

2.5 LUMBAR PUNCTURE

Lumbar puncture is a procedure during which a needle is inserted into the subarachnoid space to obtain cerebrospinal fluid (CSF) for laboratory analysis to assess for acute or chronic central nervous system (CNS) disease processes. It is one of the more commonly performed bedside procedures in hospitalized patients and is often considered the cornerstone for the diagnosis of acute bacterial, fungal, and viral CNS infections and subarachnoid hemorrhage.¹ Hospitalists may suspect the presence of such conditions during their patient assessment and should use clinical expertise and evidence-based decision-making to determine whether a lumbar puncture is required in the diagnosis and management of the patient's illness.

KNOWLEDGE

Hospitalists should be able to:

- Describe the anatomy of the spinal column and the spinal cord and identify anatomic landmarks to guide proper entry point for lumbar puncture.
- Explain the indications and contraindications for lumbar puncture including potential risks, benefits, and complications.
- List the indications for CNS imaging before lumbar puncture.
- Explain the appropriate diagnostic tests necessary to characterize CSF on the basis of the clinical presentation.
- Recognize the indications for specialty consultation, which may include interventional radiology, infectious disease, or neurology.

SKILLS

Hospitalists should be able to:

- Assess patients for increased risk of complications and use appropriate preventive measures.
- Select the necessary equipment to perform a lumbar puncture at the bedside.
- Demonstrate the optimal patient positioning to safely perform a lumbar puncture.
- Demonstrate proficiency in performance of lumbar puncture.
- Perform a time-out before the procedure.
- Use appropriate sterile technique and necessary precau-

tions throughout the procedure to minimize the risk of complications for patients and providers.

- Order and interpret the results of CSF analyses to determine an appropriate management plan.
- Anticipate and manage complications of lumbar puncture after the procedure, which may include bleeding, headache, or infection.
- Obtain informed consent and effectively communicate with patients and families to explain the procedure, its expected diagnostic or therapeutic benefits, and potential complications.

ATTITUDES

Hospitalists should be able to:

- Demonstrate awareness of and ability to address periprocedural emotional and physical discomfort.

SYSTEM ORGANIZATION AND IMPROVEMENT

To improve efficiency and quality within their organizations, hospitalists should:

- Lead, coordinate, and/or participate in multidisciplinary initiatives to optimize resource use.
- Lead, coordinate, and/or participate in efforts to develop strategies to minimize institutional complication rates.
- Lead, coordinate, and/or participate in patient safety and quality improvement programs to monitor hospitalists' performance and/or supervision of procedural competence.
- Lead, coordinate, and/or participate in patient safety programs designed to coordinate care transition and the handoff of pending test results at the time of hospital discharge.
- Collaborate with emergency physicians to develop protocols for rapid identification and evaluation of patients with suspected CNS infections, bleeding, and other life-threatening conditions.

References

1. Mayo Clinic. Lumbar puncture (spinal tap). Available at: www.mayoclinic.org/tests-procedures/lumbar-puncture/basics/definition/prc-20012679. Accessed June 2015.