Epidural Blood Patch Through an Epidural Catheter

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Intro: EBP is a standard treatment for PDPH and larger volumes are associated with greater success (1,2). In patients who cannot tolerate adequate volumes, it is important to find alternate methods for delivery. We present a case of EBP delivery through a catheter in a patient who did not tolerate adequate blood volume due to intense paresthesia.

Case: The patient was a 31 year old G4P3 healthy parturient who received a labor CSE (sitting, L3-4, LOR to saline, 17T/27S, 2 attempts). During the first attempt, slow return of clear fluid after LOR was suspected to be CSF, so the procedure was repeated at the same level without complication. An IT dose of 2mg bupivacaine and 12.5mcg fentanyl was given and an Arrow catheter was threaded 5cm into the space. Aspiration and test dose were negative. The patient had uncomplicated labor analgesia and vaginal delivery. On PPD#1, the patient complained of neck and shoulder discomfort and later developed a positional headache. An epidural blood patch was performed that evening in the lateral position with a 17T and LOR to saline at L3-4. The patient reported paresthesia with injection of blood, limiting the volume to 15ml. The patient reported mild relief and conservative measures were continued for the next 3 days. On PPD#5, the patient agreed to a second EBP. This was performed in the sitting position with a 17T and LOR to saline at L3-4. After 3ml of blood was injected, the patient developed significant paresthesia, which lessened with each pause in blood delivery, but immediately returned with repeat injection. A three-holed portex epidural catheter was passed 4cm into the epidural space and subsequently 30ml of blood was injected without symptoms. The patient immediately experienced relief of her headache, and symptoms did not recur.

Discussion: Catheters have been described in delivery of prophylactic EBPs using labor epidural catheters prior to removal, however not for therapeutic EBPs (3). In this case, we successfully delivered an EBP to a patient who could not tolerate adequate blood volume using the traditional approach due to paresthesia. Possible explanations for success include less direct angle of injection against the dura, decreased speed of injection through a smaller diameter lumen, entry of blood away from site of dural tear, and entry of blood in the lateral epidural space given evidence that catheter tips tend to be found laterally (4). The use of a catheter for EBP presents a novel method which could lead to the ability to increase EBP volume, improve patient outcomes, and obviate the need to pursue more costly alternatives such as placement under fluoroscopy.

References:
3) Scavone B. Anesthes 2004; 101:1422-7
4) Hogan Q. Anesthes1999; 90:964-970