Topical Sphenopalatine Ganglion Block with 4% Cocaine for Post-Dural Puncture Headache After Spinal Anesthesia

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Background

Post-dural puncture headache (PDPH) is a known complication of neuraxial anesthesia[1].

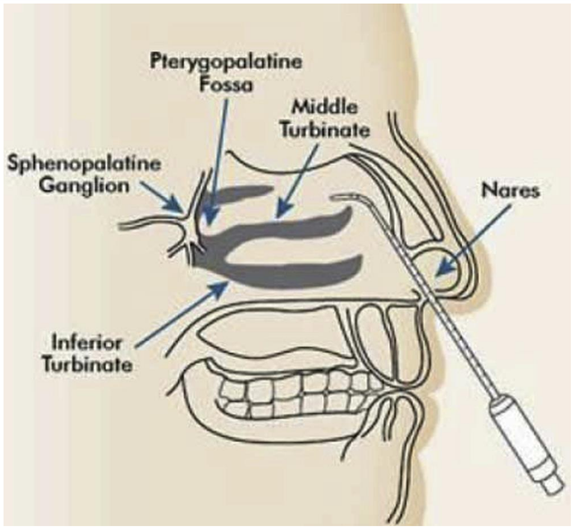
Epidural blood patch (EBP) remains the gold standard but is invasive.

Transnasal Sphenopalatine ganglion block (SPGB) is a minimally invasive alternative, reported almost entirely in obstetric patients and with amide local anesthetics[2,3].

The Case

- **POD 0** 40-year-old man with history of episodic exertional migraine underwent left total hip arthroplasty under spinal anesthesia.
- **POD 1** Discharged home
- **POD 1–3** Severe, bilateral postural headache
- **POD 4** Presented to ED. Upright NRS 7/10; nonfocal neurologic exam. Fluids, ketorolac, caffeine administered.
- **POD 4** **Bilateral transnasal SPGB, 4% cocaine twice for 5 min (40 mg) — NRS 7/10 → 1/10**
- **POD 4** Discharged; complete resolution at telephone follow-up

A transnasal block with 4% cocaine took a post-dural puncture headache from 7/10 to 1/10 — no blood patch needed.



Mamun N, Blaya M. 16046 The Role of the Sphenopalantine Ganglion Block Procedure: A Treatment Option in Management of Headaches. Neuromodulation, 25S45

Mechanism

CSF loss → ↓ intracranial pressure → traction

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Compensatory parasympathetic cerebral vasodilation via the sphenopalatine ganglion

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Topical cocaine: mucosal anesthesia + vasoconstriction → relief

Discussion & Caveats

Topical cocaine uniquely combines mucosal anesthesia with vasoconstriction[4,5] — appealing where PDPH involves cerebral vasodilation.

Concurrent fluids, ketorolac, and caffeine make it difficult to attribute relief to the block alone.

The 40 mg dose is below nasal-surgery thresholds (approximately 200 mg) but warrants cardiovascular monitoring.

SPGB with low-dose topical cocaine warrants a prospective comparative study.

1. Choi PT, et al. Can J Anaesth 2003;50:460-469.
2. Nair AS, Rayani BK. Korean J Pain 2017;30:93-97.
3. Kent S, Mehaffey G. J Clin Anesth 2016;34:194-196.
4. Harper SJ, Jones NS. J Laryngol Otol 2006;120:808-811.
5. Jespersen MS, et al. Br J Anaesth 2020;124:739-747.