Letters to the Editor

# Comment on"The Efficacy and Safety of Applying the Combination of Pulsed Radiofrequency and Platelet-Rich Plasma to the Gasserian Ganglion for the Treatment of Idiopathic Trigeminal Neuralgia: A Protocol for A Multi-Center, Prospective, Open-Label, Propensity Score Match Cohort Study"

## To the Editor:

We read with great interest the study by Ren et al. titled "The efficacy and safety of applying the combination of pulsed radiofrequency and platelet-rich plasma to the gasserian ganglion for the treatment of idiopathic trigeminal neuralgia: A protocol for a multi-center, prospective, open-label, propensity score match cohort study (1)." This groundbreaking research pioneered the innovative combination of pulsed radiofrequency (PRF) and platelet-rich plasma (PRP) in trigeminal ganglion therapy, offering new therapeutic approaches for drug-resistant trigeminal neuralgia (TN). However, building on emerging clinical evidence and our experience in managing complex neuropathic pain cases, we would like to engage in a methodological discussion with the authors. These insights aim to enhance both the scientific rigor and clinical relevance of the study while respecting the authors' innovative vision.

The first consideration relates to control group design. When designing control groups, it is important to consider that the current protocol compares PRF combined with PRP injection against PRF alone. However, injecting 2 mL of liquid exclusively in the experimental group may introduce confounding factors, such as differences in procedural duration and mechanical decompression effects resulting from hydraulic pressure-induced separation of neurovascular adhesions. To more accurately evaluate the true therapeutic value of PRP, it is recommended that the PRF group receive an equivalent volume (2 mL) of normal saline injection.

Secondly, existing evidence indicates that combining PRF with glucocorticoids (e.g., dexamethasone) achieves superior pain relief. For instance, a double-blind randomized controlled trial by Li et al (2) demonstrated thatPRF with dexamethasone injection into the gasserian ganglion significantly outperformed PRF alone (saline control) for trigeminal neuralgia. Adding a PRF+glucocorticoid control group would enable systematic comparisons among three arms: PRF+PRP (experimental), PRF+glucocorticoid (active control), and PRF+saline (baseline control). This design precisely quantifies PRP's independent therapeutic contribution, thereby enhancing the clinical translational value of research findings.

Furthermore, we have developed distinct perspectives regarding the duration of PRF therapy mentioned in the author's methodology. Based on current literature and clinical experience from our department, we recommend keeping PRF sessions within 10-15 minutes to maximize therapeutic efficacy while minimizing side effects. Shorter durations may yield suboptimal results, whereas extended sessions could increase tissue damage risks (3). Thus, for the authors' proposed 2-phase PRF protocol (120 seconds each), we suggest extending duration within this evidence-based range to achieve optimal therapeutic outcomes.

Finally, in our department's trigeminal nerve interventional therapy, after puncture was in place under computed tomography guidance, the PRF therapy parameters were set as follows: a treatment temperature of 42°C, a frequency of 2 Hz, a treatment duration of 900 seconds, and a maximum voltage (not exceeding 100 V). Upon the completion of the PRF therapy, we adopted contrast dye visualization as an auxiliary technique to confirm again whether the puncture needle had successfully entered the Gasserian ganglion and mandibular nerve, 1 mL of 2% Lidocaine, 1 mL of 1% Ropivacaine, 1 mL of normal saline and 40 mg of meth-

ylprednisolone were subsequently administered (Fig. 1). This approach has shown a high rate of pain relief and safety in previous clinical practice.

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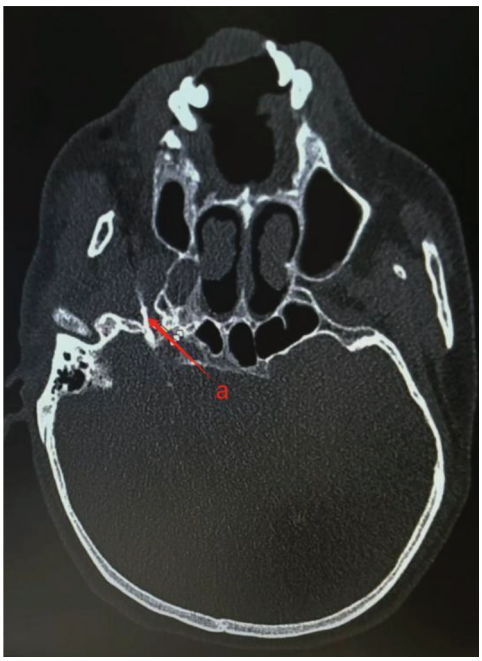


Fig. 1. *A contrast agent of 0.5 mL was injected with a puncture needle, and the contrast agent was diffused into the mandibular nerve through the foramen ovale. Analgesic formula: Lidocaine 1 mL + Ropivacaine 1 mL+ methylprednisolone 1 mL/40 mg (a:contrast agent).*

## References

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