
Bilateral greater orbital nerve block: Efficacy in postdural puncture headache

Sir,

The pain experienced with postdural puncture headache (PDPH) is distressing and is associated with lot of suffering. Epidural blood patch (EBP) is considered gold standard in alleviating moderate-to-severe PDPH when conservative measures do not offer satisfactory pain relief. Issues with EBP are another inadvertent dura puncture, meningitis, neurodeficit, and loss of consciousness.^[1] Bilateral greater occipital nerve (GON) block is minimally invasive injection performed by landmark technique or ultrasound (USG) assisted which is effective in alleviating pain due to PDPH.

GON is the main sensory nerve of occipital region arising from C2 to C3 spinal cord segment. The nerve supplies major rectus capitis posterior muscle and traverses in relation to medial occipital artery and superior nuchal line. GON block has been used to treat several types of headache such as migraine, cluster headache, and occipital neuralgia. The characteristics of PDPH, i.e., fronto-occipital area, worsening during ambulation and relief with rest overlap with many of the above-mentioned headache syndromes. Blockade of the GON leads to the interruption of pain from the oculo-frontal area which is where headache is most severe.^[2] GON supplies

the skin, muscles, and vessels of the scalp. The proposed mechanism which offers pain relief after bilateral GON block is due to “winding down” of central sensitization by interrupting afferent input to the dorsal horn and trigeminal nucleus caudalis (TNC) neurons temporarily. The sensory neurons of the upper cervical spinal cord are close to TNC neurons which could be another reason of relief from PDPH after GON block.^[3] The block can be performed blindly using a landmark technique or under real-time USG guidance. In landmark technique, the occipital protuberance is identified, and a line is drawn 3–3.5 cm caudally from that point at midline. Another point 1.5 cm lateral from the above-mentioned point are marked bilaterally. 3–4 ml of local anesthetic with or without steroid can be injected at that point after negative aspiration of blood [Figure 1]. When USG guidance is used, a linear array high frequency probe with the probe in transverse position is placed at the occipital protuberance in midline. The atlas vertebra without the spinous process and axis vertebra with bifid spinous process can be identified at this point by moving the probe caudally. After identifying axis vertebra, probe is moved laterally to identify the large belly of obliquus capitis inferior (OCI) muscle [Figure 2]. The pulsations of greater

occipital artery can be identified usually in the fascial plane between semispinalis and OCI muscle by applying color Doppler. The GON can be identified medial to the greater occipital artery pulsations.^[4] The injection can be performed under vision bilaterally after negative aspiration and by confirming spread of drug [Figure 3].

Vasovagal syncope, transient dizziness, and exacerbation of headache are few reported adverse effects of GON block.

Vertebral artery injection and proximity to epidural space are other potential problems which can be avoided using real-time USG for injection.^[5] Supportive treatment such as hydration, bed rest, laxatives should continue after relief from PDPH. The patient could be considered for an EBP if bilateral GON block does not provide satisfactory pain relief.

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Conflicts of interest

There are no conflicts of interest.

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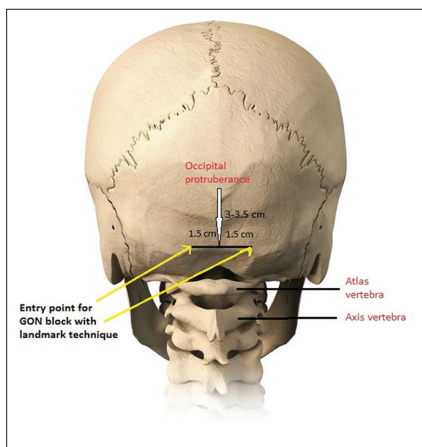


Figure 1: Landmarks relevant for performing a greater occipital nerve block without ultrasound guidance. The block can be performed with patient in prone position

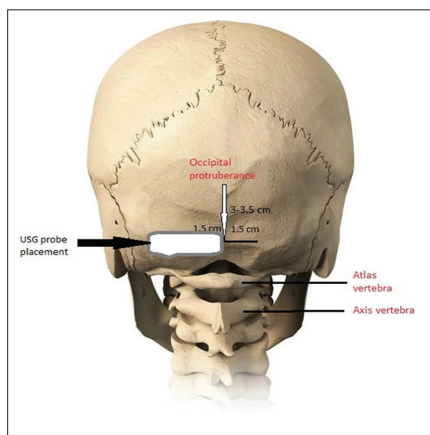


Figure 2: The place of ultrasound guidance probe placement for greater occipital nerve block

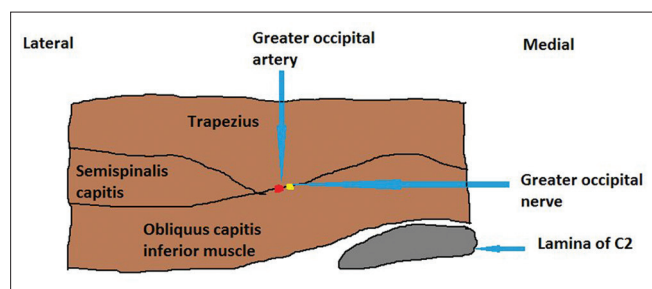


Figure 3: A sketch showing greater occipital nerve lying medial to greater occipital artery in the myofascial plane between semispinalis capitis muscle and obliquus capitis inferior muscle

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