**POLICY**

A lumbar puncture (LP) is a procedure that removes a small amount of CSF to diagnose or follow a CNS infection or removes a larger volume of CSF in the management of hydrocephalus.

**PROCEDURE**

**Gather Equipment**

1. Disposable lumbar puncture tray
2. Additional LP needles
3. Sterile gown and gloves for physician
4. Cap and mask for all personnel assisting with the procedure
5. Sterile towels
6. Dexidin 2 solution (2% chlorhexidine gluconate with 4% isopropyl alcohol solution)
7. 0.9% NS
8. Sterile normal saline or sterile water
9. Band-Aid (small round)
10. 3 or 4 CSF addressograph labels and requisitions (CSF chemistry, CSF cell count/diff, bacteriology and virology)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Minimize</strong> handling prior to the procedure.</td>
<td>Before any painful procedure, minimizing handling can cause heightened activity in nociceptive (pain) pathways and decrease discomfort.</td>
</tr>
<tr>
<td>2. <strong>Place</strong> Lumbar Puncture Cart at bedside.</td>
<td>To have all supplies easily accessible</td>
</tr>
<tr>
<td>3. <strong>Assemble</strong> Equipment.</td>
<td></td>
</tr>
<tr>
<td>4. <strong>Wash</strong> hands.</td>
<td></td>
</tr>
<tr>
<td>5. <strong>Cap</strong> and mask (both doctor &amp; nurse).</td>
<td></td>
</tr>
<tr>
<td>6. <strong>Assist</strong> physician to gown and glove</td>
<td></td>
</tr>
<tr>
<td>7. <strong>Open</strong> tray using aseptic technique.</td>
<td>An LP is a sterile procedure</td>
</tr>
</tbody>
</table>
| 8. **Add** to sterile tray  
  a. Dexidin 2 solution  
  b. sterile towels  
  normal saline | **Cleaning of the skin:**  
  Infants > 1000 grams: Cleanse with Dexidin 2 solution for 30 seconds. Dry for 60 seconds.  
  Infants < 1000 grams: Cleanse with Dexidin 2 solution for 30 seconds. Dry for 60 seconds.  
  Note: for these infants, remove the Dexidin residual on skin using sterile water after the lumbar puncture procedure is complete. |
| 9. **Open** incubator port holes for physician and/or assist with placement of sterile drapes. | |
### Procedure

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10. Provide</strong> warm towels for infant to maintain thermoregulation.</td>
<td></td>
</tr>
<tr>
<td><strong>11. Provide</strong> pain management</td>
<td>Local anaesthetic may be more uncomfortable than efficiently performed procedure. Offer pacifier and containment.</td>
</tr>
</tbody>
</table>
| **12. Position** and restrain infant as illustrated. | Left lateral decubitus position  
- Avoid neck flexion that leads to upper airway obstruction  
- Obtain assistance from RRT or RN with ventilated infants. Consider increasing Fi02  
Some physicians prefer the infant in a seated position because subarachnoid space is greater and airway protection is easier, the legs should be straightened. |
| **13. Ensure** site is aseptically prepared according to NICU P&P on cleaning protocol for skin: | Clean/prepare site with Dexidin solution using side-to-side motion for **30 seconds**. Allow to air dry for **60 seconds**.  
**For infants < 1000 gram:**  
Remove residual dexidin solution on skin using sterile normal saline or sterile water after lumbar puncture is complete. |
| **14. Monitor** infant for color changes and cardio-respiratory instability during the procedure. | Ensure the sterile drapes leave the infants face visible |
| **15. Assist** physician with CSF collection as needed. | For routine investigations 5-6 drops of CSF is needed in each tube  
Send tubes cleanest to clearest.  
1) Culture, 2) chemistry, 3) cell count, 4) virology |
| **16. Apply** pressure over the area with sterile gauze until any flow of CSF has stopped. | |
| **17. Apply** band-aid to site. | Leave dressing in place for at least 24 hours to avoid peak adherence and skin injury with removal.  
Ensure tubes are numbered to identify the sequence in which they were obtained.  
CSF specimens are taken to the lab by the |
Procedure | Notes
--- | ---
| nurse aid CSF removal to decrease ICP may require positioning the infant flat post procedure. Clarify with physician. | 

18. **Label** specimens. Complete requisitions and hand to nurse aide – do not leave in lab box.

19. **Position** infant to allow for monitoring of CSF leakage.

**DOCUMENTATION**

On Flow sheet
- Time
- Number of attempts
- Colour of CSF
- Name of physician
- Infants’ response to the procedure
- Lab tests requested

**REFERENCES**

