Adult Lumbar Puncture

This practice algorithm has been specifically developed for MD Anderson using a multidisciplinary approach and taking into consideration circumstances particular to MD Anderson, including the following: MD Anderson’s specific patient population; MD Anderson’s services and structure; and MD Anderson’s clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physicians or other health care providers.

Note: This algorithm is used by Acute Care Procedures Team

Provider identifies patient need for lumbar puncture (LP) and pages proceduralist via on-call calendar

Provider/on-call proceduralist discussion:
- Completion of LP order set
- Reason for procedure
- Hemodynamic status
- Anticoagulation medication history

Proceduralist to proceed with LP:
- No more than 3 total needle stick attempts to obtain cerebrospinal fluid (CSF)
- For patients with significant obesity obscuring landmarks, consider use of ultrasound at bedside
- For high volume taps due to multiple studies:
  - Discuss with the appropriate lab minimal CSF needed to obtain studies
  - Patient must receive post-procedure care by remaining supine for appropriate amount of time, at least 30 minutes based on the amount of CSF removed
- Procedure must be logged in Mobile Procedure Team (MPT) SharePoint log

Proceduralist assessment of patient:
- CT or MRI head obtained within 30 days of procedure request. If new onset neuro changes at time of assessment, must obtain current head imaging to rule out worsening intracranial pathology
- Anatomical site limited to L3-4 and L4-5
- Coagulopathy:
  - INR greater than 1.5 and/or
  - Platelets less than 50 K/microliter

Finding of edema, intracranial shift, metastatic lesion, mass, bleed or hemorrhage on CT/MRI head

History of lumbosacral surgery with instrumentation

Coagulopathy (platelets less than 40 K/microliter and INR greater than 1.5)

Post-surgical scars, wounds, or drain over procedure site

Heart rate greater than 65 bpm, oxygen saturations greater than 90% (unless decreased oxygen saturation due to ascites) and systolic blood pressure greater than 100 mmHg

Coagulopathy Threshold

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Minimum platelet threshold</th>
<th>Threshold to infuse platelets during procedure</th>
<th>INR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumbar Puncture</td>
<td>50 K/microliter</td>
<td>40-50 K/microliter</td>
<td>1.5</td>
</tr>
</tbody>
</table>

1 Heart rate greater than 65 bpm, oxygen saturations greater than 90% (unless decreased oxygen saturation due to ascites) and systolic blood pressure greater than 100 mmHg
2 Refer to Peri-Procedure Management of Anticoagulants algorithm prior to procedure

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Approved by the Executive Committee of the Medical Staff on 07/25/2017

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**SUGGESTED READINGS**


This practice consensus algorithm is based on majority expert opinion of the Acute Care Services Department at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following members:

Ivy Bertram, PA-C
Wendy Garcia, BS
Susanna Girocco, PA-C
Tam Huynh, MD
Paul Mansfield, MD
Amy Pai, PharmD
Christina Perez
Kimberly Tripp, MBA, BSN, RN

DEVELOPMENT CREDITS

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