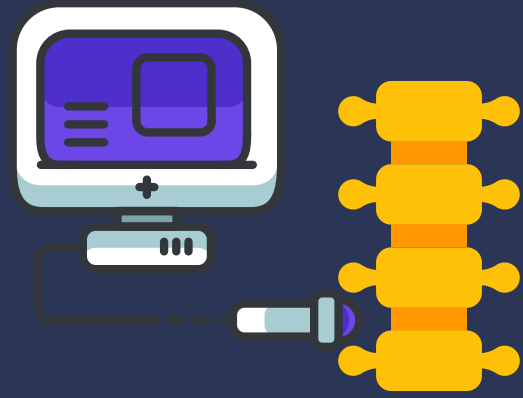


Teaching Novices Ultrasound-Assisted Neuraxial Procedures Using Simulation-Based Outcomes: A Proof of Concept

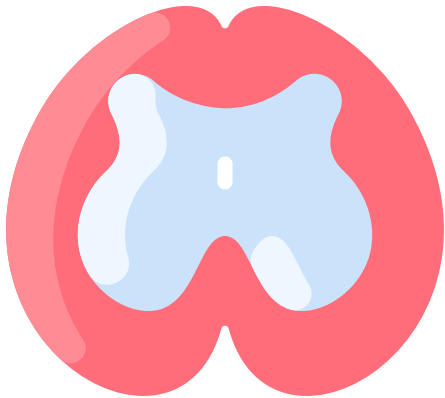
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Spinal Anatomy: A Real Pain in the Back?



- 
 Accessing the intrathecal space for spinal anesthesia can be challenging in patients with large BMIs or abnormal spinal anatomy
- 
 Multiple attempts at dural puncture increase anxiety for both the patient and the proceduralist
- 
 The use of ultrasonography improves first pass success while also decreasing complication rates and patient discomfort

Simulation provides a risk-free environment to master foundational concepts and its use continues to evolve

Simulation's integration into a structured curriculum can be highly effective






Deliberate practice using simulation-based learning can improve clinical performance

Two courses were developed to teach first-year residents how to access the lumbar intrathecal space

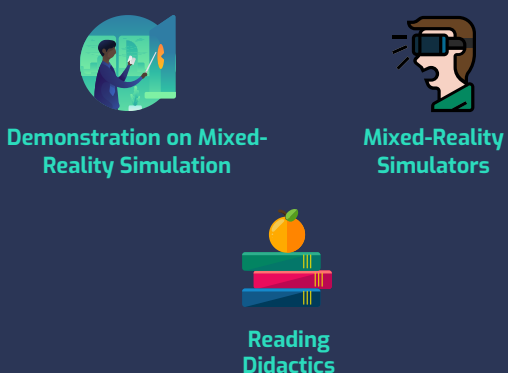
Conventional (C) Course






Three Post-Course Assessments

- 
 Ability to identify anatomic landmarks using ultrasound
- 
 Perform dural puncture on high BMI-lumbar simulator
- 
 30-minute multiple choice exam about lumbar anatomy and lumbar sonoanatomy

Experimental (E) Course



Lessons Learned

- 
 Course E was more effective in enforcing a consistent, stepwise procedural approach
- 
 Confidence level in performing dural puncture increased significantly among all learners
- 
 Follow-up is needed to determine whether learned skills translate to clinical competence