Tikrit University

College of Nursing

Clinical Nursing Sciences

Third Year - 2023-2024

Child Health Nursing

[redacted]

(Hydrocephalus)

by:

Professor of Pediatrics Ashoor R Sarhat

Hydrocephalus

Excessive CSF accumulation in ventricles of the brain,

Due to

1. interference with normal CSF circulation.
2. interference with CSF absorption

As excess CSF accumulates in the ventricular system,

1. the ventricles become dilated and the brain is compressed against the skull. Skull enlargement if the sutures are open
2. Signs and symptoms of increased ICP if the sutures are fused.

Types of:

1. **Non-communicating hydrocephalus (Obstructive). caused by**
   - ❖ faulty fetal development,
   - ❖ infection,
   - ❖ tumor,
   - ❖ Blood clot after intracranial hemorrhage.

2. **Communicating hydrocephalus (faulty CSF absorption. It caused by**

- ❖ surgical complication,
- ❖ adhesions,
- ❖ meningeal hemorrhage.

The signs and symptoms of hydrocephalus vary with the age of the child.

In infants,

1. rapidly increasing head circumference
2. widening and bulging of the fontanels
3. distended scalp veins
4. thin, shiny, fragile-looking scalp skin
5. underdeveloped neck muscles.
6. setting sun sign

7. high-pitched, shrill cry
8. abnormal muscle tone of the legs
9. irritability
10. anorexia
11. projectile vomiting.

Diagnostic tests for hydrocephalus include:

1. daily measurement of head circumference
2. skull X-rays, which show thinning of the skull with separation of sutures and widening of the fontanels
3. CT scan & MRI,

Complications of hydrocephalus include:

1. mental retardation
2. impaired motor function
3. vision loss.
4. The most serious complication associated with shunt placement is **infection** and **shunt malfunction**

Treatment

VP shunt or tube

1. Removal of the obstruction (surgically) bypass the obstruction and drain the fluid from the ventricles to an area where it can be reabsorbed) with insertion of a **VP shunt or tube**, which leads from the ventricles, out of the skull, and passes under the skin to the peritoneal cavity.
2. Ventroatrial shunt, which drains the fluid from the ventricles to the right atrium of the heart.

Preoperative and postoperative nursing interventions for the child with hydrocephalus.

1. Preoperative care involves careful monitoring:
2. Head circumference measured daily,
3. watching for signs of increased ICP.
4. Assess respiratory status every 4 hours or more often if necessary.
5. Measure intake and output of all fluids.
6. Monitor nutritional status and provide small feedings because the child is prone to vomiting.

Postoperative care,

1. Put child in flat position on non-operative side to prevent rapid CSF drainage and pressure on the valves.

2. If CSF is drained too rapidly, the child is at risk for subdural hematoma caused by tears in the vessels secondary to the cerebral cortex pulling away from the dura.
3. Nursing care focus on careful observation of the **child's status**
4. Educating family how to care for the child with the shunt in place
5. Observe for signs of shunt infection, like

☒ fever,

☒ increased heart

☒ increased respiratory rates,

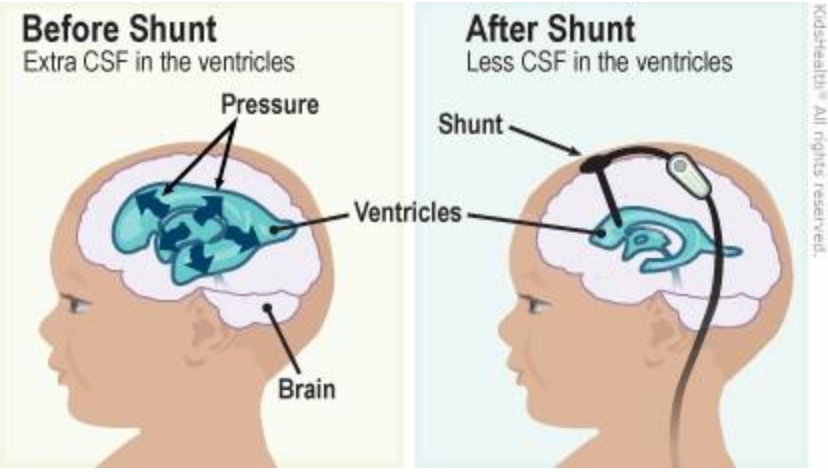
☒ poor feeding or vomiting,

☒ altered mental status,

☒ seizures, and redness along the shunt tract.

6. Observe for abdominal distention or discomfort because shunt placement may cause a **paralytic ileus or peritonitis**.
7. Measure head circumference daily; any increase of ≥0.5 cm is significant and should be reported to the doctor.
8. Explain all procedures to the parents.
9. Educate family signs and symptoms of shunt infection and malfunction.
10. Educate family on normal growth and development in their child
11. Avoid child be overprotection but should avoid contact sports.

An infant with Hydrocephalus



Treatment of Hydrocephalus