

# OMMAYA RESERVOIR

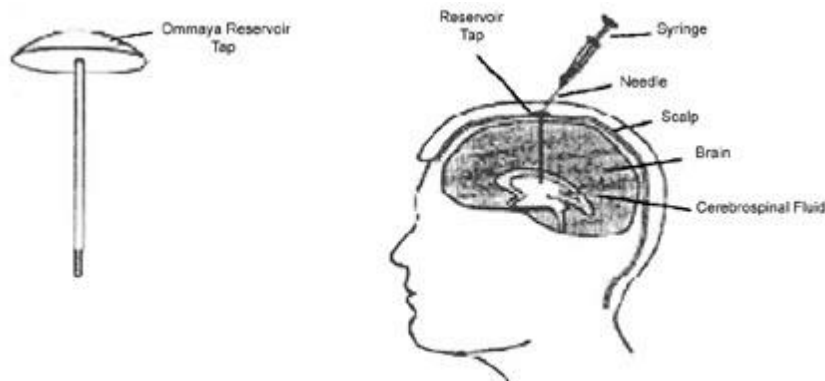
## Post Op Care and Tapping

### Indications

- To decrease intra-cranial pressure occurring secondary to hydrocephalus

### Key points

- The reservoir is a tunneled catheter attached to a subcutaneous reservoir.
- There are two parts to the Ommaya; a small plastic dome-like container or port that is put under the scalp and a small catheter coming from the dome. The tip of the tube is placed into the ventricle.
- The Ommaya reservoir permits drainage of CSF, by “tapping” of the reservoir, every day or less (frequency is determined by neurosurgery based on patient’s clinical condition and ultrasound imaging).
- Usually this reservoir is inserted for babies too small to have a ventriculo-peritoneal (VP) shunt and who need >5 days of CSF drainage.
- It is important to position the baby's head on the opposite side of the Ommaya reservoir to avoid skin breakdown over the hardware.



- Do not place IV lines or perform phlebotomy in scalp of a patient with an Ommaya reservoir (increased risk of infection of reservoir).

### Post-Operative Assessment

#### ○ Neuro Vital Signs (NVS) and Vital Signs

##### ➤ What?

- Assess pupil size, reaction to light
- Assess motor skills of arms and legs
- Assess level of consciousness. Always mark the best response
- Verbal response is impossible to assess therefore write C if baby cries, T for trach or E for ET tube
- Under motor response assess response to pain. Best response in neonate is flexion to pain.
- HR, RR, O<sub>2</sub> sat with FiO<sub>2</sub>, BP, T

➤ When?

- Q 15 min X4 (for 1 hr.)
- Q 30 min X4 (for 2 hrs.)
- Q 1H X 12 hrs.
- Then progress NVS to Q 2H X 12 hrs.; continue VS as per hemodynamic/ventilatory status and NICU protocol.
- Then progress NVS to Q 4H until discharge; VS should be continued as per hemodynamic/ventilatory status and NICU protocol.
- Do NVS more frequently if any deterioration occurs. Report any major changes to doctor

○ Head circumference

➤ When?

- Q 24 h (or as ordered)

○ Monitor for signs and symptoms of increased intracranial pressure (ICP)

- Irritability with manipulation
- Lethargy
- Decrease feeding interest
- Vomiting
- High pitching cry
- Full, tensed anterior fontanel
- Distended scalp veins
- Downward deviation of eyes (sunset eyes)
- Pupils inequality and sluggish respond to light
- Respiratory depression
- Apnea
- Systolic hypertension
- Widening of pulse pressure
- Bradycardia
- Tachycardia

○ Monitor for signs and symptoms of dehydration

- Sunken fontanel, diminished skin turgor and dryness of mucous membranes (remember, the patient's CSF is not being reabsorbed).

○ Signs of infection

- Temperature instability (fever or inability to maintain temp)
- Lethargy
- Apneas and bradys
- Change in FIO2 demands
- Change in perfusion
- Oozing, redness, discharge or drainage at the incision site

○ Dressing

- The dressing (if any) will be removed by the neurosurgeon soon after the surgery. Usually, an Ommaya reservoir is not covered with any dressing.

## Procedure - Tapping

### ○ Why?

- Done to remove CSF in cases of hydrocephalus and increase intracranial pressure
- Done to obtain CSF for diagnostic studies (cultures, protein, cell count, metabolic panel)
- On rare occasions, medications (antibiotics, chemotherapy) can be administered via the reservoir as well

### ○ When?

- As ordered by neurosurgery, based on neurological assessment and imaging.

### ○ Who?

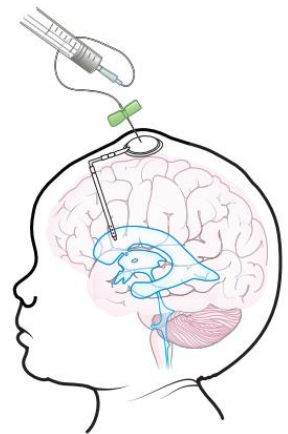
- Neurosurgeon

### ○ Material

- 5 or 10 mL syringe
- 1 #25g butterfly needle
- 4 Disinfecting swabs as per protocol (chlorhexidine 2% alone vs chlorhexidine 0.5% and alcohol 70%)
- 3 sterile plastic CSF specimen tubes

### ○ How?

1. Gather equipment and wash hands
2. Administer analgesia as ordered (including sucrose if appropriate, as per protocol) and provide comfort measures (bundling or containment, pacifier)
3. Be prepared with bag and mask at bedside. If baby is known for apneas and bradycardias during the procedure, consider pre-oxygenation.
4. Hold baby's head while physician performs procedure.



### ○ What to look for?

- **VS and NVS** should be monitored throughout procedure and afterwards, as per hemodynamic/ventilatory status and NICU protocol. Be aware that **apnea and bradycardia** sometimes occur during or after a tap.
- If serial taps are being done, **serum sodium** should be monitored (at risk for hyponatremia).
- **Site of tap** should be monitored for CSF leakage, bleeding and signs of infection. Inform physician if present. Send **specimens to microbiology** (routine culture) and biochemistry (protein, glucose, cell count & differential) as ordered. Specimens should be sent in order of draw (1 = culture, 2 = protein & glucose, 3 = cell count & differential).