Preventive Efforts for Post-Dural Puncture Headaches in High-Risk Obstetric Patients with Unintentional Dural Punctures

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Background

- Unintentional dural puncture (UDP) is a complication of epidural needle placement
- Incidence of 0.51-1.5% in obstetric patients
- Of these, 50-80% may develop a post-dural puncture headache (PDPH)
- Associated with delayed recovery, prolonged hospital stays

Hypothesis

- Insertion of intrathecal catheters following UDP reduces PDPH incidence
- Intrathecal catheter placement reduces the need for epidural blood patches (EBP) to treat PDPH following UDP

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Study Design

- Retrospective chart review of patients who experienced UDP from 2018 to 2024 (n = 96)
- Variables included incidence and severity of PDPH, therapeutic interventions such as EBP, and duration of intrathecal catheter left in place

Methods

- Data collected as mentioned in the study design
- Calculated the incidence of PDPH after UDP and the need for EBP
- PDPH severity classification into mild, moderate, and severe based on clinical documentation
- Fisher's exact test to compare PDPH and EBP between groups
- Chi-square test to compare
- PDPH rates of patients with intrathecal catheters in place for ≥ 24 hours and < 24 hours

Retrospective Cohort Study

Unintentional dural puncture

2018–2024

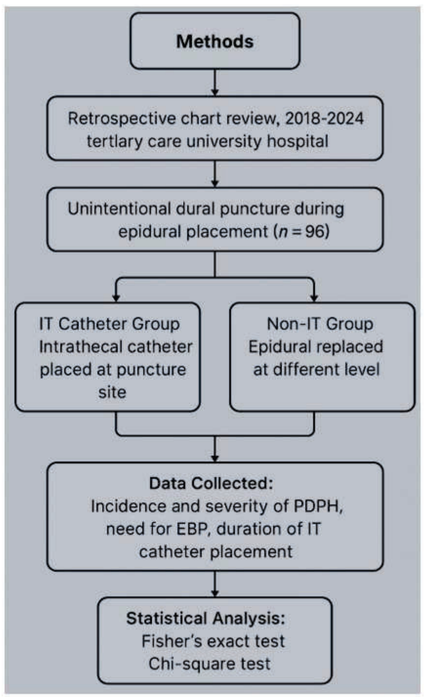
Tertiary care hospital

Groups:

- IT catheter group
- Non-IT group

Outcomes:

- PDPH
- Epidural blood patch



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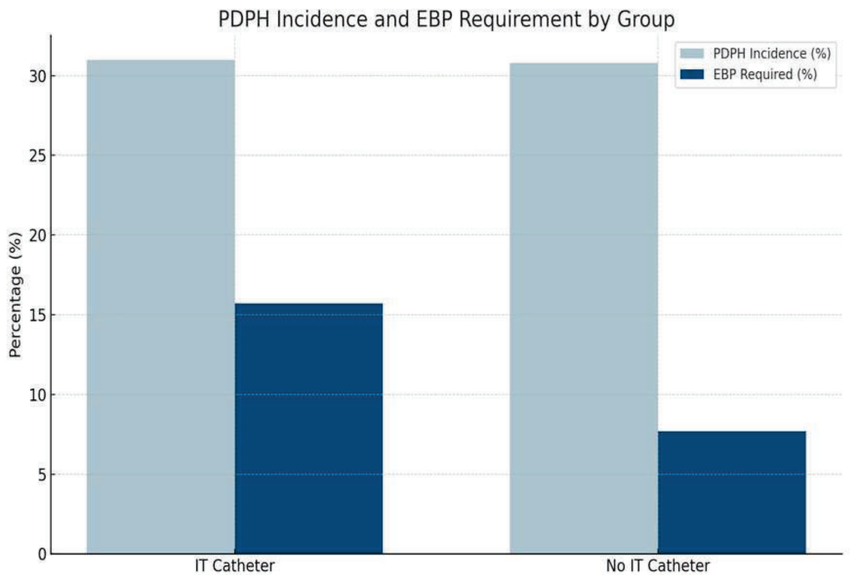
Results

- 73% of patients had an intrathecal catheter placed, while 27% did not
- PDPH occurred in 31% of patients with an intrathecal catheter
- PDPH occurred in 30.8% of patients without an intrathecal catheter
- Similar rated of PDPH
- Fisher's exact test between the groups showed no statistical difference in PDPH occurrence (p = 1.000)
- Incidence of mild, moderate, and severe PDPH in patients with intrathecal catheters was 13.6%, 54.5%, and 31.8%, respectively
- 15.7% of patients that had an intrathecal catheter placed required EBP for relief
- The percentage was lower in the non-intrathecal group, but there was no statistical difference (p = 0.3407)



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Discussion

- No significant reduction in PDPH with IT catheter placement after UDP
- Similar PDPH incidence between the intrathecal catheter and the non intrathecal catheter group (31% and 30.8%, respectively)
- A higher percentage of patients with intrathecal catheters required an epidural blood patch (15.7% vs 7.7%), but the difference was not statistically significant
- The duration of the intrathecal catheter in place did not significantly impact the rates of PDPH
- Potential contributing factors include patient variability, technique, documentation differences, and clinical decision-making thresholds for EBP

Conclusion

- Intrathecal catheter placement after UDP did not significantly reduce PDPH incidence or the need for EBP
- While not statistically superior, intrathecal catheters may offer the advantage of avoiding repeated epidural attempts and providing immediate analgesia
- Emphasis on safety implementation protocols, labeling, and interdisciplinary communication when using intrathecal catheters

INTRATHECAL CATHETER IN USE