

Sphenopalatine Ganglion Block: Management of Post-dural Puncture Headache After Cesarean Section

Ece Yamak Altınpulluk*, Nilgün Çolakoğlu and Lale Yüceyar

*Correspondence email: eceyamak@gmail.com

WFSA-D-19-00016

Abstract

The sphenopalatine ganglion is a parasympathetic ganglion and has been blocked for various types of headaches and facial pain. We have reported a patient with severe post-dural puncture headache after cesarean section who showed rapid symptomatic improvement after a single sphenopalatine ganglion block.

Dear Editor

The Sphenopalatine ganglion (SPG) is a parasympathetic ganglion. SPG block has been applied for various types of headaches and facial pain.¹⁻³ Here, we report a patient with severe post-dural puncture headache (PDPH) after cesarean section who showed rapid symptomatic improvement after a single sphenopalatine ganglion block. The written consent from the patient for this case report to be written up as well as for her photograph to be taken has been obtained.

The patient was a 22 year-old pregnant woman (165 cm, 68kg) at 37 weeks' gestation, who underwent emergency cesarean delivery. She ate her last meal 15 minute prior to the surgery. Informed written consent was obtained for spinal anesthesia. Spinal anesthesia was performed with a 25G Quincke spinal needle at the L3-L4 interpace with heavy bupivacaine 0.5% 13mg.

The patient complained of a severe headache on the first postoperative day. The visual analog scale (VAS) score was evaluated as 10/10 and aggravated by movement. After detailed examination a diagnosis of PDPH was made. Movement was restricted and bed rest was prescribed. Paracetamol 1gram and 50 mg caffeine orally every 6 hours was administered, as well as an intravenous infusion of 200mg theophylline were administered. Normal saline infusion was started at the rate of 2ml/kg/h. However, the next day the patient showed no improvement of symptoms and was agitated. SPGB was suggested to the patient. After obtaining written consent, the patient was made to lie in the supine position with her neck slightly extended. SPG block was performed by a trans-nasal approach. A total of 2 puffs of Lidocaine 10 % spray was applied through both nares with an applicator. (Figure1). Approximately 5-10 minute after the trans-nasal injection the patient described significant relief of symptoms of her headache. The VAS score was evaluated as 0/10. The following day the patient was able to sit up and eat. The patient remained in hospital for 4 days with no further complaint of headache.

The sphenopalatine ganglion is located in the pterygopalatine fossa posterior to the middle turbinate. The tip of the applicator does not come into direct contact with ganglion, but the local anesthetic infiltrates around it. The connective tissue and mucus membrane make topical application of local anesthetic effective.⁴ After dural puncture cerebrospinal fluid is lost continuously. Compensatory vasodilation occurs and this vasodilatation causes a headache. If the parasympathetic activity is blocked with a SPG block uncontrolled vasodilation is prevented and patients feel symptomatic relief.⁵ Trans nasal SPG block is an effective technique for pain control in patients with PDPH and this technique appears to be a simple, generally safe method. It, however, needs further study and investigation regarding its efficacy.

Ece Yamak Altınpulluk

Anaesthesiologist in
Istanbul University
Cerrahpasa Medical Faculty
Research Fellow Outcomes
Research Department
Anesthesiology Institute
Cleveland Clinic OH
USA

Nilgün Çolakoğlu, M.D.

Department of
Anesthesiology and
Reanimation
Istanbul University
Cerrahpasa Medical Faculty
Istanbul
TURKEY

Prof. Dr.Lale Yüceyar

Department of
Anesthesiology and
Reanimation, Istanbul
University Cerrahpasa
Medical Faculty Istanbul
TURKEY

Figure 1. Position of applicator in the nare



REFERENCES

1. Channabasappa SM, Manjunath S, Bommalingappa B, Ramachandra S, Banuprakash S. Transnasal sphenopalatine Ganglion block for treatment of postural headache following spinal anesthesia. *Saudi J Anaesth.* 2017; **11**: 362-3
2. Sanders M, Zuurmond WW. Efficacy of sphenopalatine ganglion blockade in 66 patients suffering from cluster headache: A 12- to 70-month follow-up evaluation. *J Neurosurg.* 1997; **87**: 876–80.
3. Varghese BT, Koshy RC. Endoscopic transnasal neurolytic sphenopalatine ganglion block for head and neck cancer pain. *J Laryngol Otol.* 2001; **115**: 385–7.
4. Yang IY, Oraee S. A novel approach to transnasal sphenopalatine ganglion injection. *Pain Physician.* 2006; **9**: 131–4.
5. Piagkou M, Demesticha T, Troupis T, Vlasik K, Skandalakis P, Makri A, et al. The pterygopalatine ganglion and its role in various pain syndromes: From anatomy to clinical practice. *Pain Pract.* 2012; **12**: 399–412.