



## LETTER TO THE EDITOR

# A new aspect for the treatment of SUNCT headache

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Dear Editor,

Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) is one of the trigeminal autonomic cephalalgias (TACs). Their management can be challenging. For medically intractable chronic forms of SUNCT, several surgical approaches have been tried. Great occipital nerve pulsed radiofrequency (GON PRF) at two different points is considered an alternative for the treatment.

A 69-year-old right-handed male patient presented with a headache presented with intermittent headache lasting 20 years. From his history, it was learned that the right-sided headache, especially around the eye, was very severe: A numerical rating scale (NRS) of 9-10 accompanied by tearing in the eye lasting 20-150 s, 20 times a day. Neurological examination was normal. Laboratory values, brain, and neck imaging were all within normal limits. The patient was diagnosed with SUNCT. Lamotrigine was used at a dose of 100 mg, gradually increasing in 1 week with side effects monitoring, and topical nasal sphenopalatine block using 10% lidocaine and a supraorbital block using 0.5 mL 1% prilocaine were applied during the transition phase. Sphenopalatine and supraorbital block did not reduce the pain sufficiently; therefore, right GON block was applied through 3 mg dexamethasone and 1 cc 2% prilocaine in a volume of 2.5 mL under ultrasound guidance. The patient had no pain for 3 h, but the GON block procedure was repeated 48 h later due to the onset of pain. Pain intensity and the number of attacks decreased to NRS 3 and 4/day,



**Figure 1.** Insertion of the needle for great occipital nerve pulsed radiofrequency under sterile conditions using the ultrasound-guided in-plane technique.

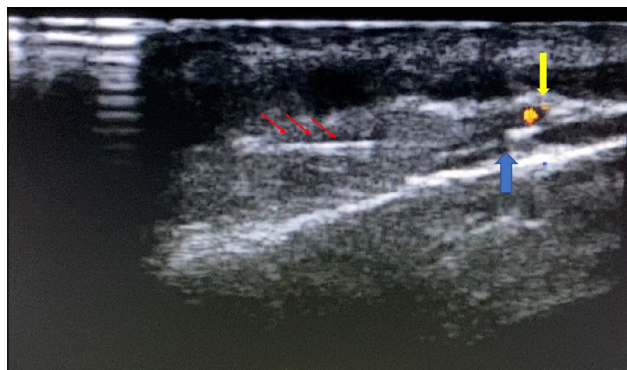
respectively. After 72 h, he was taken to the operating room for the GON PRF procedure, as his pain increased in frequency and intensity. He was placed in the prone position, and the skin was cleaned. Lidocaine (1%) in a 27 gauge, 5 cm needle was used to anesthetize the skin. Using a linear, high-frequency ultrasound probe, the occipital artery, and the greater occipital nerve were visualized. Right GON PRF was applied for 300 s (2 Hz, 20 m width, 65 V), 42°C with 22 G 100 mm needle, and 5 mm active needle (Fig. 1, 2). After the needle was placed and the first application has performed, the needle was retracted 0.5 cm and the procedure was repeated using the same settings. The lesion's width was targeted using two cycles and a 0.5 cm interval-placed needle for PRF. Before any interventional procedure was applied to the patient, informed consent was obtained.

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**Figure 2.** Transverse ultrasound image of the greater occipital nerve (blue arrow), catheter needle (red arrow), and occipital artery (yellow arrow).

The patient was followed for 6 months after RF. In the follow-up, the pain attacks decreased to 2 times a day, and the severity decreased to NRS 2; the patient's pain was controlled with gradual dose reduction in oral treatment prophylaxis.

SUNCT can be defined as having at least one ipsilateral cranial autonomic phenomena accompanied by moderate or severe unilateral head pain, with orbital, supraorbital, temporal, and/or other trigeminal distribution, lasting for 1-600 s, and occurring as single stabs, series of stabs or in a saw-tooth pattern (1). Lamotrigine is the first-line drug preferred for SUNCT treatment; if lamotrigine is ineffective and additional therapy or replacement is required, oxcarbazepine, duloxetine, or topiramate may also be useful drug options. Intravenous lidocaine has been stated as a highly effective treatment option in patients with frequent severe attacks; additionally, GON block may be effective in a small population. Although TACs are primary headaches of central origin not related to GON lesions, occipital nerves are thought to have modulating properties on nociceptive afferents. Their efficacy is thought to result from the anatomical convergence of trigeminal and cervical afferents in the trigeminal nucleus caudalis (2). Porta-Etessam et al. (3) applied bilateral GON blocks using bupivacaine during the transition period after they started lamotrigine and gabapentin on their 82-year-old SUNCT patient; the patient was asymptomatic for 48 h. In the study conducted by Baraldi et al. (4), the most effective treatment for acute attacks was lidocaine infusion, and the most recommended drug for long-term treatment was lamotrigine. They drew attention to occipital nerve stimulation among non-pharmacological treatments.

PRF is a minimally invasive interventional technique used in chronic neuropathic pain (5). PRF therapy

consists of short bursts of high-frequency current followed by a heat-release interval of 480 m, which ensures that the temperature of the tissue to be treated does not exceed 42°C. The neuromodulative effect is seen instead of thermal nerve damage at 42°C (6).

Similarly, in the SUNCT research by Gonzalez et al. (7), the GON PRF was applied in a single area in two cycles at 42°C for 120 s as palliative (pain) treatment.

In the present study, the applied GON PRF aimed to reduce the size of the lesion by processing two different points. Furthermore, the use of ultrasound guidance and GON PRF techniques in the applied block provides superiority to other landmark techniques. Applying the GON block using a particle-free steroid and then switching to the GON PRF application, due to the short duration of 2-3 days, brings to mind the need for further studies in this area.

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**Informed Consent:** Written informed consent was obtained from patient who participated in this study.

**Conflict of Interest:** The authors declares that they have no conflict of interest.

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## REFERENCES

1. IHS Classification ICHD-3. 3.3 Short-lasting unilateral neuralgiform headache attacks. <https://ichd-3.org/3-trigeminal-autonomic-cephalalgias/3-3-short-lasting-unilateral-neuralgiform-headache-attacks/>. Accessed May 10, 2023.
2. Leroux E, Ducros A. Occipital injections for trigemino-autonomic cephalalgias: Evidence and uncertainties. *Curr Pain Headache Rep* 2013; 17:325. [CrossRef]
3. Porta-Etessam J, Cuadrado ML, Galán L, Sampedro A, Valencia C. Temporal response to bupivacaine bilateral great occipital block in a patient with SUNCT syndrome. *J Headache Pain* 2010; 11:179.
4. Baraldi C, Pellesi L, Guerzoni S, Cainazzo MM, Pini LA. Therapeutical approaches to paroxysmal hemicrania, hemicrania continua and short lasting unilateral neuralgiform headache attacks: A critical appraisal. *J Headache Pain* 2017; 18:71.
5. Sluijter ME. Pain in Europe, Barcelona. Non-thermal radiofrequency procedures in the treatment spinal pain. 2<sup>nd</sup> Annual Congress of the European Federation of IASP Chapters, 1997, p. 326.
6. Podhajsky RJ, Sekiguchi Y, Kikuchi S, Myers RR. The histologic effects of pulsed and continuous radiofrequency lesions at 42 degrees C to rat dorsal root ganglion and sciatic nerve. *Spine (Phila Pa 1976)* 2005; 30:1008-1013.
7. Gonzalez FL, Blasco IB, Ferri CM. Pulsed radiofrequency on the occipital nerve for treatment of short-lasting unilateral neuralgiform headache: A case report. *Cephalalgia Reports* 2020; 3.