

PARKLAND HEALTH & HOSPITAL SYSTEM
Nursing Services

Section: Neuro-Related
Written Date: 04-09

Procedure #: NSG 32-35
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Distribution: Nursing Procedure Manual

**INSERTION OF THE CAMINO FOR INTRACRANIAL PRESSURE
MONITORING**

PRACTICE

STATEMENT: Qualified nursing personnel will assist the provider with insertion of the intracranial parachymal bolt for monitoring intracranial pressure (ICP).

PURPOSE: To monitor ICP via a fiberoptic catheter.

EQUIPMENT:

- Camino Monitor: **MPM-1**
- Camino preamp cable
- IV pole or beside table
- Camino Monitor ICP Adapter Cable
- **Intracranial pressure monitoring kit (Camino ICP Catheter):**
Pressure/Transducer-Tipped Catheter)
- Gowns
- Sterile gloves x 2 pairs
- Sterile sheet/drapes
- Sterile towels
- Surgical masks
- Surgical cap
- 4 x 4's gauze sponges (10 pkg)
- Non sterile gloves (1 pair)
- Weck blade or razor
- Antiseptic solution (betadine)
- Benzoin swabs
- Central line dressing change kit
- 5-ml syringe and 25-gauge needle (to draw up Lidocaine)
- Cranial access kit:
 - 2.0 & 3.0 silk
 - Lidocaine with Epinephrine 1%
 - drill kit
- Extra occlusive dressing (if needed)

Contraindications may include: intracranial infection, coagulopathies, severe skull fractures, or conditions where CFS drainage is necessary.

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PROCEDURE:

Precaution: The Camino catheter is a fiberoptic catheter and if kinked or bent sharply could damage the delicate fibers in the catheter.

A. Assemble the monitor as follows:

1. Place monitor on IV pole or bedside table.
2. Plug in the monitor.

B. Verify monitor is ready for insertion: Initial setup

1. Turn on the MPM-1 by pressing the “**Start-Stop**” button on the front panel. The MPM-1 will display the “**Camino**” logo.

NOTE: If the provider would prefer to view the tracing without the fill-in display, press the “**Start-Stop**” button and the “**Scale**” button at the same time when initially powering up the monitor.

2. Connect the preamp cable to the MPM-1 monitor by inserting the 2 cable connectors in the appropriate receptacle on the side of the monitor (these should already be attached).
3. Check the display on the monitor for a system test. The display will change to **ICP** display

C. Camino catheter insertion

1. Identify the patient by verifying name and medical record number to armband, explain the procedure and precautions to patient and/or family and document education.
2. Ensure consent has been obtained and initiate and complete the “Time Out” procedure [Admin6-30](#)
3. Position the patient supine with head slightly elevated (30 - 45 degrees).
4. Provide analgesic and/or sedation for the patient as ordered by the physician. If sedation is required, follow documentation guidelines for moderate sedation monitoring. (Refer to Moderate Sedation/Analgesia [Admin 6-16](#)).
5. Provider will shave scalp site.

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6. Assist the provider, (if needed), with 10-minute antimicrobial scrub/solution or other anti-septic solution of insertion site. Allow to dry.
7. The provider places on surgical gown and don's new sterile gloves.
8. Nurse will assist with surgical drape placement and local anesthetic administration. (All personnel in the operative field must wear surgical cap and mask.)
9. Nurse opens cranial access kit using sterile technique.
10. Maintain patient's head position as the provider locates area for catheter placement (frontal lobe non-dominant hemisphere).
11. After the bolt is placed, the provider will connect the intracranial pressure catheter (sterile) to the MPM-1 preamp cable held by the nurse (non-sterile).
12. The inter-cranial pressure catheter must be zeroed **prior** to insertion in the bolt. After connecting the cable, check the display on the monitor to ensure that it reads "0 mmHg".

NOTE: If the display on the monitor does not read "0mmHg", the provider should use the tool from the kit to turn the zero adjustment on the bottom side of the transducer connector until the ICP pressure indicates "0 mmHg".

13. After zeroing the intracranial pressure catheter, the provider will place the catheter in the bolt. Then secure the compression cap on the bolt and then slide the strain relief sheath down over the catheter.

NOTE: The sheath helps prevent kinking and bending of the catheter, which can damage the fiberoptic.

D. Camino Monitor display:

1. Select the appropriate scale on the MPM-1 monitor after the catheter has been inserted. Push the "**Scale**" button on the front panel to determine scale options.
2. Press the "**SYS/DIAS**" (systolic/diastolic) button to toggle between **CPP** (cerebral perfusion pressure), **ICP** (intracranial pressure), **ICT** (intracranial

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temperature) and **SYS, ICP, DIAS** displays. The machine will not calculate a CPP unless the patient has an a-line in place and have the monitors are slaved together.

3. Press the “**TREND**” button to display the mean ICP and CPP values recorded during the preceding 12 hours.
4. Plug in MPM-1 monitor when possible. When the monitor is not in use, keep the MPM-1 plugged into a power source to maintain battery charge.

E. Documentation Post Procedure:

- Procedure performed by; name, year, and surgery service of resident and chief or staff assisting.
- Patient response to sedation and procedure. Reassess patient’s level of pain after procedure.
- Neurological examination (pre and post procedure)
- Date and time of procedure
- ICP waveform (crisp /dampened)
- Set alarm for high ICP
- Site of catheter placement
- Document ICP from MPM-1 Camino monitor
- Calculate CPP- Cerebral Perfusion Pressure $CPP = MAP - ICP$
- Description of CSF- if observed during procedure.

F. Bedside Monitor Connection: (If available)

1. Connect the MPM-1 monitor to the bedside monitor if values are to be displayed on the bedside monitor.
2. Press the “**CAL STEP**” button to calibrate or balance the bedside monitor to the MPM-1 monitor.
3. Each time the "**CAL STEP**" button is press the values advances to the next mmHg in the following series: 0, 20, 40, 100, 200, and back to 0.
4. To calibrate the bedside monitor, press and hold the “**CAL STEP**” at 0 mmHg and simultaneously press the zero on the bedside monitor.

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NOTE: Although this procedure is called "Cal/Step," its purpose is not calibration in the traditional sense. It ensures correlation between the fiberoptic microprocessor and the primary bedside monitoring system.

G. Troubleshooting the MPM-1 monitor

Problem	Troubleshooting
Display won't turn on	Verify power cord is plugged into an AC power source.
Monitor will not operate on battery	Connect to AC power for approximately 8-10 hours to fully charge battery.
Waveform is off the screen or too small	Press " SCALE " button to change scale.

Also see manufacturer's Instructions