoring Device:

The ICP monitoring device must be removed by an LSUHSC staff physician or resident when the patient's condition has improved, treatment course no longer depends on the information from the monitor, the readings are no longer accurate, or the risks of prolonged monitoring outweigh the benefits(e.g. infection).

1. Procedure is done at the bedside with personnel wearing masks and sterile gloves.
2. The patient is to be in supine position.
3. The dressing is to be removed and the site examined for evidence of CSF leakage and infection.
4. The site should be cleaned with an antiseptic solution like chloraprep.
5. The physician removes the device.
6. A skin staple or suture may be placed with or without the use of a local anesthetic depending on the placement of the incision and the extent of closure.
7. Incision care based on individual physician order.

References:

1. Bigatello, L. (2006). Critical Care Handbook of the Massachusetts General Hospital.
2. Chulay, M. & Burns, S. (2006). AACN: Essentials of Critical Care Nursing.
3. Infection Control Guidelines IC 16.0
4. Wiegand, D & Carlson, K. (2005). AACN: Procedure Manual for Critical Care.

