

# **Successful treatment of persistent post-dural puncture headache from implantation of spinal cord stimulator using epidural fibrin glue patch after continued failure of epidural blood patches.**

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Publication Date: 2016

## **Abstract:**

**Introduction** Post-dural puncture headache (PDPH) is a well-recognized, iatrogenic complication associated with interventional neuraxial procedures. It is postulated to be caused by caudal displacement of pain-sensitive intracranial structures secondary to cerebrospinal fluid (CSF) leakage through dural defects. 1The incidence of accidental dural puncture varies from 0.4% to 6% with 60% rate of PDPH. 2Risk factors include large-bore cutting needle, young female, multiple needle punctures, previous history of PDPH, and low body mass index. Conservative management includes rest, hydration, caffeine, and analgesics. Epidural blood patch (EBP) is the gold-standard for PDPH treatment with a success rate of 77% to 96%. When EBP is contraindicated or has persistently failed, alternative therapies like epidural fibrin glue patch should be sought. **Results/Case report** A 58-year-old female was referred for evaluation of PDPH. She had a history of lumbar fusion for spondylolisthesis in 2005 and implantation of intrathecal hydromorphone pump for failed back surgery syndrome (FBSS) in 2008. Recently, she underwent a trial of spinal cord stimulator (SCS) that resulted in dural puncture. Since then, she developed severe positional headache radiating to bilateral frontal and occipital regions. She described the pain as constant, throbbing, cramping, and stabbing. The headache was associated with hearing loss and spells of confusion. It was worsened by sitting and standing, and relieved by lying flat. Despite several trials of EBP at an outside hospital, her headache failed to resolve. The patient had a known history of difficult venous access and her last EBP required central venous access. Physical examination revealed a welldeveloped

woman with several well-healed scars on her back. Magnetic resonance imaging of her thoracolumbar spine demonstrated postoperative changes from previous lumbar fusion and superimposed degenerative changes of the lumbar spine (Fig. 1). The patient agreed to proceed with epidural fibrin glue patch. The patient was positioned in prone position. An 18-gauge Tuohy needle was introduced into the epidural space at the L1-2 level using loss of resistance technique. Contrast dye was injected to confirm proper placement using epidurography (Fig. 2). A total of 5 ml fibrin glue was injected followed by 1 ml of normal saline and 5 ml of thrombin into the epidural space. The needle was removed and patient was discharged home in stable condition. A one-week follow-up phone call was made and she reported complete resolution of her PDPH. Discussion This case illustrates that epidural fibrin glue patch is a therapeutic option. Our patient suffered from PDPH after inadvertent dural puncture during implantation of SCS. The EBP only provided temporary relief and her quality of life was adversely affected. We decided to perform the epidural fibrin glue patch based on two reasons. Firstly, treatment failure after multiple EBP reflected continuous transdural leak. Secondly, the patient was known to have difficult venous access. Repeating EBP implied the need for central venous access. Epidural fibrin glue patch demonstrated promising outcomes for both immediate and long-term resolution of PDPH in our patient. Further studies are needed to investigate the safety and efficacy of fibrin glue for PDPH treatment. (Figure Presented).