

A simple modification of sphenopalatine block for post-dural puncture headache

Sir,

Sphenopalatine ganglion (SPG) block has been well used as a modality for the treatment of various types of headaches and facial pain.^[1]

A 35-year-old male with end-stage renal disease underwent live donor renal transplantation under general anaesthesia. The epidural was placed under strict aseptic precautions at T11-12 level, with an 18G Touhy needle. A continuous infusion of 0.125% ropivacaine and 0.1% ropivacaine along with 1 mcg/ml of fentanyl was used in the intraoperative and postoperative period respectively.

On postoperative day two, the patient developed a severe fronto-occipital headache which aggravated on sitting and relieved on recumbent position. After a detailed history and examination to rule out other causes of postoperative headache, a diagnosis of post-dural puncture headache (PDPH) was made.

We hypothesised DP during epidural catheter insertion might have occurred which caused PDPH. The epidural drug infusion was stopped. On examination, the patient was afebrile and had no focal neurological deficits. The patient was advised to lie supine with 10° Trendelenburg position and oral acetaminophen 650 mg with 50 mg caffeine thrice a day was prescribed. The patient had brisk urine output which was replenished as per renal transplant protocols. The epidural catheter was left *in situ*.

The patient had no improvement in symptoms despite conservative management with a VAS score of 9. SPG block was discussed for symptomatic relief as the patient had deranged coagulation parameters (INR 1.76 and epidural blood patch was out of the question). The conventional method of SPG blockade includes a long applicator with a cotton swab that was not feasible due to the risk of nasal bleeding during probing of the nose. We hypothesised that if local anaesthetic is instilled like nasal drops over nasal mucosa, SPG may get blocked.^[2] After obtaining written consent, the patient was made to lie in supine position with

the neck extended. 2 mL of 2% lignocaine was slowly instilled in both the nostrils alternatively; the nose was gently pinched to ensure the drug does not spill out.

Instantaneously, the patient described significant relief of headache; the VAS was reduced to 1. The patient reported a VAS of 6 after 4 h and the installation of lignocaine was repeated in the same dosage and route. The SPG block was performed four times at an interval of 6 h after which the patient remained asymptomatic.

The sphenopalatine ganglion is a triangular-shaped parasympathetic ganglion, located superficially in the pterygopalatine fossa, posterior to the middle nasal turbinate, and anterior to the pterygoid canal.^[3] There is a 1 to 1.5 mm-thick layer of connective tissue and the mucous membrane surrounding the ganglion, so the drug enters well by a simple topical application or by injection. The SPG is a junction that has sympathetic, parasympathetic, and sensory innervations overlapping in a minute area. This could be the reason behind the fact that the block diffuses the conduction of pain due to several aetiologies.

After a DP, the cerebrospinal fluid may continuously ooze from the subarachnoid space. In such a situation, the intracranial volume is restored by compensatory vasodilatation. This vasodilatation is responsible for the excruciating headache after a DP. One of the contributors to this vasodilatation is mediated by parasympathetic activity by the neurons which have synapses in the SPG. This may be the mechanism by which an SPG block helps in alleviating the headache.^[4]

There is evidence available which highlight the efficacy of the SPG block for relieving PDPH.^[5-7] Most of the studies have used an applicator for placing lignocaine-soaked cotton at the middle turbinate. Singla *et al.*^[6] have used an epidural catheter for the instillation of local anaesthetic. We found that the installation of local anaesthetic with syringe or even by a dropper is simpler and quicker to perform to block sphenopalatine ganglion effectively.

This simple method of SPG provides optimum analgesia by putting local anaesthetic as a nasal drop and relieving the pain of PDPH immediately. The amount of local anaesthetic which is required in such volume will never exceed the recommended dosages for local anaesthetics.

This modification of SPG can easily be administered in patients with coagulation dysfunction.

Informed consent

Written informed consent has been obtained from the patient.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

**Tanvi Bhargava, Abhishek Kumar¹, Tapas K Singh²,
Amit Rastogi²**

Department of Anesthesiology, PGIMER and Dr RML Hospital, New Delhi, ¹Department of Onco-Anesthesiology and Palliative Medicine, DRBRAIRCH, AIIMS, New Delhi, ²Department of Anesthesiology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

Address for correspondence:

Dr. Amit Rastogi,
Department of Anesthesiology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow - 226 014, Uttar Pradesh, India.
E-mail: toshi.gsvm@gmail.com

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