Considerations

- Why is an LP Being Done?
- Is this the Only Test Available?
- What Positive Information is Expected?
- Is the Patient Stable?

Indications

- Diagnostic
  - Infection
  - Subarachnoid Hemorrhage
  - Multiple Sclerosis
- Therapeutic
  - Neoplasm
- Incidental
  - Myelography
Contraindications

- Suspected Increase in ICP
- Suspected Spinal Cord Compression
- Infection at the Site of an LP
- Coagulopathy

Normal CSF Values

- Appears to be clear and colorless
- Opening Pressure ~ 120 mm/H₂O
- Protein level ~ 35 mg%
- Glucose level ~ 60 mg%
- (60% of serum glucose)
- Cells < 5 lymphocytic/monocytic

CSF Profile’s

<table>
<thead>
<tr>
<th></th>
<th>Pressure</th>
<th>Cells</th>
<th>Protein</th>
<th>Glucose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial Meningitis</td>
<td>↑</td>
<td>↑</td>
<td>↑ to ↑↑</td>
<td>↓↓↓</td>
</tr>
<tr>
<td>Viral Meningitis</td>
<td>N to ↑↑</td>
<td>↑ to ↑↑ (Mono’s)</td>
<td>↑</td>
<td>N</td>
</tr>
</tbody>
</table>
Proper Positioning (one)

Proper Positioning (two)

Preparation for the LP (one)
Preparation for the LP (two)

Injection of the skin

Proper Positioning (one)
Alternative Techniques

- Sitting Position
- Radiological Guidance
- Cisternal Tap
- Cervical Tap
- Lumbar Puncture Technique in Neonates and Infants

Complications

- Headache (Post LP Headache)
- Painful Paresthesias
- Persistent Pain or Paresthesias
- Spinal Hematoma
- Spinal Infection
- Herniation
CSF Leak (one)

CSF Leak (two)

Complications

- Headache
- Painful Paresthesias
- Persistent Pain or Paresthesias
- Spinal Hematoma
- Spinal Infection
- Herniation
Complications

- Headache
- Painful Paresthesias
- Persistent Pain or Paresthesias
- Spinal Hematoma or a Bloody Tap
- Spinal Infection
- Herniation

“Bloody Tap”

Complications

- Headache
- Painful Paresthesias
- Persistent Pain or Paresthesias
- Spinal Hematoma
- Spinal Infection
- Herniation
Complications

- Headache
- Painful Paresthesias
- Persistent Pain or Paresthesias
- Spinal Hematoma
- Spinal Infection
- Herniation (Brain not the disc)