

## Ventricular Tap

### Aim of Procedure

- To safely 'tap' the ventricle using strict aseptic, non-touch technique (ANTT);
  - to treat increased intracranial pressure
  - to collect cerebrospinal fluid (CSF) samples

A ventricular tap should be performed by medical staff deemed competent in the procedure and is a surgical aseptic procedure.

### Equipment

Appropriate skin prep and razor

Gown, mask and surgical hat

Dressing pack

Green Venflon

Specimen bottles – appropriate bottles for specific tests

Sterile equipment for pressure monitoring- either a manometer or a infusion tubing with tape measure

### Procedure

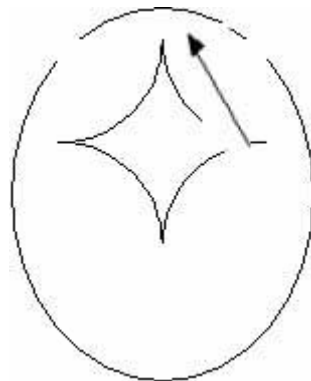
Preparation:

- If procedure performed for treating increased intracranial pressure then an USS of brain should be performed on the day of the procedure to ascertain Ventricular Indices and these should be plotted.
- Ensure that parents are aware that the procedure is to be performed, the reasons why and risks involved. Verbal consent should be obtained.
- Continuous monitoring of ECG and SA02.
- Use the procedural hypothermia guidance to maintain normothermia.
- Ensure resuscitation equipment is to hand.
- Consider use of either MBM or sucrose prior to procedure and non-nutritive sucking during procedure.
- Shave the anterior part of the head to well behind the posterior angle of the anterior fontanelle (AF).
- Swaddle the infant well. To avoid movement, an assistant must hold the head firmly between their palms with the infant supine and horizontal.
- Both members of staff carrying out the procedure should scrub and don hat, mask, gown and two pairs of gloves.

## Accessing the ventricle:

- The procedure is performed as an aseptic technique with surgical skin prep for 3 minutes and requires a nurse to hold the baby, a member of staff to access the device and an additional member of staff to aid with pressure measurement and sample collection
  - Assemble manometer if using
  - Locate and clean the skin over the desired entry site with cleaning solution.
    - 1st clean: Clockwise over VAD for 30 seconds followed by 30 seconds drying time.
    - 2nd clean: Anticlockwise cleaning for 30 seconds followed by 30 seconds drying time.
    - 3rd clean: Clockwise over VAD for 30 seconds followed by 30 seconds drying time.
  - Remove your outer pair of gloves
  - A wide bore needle such as a green Venflon should be used as the CSF is usually very proteinaceous and may block a smaller instrument.
  - Insert the Venflon through the lateral angle of the AF and advance slowly in the direction of the inner canthus of the ipsilateral eye (see figure below). The needle should be inserted smoothly, without a change in direction, to minimise trauma to the brain:

### Direction of needle during ventricular tap procedure.



- CSF will fill the reservoir at the end of the Venflon when the ventricle is entered.
- Remove the needle and stabilize the plastic tubing of the Venflon with one hand.
- The assistant should carefully attach the manometer or tubing both held vertically. The CSF will flow upwards into the manometer/tubing.
- Wait for the CSF to rise within the manometer/tubing. This may take some minutes. Allow the infant to settle if crying, and the pressure to stabilize before taking a reading. When it has reached its maximum level take note of the height of the column in cm, using the tape measure if needed.
- Remove the manometer/tubing, and keep the end sterile. Drain CSF into a sterile container and for various samples – usually C&S, microscopy, glucose and protein.
- If the aim of the procedure is to reduce pressure then it is usual to remove up to 10ml/kg of CSF during one episode.
- The CSF pressure should be re-checked at the end of the procedure by reattaching the manometer/tubing and reading the height of the column. Ideally it should be below 5cm.

- Remove Venflon carefully once desired amount of CSF has been removed.
- Apply a plaster to the site

Post-procedure management:

- Record procedure in relevant section in Badger.
- Update parents.
- Ensure prompt sending of specimens to labs.