Successful treatment of a Post Dural Puncture Headache in a pediatric patient with an Intrathecal Drug Delivery System: The role of the epidural blood patch

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THE CASE

- 14 year old female with a history of spastic quadriplegia treated with a baclofen pump who presented with a prolonged post dural puncture headache (PDPH).
- The patient had two previous Intrathecal drug delivery system (IDDS), the current functional catheter and a previous intentionally occluded indwelling catheter
- Previously had significant improvement in spasticity with the intrathecal baclofen
- Presented to neurosurgery with an increased in spasticity and the need for up titration of baclofen
- Also presented with a 3 month history of PDPH
- Replacement of the IDDS was planned by her neurosurgeon. The plan included removal of the previous catheters and repair of the durotomies
- Intraoperatively the occluding suture from the previous catheter was found to be displaced likely leading to the backflow of cerebral spinal fluid.
- The procedure was completed uneventfully
- The PDPH continued postoperatively.
- The pediatric pain service was consulted on POD#4 for treatment of PDPH including a potential epidural blood patch (EBP).

THE PROCEDURE

- After a careful history and physical confirming a headache consistent with PDPH she was trialed on conservative management consisting of increased intravenous fluids, caffeine, ketorolac, and laying supine.
- Conservative treatment failed, EBP planned.
- After consent was obtained the patient underwent induction of general anesthesia.
- After sterile preparation fluoroscopy was used to identify the interspace level of catheter insertion as indicated by the surgical operative note and our target interspace one level above, L1-L2, was identified.
- An 18g Touhy needle was advanced into the epidural space using loss of resistance to saline
- An epidurogram was shot in the AP and lateral positions with 1 cc of lohexol 300.
- Appropriate epidural spread was confirmed and the level was reconfirmed
- A sterile venipuncture was performed using 12 cc of blood aspirated and injected in 5 cc increments into the epidural space through the Touhy needle.
- The patient emerged from general anesthesia and was taken to the post anesthesia care unit (PACU).
- After approximately 30 minutes the patient had complete resolution of her PDPH symptoms and was able to be discharged to a nearby hotel from the PACU.
- She was pain free on post EBP day #1 and at her neurosurgical follow up visit on post EBP day#2.

REFERENCES


DISCUSSION

- The use of intrathecal drug delivery systems (IDDS) in pediatric patients with cerebral palsy, particularly those with spastic quadriplegia, is common practice.
- It is effective in up to 80% of patients.
- Multiple studies have looked at complication rates from these devices.
- Complication rates range from 30-44%, the most common of which is infection.
- PDPH is a well described complication of IDDS patients, though most literature comes from the adult population.
- The incidence of PDPH in the adult population is up to 23%.
- Approximately 20% of those patients did not respond to conservative treatment of laying supine, NSAIDS, caffeine and intravenous fluid administration.
- Though the EBP procedure in these patients is known to be more difficult there are a limited number of case reports documenting success in the pediatric population.
- We hope to add to that literature.