

**PROTOCOL FOR: Hydrocephalus: Care of Infant with (Before and After Intervention)**

**DESIRED PATIENT**

- OUTCOMES:**
1. Adverse neurologic sequelae will be minimized.
  2. Skin integrity will be maintained.
  3. Pain and discomfort will be minimized through the use of supportive measures and analgesics when indicated.
  4. Device-associated infection will not occur.
  5. Exposure to latex will be minimized when multiple operative procedures are anticipated. (For example, hydrocephalus in association with myelomeningocele.)

**CLINICAL  
ASSESSMENT AND**

- CARE:**
1. Head circumferences will be obtained at the same time each day by a consistent person and documented on the flowsheet.
    - a. *Report increased head circumference or sunken fontanelle (may indicate too much CSF draining via shunt).*
  2. Monitor for and report signs and symptoms of increased intracranial pressure:
    - a. Bulging, tense fontanelle
    - b. Vomiting, poor feeding
    - c. Lethargy - may progress to stupor or coma
    - d. Irritability/restlessness
    - e. Temperature fluctuations
    - f. Sunsetting eyes
    - g. Seizures
    - h. High pitched shrill cry
    - i. Change in vital signs (elevated systolic BP, decreased pulse, decreased and irregular respirations)
    - j. Pupillary changes
  3. Provide supportive measures for behavior changes and signs associated with increased intracranial pressure. If unresponsive to supportive measures, initiate pain assessment every 4 hours.
    - a. Report pain score > 4.
    - b. Continue q 4 hour pain assessment while on analgesics and until pain score is < 4 for 24 hours without analgesics.

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4. Assess skin integrity on head to check for potential sites of skin breakdown.
5. Turn and reposition every 2 to 4 hours.
6. Place infant on decubitus pad.
7. Elevate head of bed to 30 to 40 degree angle (unless alternative position is recommended) until drainage device inserted.
8. Maintain adequate nutritive state.
9. Consult with developmental specialist to create plan for positioning and possible range of motion and alternative mattresses.
10. Sedatives are contraindicated in many cases because of increased intracranial pressure. If administered, the infant should be observed very closely for evidence of respiratory depression.
11. Initiate latex precautions when multiple invasive procedures are anticipated.

**CARE AFTER PLACEMENT OF DRAINAGE DEVICE:**

1. Vital signs and pain assessment per perioperative protocol.
2. Accurate I and O.
3. Assess incision for evidence of healing and signs of infection.
  - a. Report presence of skin breakdown, swelling, erythema, tenderness, purulent drainage from incision.
4. Assess for and report additional signs of infection - fever, apnea or feeding intolerance.
5. For VP shunt:
  - a. Perform abdominal assessment with girth minimum of every 4 hours immediately postoperatively then every 8 hours throughout hospitalization.
    - 1) *Report signs and symptoms of ileus.*
  - b. Do not position on shunt until totally healed. Keep bed flat until otherwise ordered.
  - c. Do not pump shunt.
6. For Ventriculostomy:
  - a. Assess amount clarity and nature of CSF drainage.
    - 1) Report any change in pattern or color of CSF.
    - 2) Document events associated with changes in CSF output.

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- b. Maintain infant's body position as ordered, maintaining correct distance between the ventriculostomy and the drainage receptacle.
7. For internal reservoir:
- a. Assess level of consciousness and signs suggestive of increased intracranial pressure before and after reservoir is tapped by a neurosurgeon.
  - b. Complete a progress note each time the reservoir is tapped, documenting date, time, name of the person performing the tap and infant's tolerance (including need for medications) of the procedure and changes in neurologic assessment noted.

**PATIENT**

**TEACHING:** Refer to Teaching Plan: V-P Shunt

Parent Handout: V-P Shunts/IVH/Hydrocephalus

**APPROVAL:** Nursing Standards Committee

**EFFECTIVE DATE:** 4/08

**REVISION DATES:** 9/92, 12/94, 5/97, 5/99, 10/00, 10/03, 1/05 (as Hydrocephalus: Care of Infant with (Prior to Surgical Intervention))

9/92, 1/95 ICC, 4/97, 5/99, 10/00, 10/01, 10/03 (as V-P Shunt)

3/09