

Topical Sphenopalatine Ganglion Block Compared with Epidural Blood Patch for Postdural Puncture Headache Management in Postpartum Patients

A Retrospective Review

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ORIGINAL ARTICLE

Topical Sphenopalatine Ganglion Block Compared With Epidural Blood Patch for Postdural Puncture Headache Management in Postpartum Patients
A Retrospective Review

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INTRODUCTION

- Post-dural puncture headache (PDPH) is a severe and debilitating complication of unintentional dural puncture (UDP).
- The gold standard treatment for PDPH has been epidural blood patch (EBP), but it is an invasive intervention with the potential of life-threatening complications
- To our knowledge, there have been no published studies comparing EBP with SPGB for PDPH treatment

OBJECTIVE

- The main purpose of this manuscript is to report the first ever 17-year retrospective review comparing the effectiveness of SPGB to EBP for treatment of PDPH after unintentional dural puncture in postpartum patients.

METHODS

- This retrospective study was approved by the institutional review board and the requirement for informed consent was waived.
- We conducted a chart review of our obstetric patients who experienced PDPH from an UDP from January 1997 to July 2014
- Demographic characteristics, headache severity, and associated symptoms were collected prior to treatment
- A total of 81 patients were identified:
 - SPGB group (n=42) were positioned in the supine position with their heads off the bed in the chin-up position and received 0.5-1.5 ml of 4% lidocaine solution into their nostrils via cotton-tip applicators
 - EBP group (n=39) received 20 ml autologous blood in a sterile manner to the epidural space
- Residual headache, recovery from associated symptoms, and new treatment complications were compared between the two groups at 30 minutes, 1 hour, 24 hours, 48 hours, and 1 week post treatment
- IBM SPSS Statistics V22.0 were used T-test, Fisher’s exact test, and Odds ratio analysis of the data

RESULTS

Table I: Patient Characteristics

Characteristics	SPGB Group (N=42)	EBP Group (N=39)	P-value
Age (years)	29.2 ± 1.1	31.2 ± 0.9	0.2
BMI (kg/m ²)	27.4 ± 0.6	28.8 ± 0.6	0.1
Parity	2.4 ± 0.2	1.9 ± 0.2	0.1
Headache severity	7.8 ± 0.3	8.2 ± 0.3	0.3

*Data is presented as the mean ± standard error. Comparisons across groups were performed using the t-test.

- Baseline characteristics were similar (Table 1)

Figure 1. Patients who Recovered from Headache

Time After Treatment	SPGB (%)	EBP (%)
0.5 hours	38.5	20.5
1 hour	71.4	30.8
24 hours	85.7	87.2
48 hours	92.9	94.9
1 week	100.0	100.0

P-value < 0.01

- A greater number of patients showed significant relief in their PDPH and associated symptoms at 30 and 60 minutes after treatment with SPGB than after treatment with EBP (P < 0.01) (Figure 1)

- Only the EBP patients complained of post treatment complications, which all resolved in 48 hours (Table 2)

Table II: Post treatment complications

Complications	SPGB Group (N=42)	EBP Group (N=39)	P-value
Backache with radiation to lower extremities	0 (0%)	3 (7.7%)	0.11
Vasovagal reaction	0 (0%)	1 (2.6%)	0.48
Temporary hearing loss	0 (0%)	1 (2.6%)	0.48
Return to ER	0 (0%)	9 (23.1%)	0.0008

*Data is presented as the number of patients, with the percentage in parentheses. Comparisons across groups were performed using the Fisher’s exact test.

DISCUSSION

- A greater number of patients experienced a quicker onset of headache relief, without any new complications, from treatment with SPGB versus EBP
- SPGB is a safe, inexpensive, and a well-tolerated treatment
- Consequently, we recommend that every patient with PDPH should be offered a SPGB prior to considering treatment with EBP

REFERENCES

- Stein MH, Cohen, S., Mohiuddin, M. A., Dombrovskiy, V., Lowenwirt, I. Prophylactic vs therapeutic blood patch for obstetric patients with accidental dural puncture--a randomised controlled trial. *Anaesthesia*. 2014;69(4):320-326.
- Sachs A, Smiley R. Post-dural puncture headache: the worst common complication in obstetric anesthesia. *Semin Perinatol*. 2014;38(6):386-394.
- Tohmo H, Vuorinen E, Muuronen A. Prolonged impairment in activities of daily living due to postdural puncture headache after diagnostic lumbar puncture. *Anaesthesia*. 1998;53(3):299-302.



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