Epidural Analgesia in a Parturient with Spontaneous CSF Rhinorrhea

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Intro: Spontaneous CSF leaks are an uncommon cause of CSF rhinorrhea, with a historical incidence of 3-5%.(1) Due to disruption of the dura, complications such as meningitis and pneumocephalus may result.(2) We present a case of a parturient with a history of spontaneous CSF rhinorrhea and discuss its implications on obstetric anesthesia management.

Case: 36 yo gravida 9 para 5 patient presented at 39.4 weeks gestation for elective induction of labor. Her past medical history was significant for a history of chronic sinusitis, for which she underwent several nasal surgeries, including an endoscopic sinus surgery in 2005 complicated by the development of bacterial meningitis and abducens palsy. She also reported several episodes of post-spinal tap post-dural puncture headaches, requiring several epidural blood patches. In February 2009, the patient suddenly developed severe vertigo, accompanied by a positional headache and clear nasal discharge from the left nostril. A diagnosis of spontaneous CSF rhinorrhea was made based on CT and cisternography results. However, due to her pregnancy, surgical repair was to be delayed until after the pregnancy. Over the course of her pregnancy she reported symptomatic improvement, with resolution of rhinorrhea, headaches, and improvement in vertigo. Physical exam upon presentation, including a neurologic exam, was unremarkable. Upon request for analgesia, a 19 Ga epidural catheter was placed at the L3-4 interspace in the sitting position and incrementally dosed with 100μg fentanyl and 20mL 0.125% bupivacaine, resulting in a L4 level to cold bilaterally. Due to an inadequate analgesic level, the catheter was replaced at the L2-3 interspace and dosed with 5mL 1.5% lidocaine + epinephrine 1:200,000, resulting in a T6 level to cold bilaterally. The rest of her labor, delivery, and postpartum course proceeded uneventfully.

Discussion: To date, there is only one report in the literature of the successful management of a parturient with CSF rhinorrhea undergoing cesarean delivery under spinal anesthesia.(3) The decision to use a neuraxial technique for labor analgesia in a patient with CSF rhinorrhea must include the potential for worsening of the condition. Dural puncture with a large gauge needle may result in an “inverted bottle effect”, by which rapid egress of CSF at the dural puncture may result in air entrainment through the nose, resulting in tension pneumocephalus. Also, rapid increases in epidural pressure, which can occur with pushing during the second stage or with rapid epidural bolus administration, may worsen rhinorrhea due to increases in CSF pressure. As this patient had resolution of her initial symptoms, she was able to safely undergo placement of an epidural for labor analgesia and deliver vaginally.