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Ultrasound-guided Epidural Blood Patch

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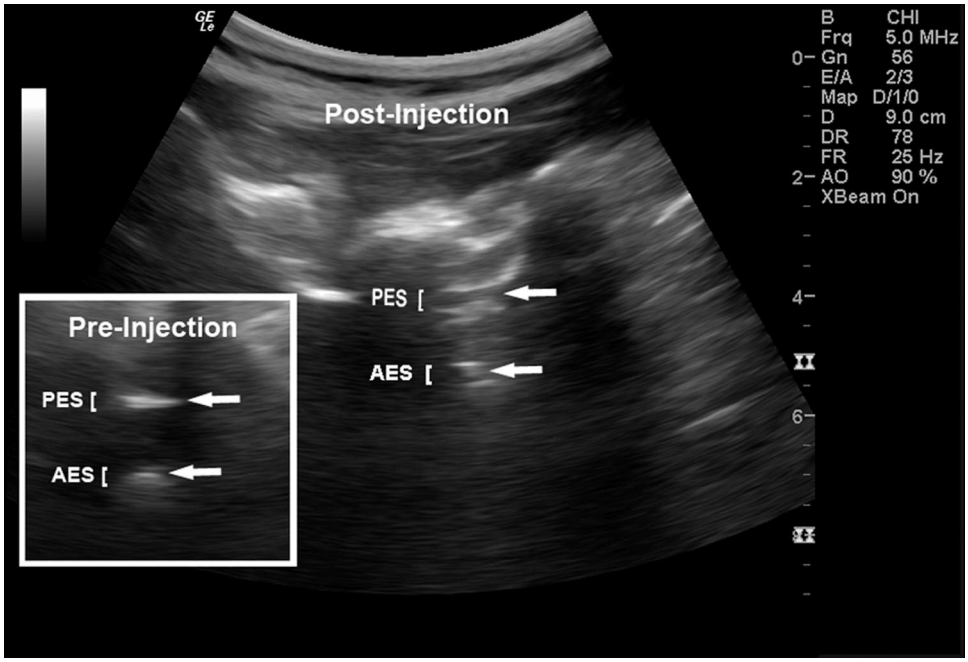

A 35-YR-OLD woman presented with a postdural puncture headache for epidural blood patch. The procedure was performed in the lateral position. A curvilinear ultrasound probe with sterile cover was used to visualize the epidural space. A 20-G epidural needle was used to identify the space by the loss-of-resistance technique. Blood was then injected into the epidural space under real-time ultrasound scanning (fig.). In the preinjection insert, the ligamentum flavum and posterior dura as well as the anterior dura and the posterior longitudinal ligament were in close proximity. In the postinjection picture, the posterior epidural space (PES) increased from less than 1 mm to 3 mm and the anterior epidural space (AES) increased from less than 1 mm to 2.5 mm.

Ultrasound scanning to measure the epidural space depth has been well studied.[1] However, performing an epidural injection under real-time ultrasound guidance has been limited. In one study where real-time ultrasound guidance was used for needle placement, the authors[2] described widening of the posterior epidural space during injection of local anesthetics into the epidural space. The use of ultrasound imaging for epidural needle placement has also been described in children, but real-time guidance is lacking.[3]

Confirmation of proper placement of injectate into the epidural space is essential. Though fluoroscopy use is well established, it carries the risk of radiation exposure—particularly among pregnant patients. The increase in the use of ultrasound technology will determine whether this guidance technique can provide an alternative portable method that might be superior to performing epidural injections blindly.

References

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