

Treating postdural puncture headache in COVID-19 positive patient- is bilateral greater occipital nerve block the answer?

To the Editor,

Postdural puncture headache (PDPH) is an undesirable complication experienced after a spinal anesthetic, after an inadvertent dural puncture during epidural space identification, after diagnostic lumbar punctures, and after intrathecal injections of chemotherapeutic agents in cancer patients. A parturient could develop PDPH after lower segment cesarean section (LSCS) under spinal anesthesia or normal vaginal delivery after epidural analgesia during which there is inadvertent dural puncture. An epidural blood patch (EBP) is considered gold standard when conservative measures fail and has a success rate of up to 75%.^[1]

Bauer *et al.* described the management of COVID-19 positive obstetric patients due to severe acute respiratory syndrome coronavirus 2 (SARSCoV-2).^[2] The review deals with evidence-based recommendations and expert opinion when evidence is scarce. The paper has not described best practice for managing PDPH in obstetric patients possibly due to scarcity of literature or no report as of now. Till date there is no paper describing the management of PDPH experienced postoperatively in COVID-19 positive patients.

In COVID-19 patients, the sequelae to viral shedding from the autologous blood injected in the epidural space after an EBP is not known. Central nervous system involvement has been described as a possibility due to presenting as acute cerebrovascular diseases, loss of consciousness, and skeletal weakness.^[3] Based on available data, the incidence of thrombocytopenia in COVID-19 positive patients is around 36% and the percentage increases based on the severity of the disease.^[4] Thus, viral shedding in epidural space leading to possible neurological issues and underlying thrombocytopenia are two limiting factors in offering EBP to patients. Till date data of qualitative function of platelets in thrombocytopenic COVID-19 patients has not been described or explored.

Bilateral trans-nasal sphenopalatine ganglion block (SPGB) is a minimally invasive, office-based procedure, which has been quite effective in managing PDPH. The procedure is safe, can be repeated, and has no serious adverse effects *per se*.^[5] However, in a COVID-19 positive patient, there could be coughing or sneezing while performing the block, which could lead to aerosol generation in the premises, which is not desirable.

Bilateral greater occipital nerve block (GONB) is another intervention described, which has been successfully used to treat headache due to various etiologies including PDPH.^[6] Bilateral GONB can be performed using landmark technique, with neurostimulation or with ultrasound (US) guidance with patient in prone or sitting position with neck flexed. With landmark technique, the greater occipital protuberance (GOP) is identified and a line is drawn 3–3.5 cm downwards. From that point, 2–2.5 cm laterally the injection is made medial to the pulsation of greater occipital artery (GOA). With neurostimulation using 0.3 mA, injection is made at above mentioned landmark at the point where patient appreciates a tingling sensation. With US using a high frequency linear array probe (8–13 MHz), the injection is made after identifying the pulsations of GOA medial to it with the probe places transversely at 3–3.5 cm caudal to GOP and injections performed bilaterally using 2 ml of local anesthetic on each side. After a bilateral GONB there is “winding down” of central sensitization due to interruption of afferent input to the dorsal horn and trigeminal nucleus caudalis (TNC) neurons temporarily, which relieves the headache. Transient dizziness, alopecia, and hematoma at the site of injection are the adverse events reported but were never serious.

In the current scenario with human-to-human transmission of SARSCoV-2 is very high due to aerosol, and safety of EBP is not established due to viral shedding, bilateral GONB appears the safest intervention to deal with patients suffering with PDPH even after conservative management in the form of hydration, acetaminophen, gabapentinoids, and caffeine. To conclude, patients with PDPH could be offered bilateral GONB as it is easy to perform, safe, and can be repeated if required.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

ABHIJIT NAIR, SANDEEP DIWAN¹

Department of Anaesthesia, Basavarakam Indo-American Cancer Hospital and Research Institute, Hyderabad, Telangana,

¹Department of Anaesthesia, Sancheti Hospital, Pune, Maharashtra, India

Address for correspondence:

Dr. Abhijit Nair,
Department of Anaesthesia, Basavatarakam Indo-American Cancer
Hospital and Research Institute, Hyderabad - 500 034,
Telangana, India.
E-mail: abhijitnair95@gmail.com

Received: 27-Apr-2020, **Revised:** 10-May-2020,
Accepted: 11-May-2020, **Published:** 24-Sep-2020


References

1. Boonmak P, Boonmak S. Epidural blood patching for preventing and treating post-dural puncture headache. *Cochrane Database Syst Rev* 2010;CD001791.doi: 10.1002/14651858.CD001791.pub2.
2. Bauer M, Bernstein K, Dinges E, Delgado C, El-Sharawi N, Sultan P *et al.* Obstetric anesthesia during the COVID-19 pandemic [published online ahead of print, 2020 Apr 6]. *Anesth Analg* 2020. doi: 10.1213/ANE.0000000000004856.
3. Mao L, Jin H, Wang M, Hu Y, Chen S, He Q, *et al.* Neurologic manifestations of hospitalized patients with coronavirus disease 2019 in Wuhan, China [published online ahead of print, 2020 Apr 10]. *JAMA Neurol* 2020;e201127.doi: 10.1001/jamaneurol.2020.1127.
4. Lippi G, Plebani M, Henry BM. Thrombocytopenia is associated with severe coronavirus disease 2019 (COVID-19) infections: A meta-analysis. *Clin Chim Acta* 2020;506:145-8.
5. Nair AS, Rayani BK. Sphenopalatine ganglion block for relieving postdural puncture headache: Technique and mechanism of action of

block with a narrative review of efficacy. *Korean J Pain* 2017;30:93-7.

6. Nair AS, Kodisharapu PK, Anne P, Saifuddin MS, Asiel C, Rayani BK. Efficacy of bilateral greater occipital nerve block in postdural puncture headache: A narrative review. *Korean J Pain* 2018;31:80-6.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
Website: www.saudija.org	Quick Response Code 
DOI: 10.4103/sja.SJA_383_20	

How to cite this article: Nair A, Diwan S. Treating postdural puncture headache in COVID-19 positive patient- is bilateral greater occipital nerve block the answer? *Saudi J Anaesth* 2020;14:566-7.

© 2020 Saudi Journal of Anesthesia | Published by Wolters Kluwer - Medknow