

Peripheral nerve blocks for chronic migraine:

A case report on long-term improvement following repeat multi-site injections

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Background

- Chronic migraine is a debilitating neurologic disorder with significant functional impairment.
- For patients who have **failed multiple pharmacologic preventives**, peripheral nerve blocks targeting extracranial sensory nerves can offer a valuable **non-systemic, targeted therapeutic option**.

Purpose

This case demonstrates the potential for serial peripheral nerve blocks to successfully manage severe, chronic migraines *in the long term*.

Materials & Methods

This single-patient case report is exempt from IRB review per institutional policy, as it includes no identifiable patient information. The patient provided informed consent for this report.

The Patient: A 30-year-old woman with a 10-year history of chronic migraines

• Mild	Daily, <u>constant</u> , waxing-and-waning left-sided periorbital pressure
• Moderate-Severe	Weekly left-sided periorbital, occipital, and temporal pressure with and without aura
Prior preventative therapies	Topiramate, nortriptyline, duloxetine, propranolol, CGRP monoclonal antibodies (inject), Gepants (oral)
Abortive therapies	Rizatriptan, Naratriptan

The Blocks

Targets	Greater and lesser occipital, auriculotemporal, supraorbital, supratrochlear nerves—identified via anatomical landmarks
Injectate	0.5% bupivacaine without steroid
Frequency/Duration	Every 3 months since February 2023 at an outside facility, continued at VMHC

References

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Results

1. Symptom changes

Migraine Characteristics	Baseline Pre-Block	1 month Post-Block	3 months Post-Block
Mild Migraine			
Average pain score (/10)	4.5	None	2.5
Duration	Constant	None	Constant
Days free of MILD migraine (per month)	0	30	0
Moderate-Severe Migraine			
Average [Peak] pain score (/10)	7 [9]	5 [6]	6 [6]
Duration	20 hrs - 4 days	7 - 10 hrs	10 hrs
Days free of MOD-SEV migraine (per month)	12 - 13	28	27
Symptoms			
Aura Symptoms	--	Improved	Improved
Cognitive Function	--	Improved	Gradual decrease
Sleep Quality	Same	Same	Same
Nausea/Vomiting	none	none	none
Light/Sound Sensitivity	none	none	none

2. Functional improvements

- The patient noted significant improvements in the above symptoms consistently lasting approximately 2.5 to 3 months.
- There was a gradual return of daily mild migraines, but severe migraines continued to be lesser in duration and severity
- Improvements affected several aspects of daily life:
 - Work—There was significantly less time spent away from work, as well as improved productivity and focus.
 - Home—More energy for household responsibilities.
- Blocks were also noted to decrease abortive medication use:
 - Patient self-limited to 2 abortives per month prior to block despite persistent discomfort.
 - She required 1 or fewer abortives per month during the block.

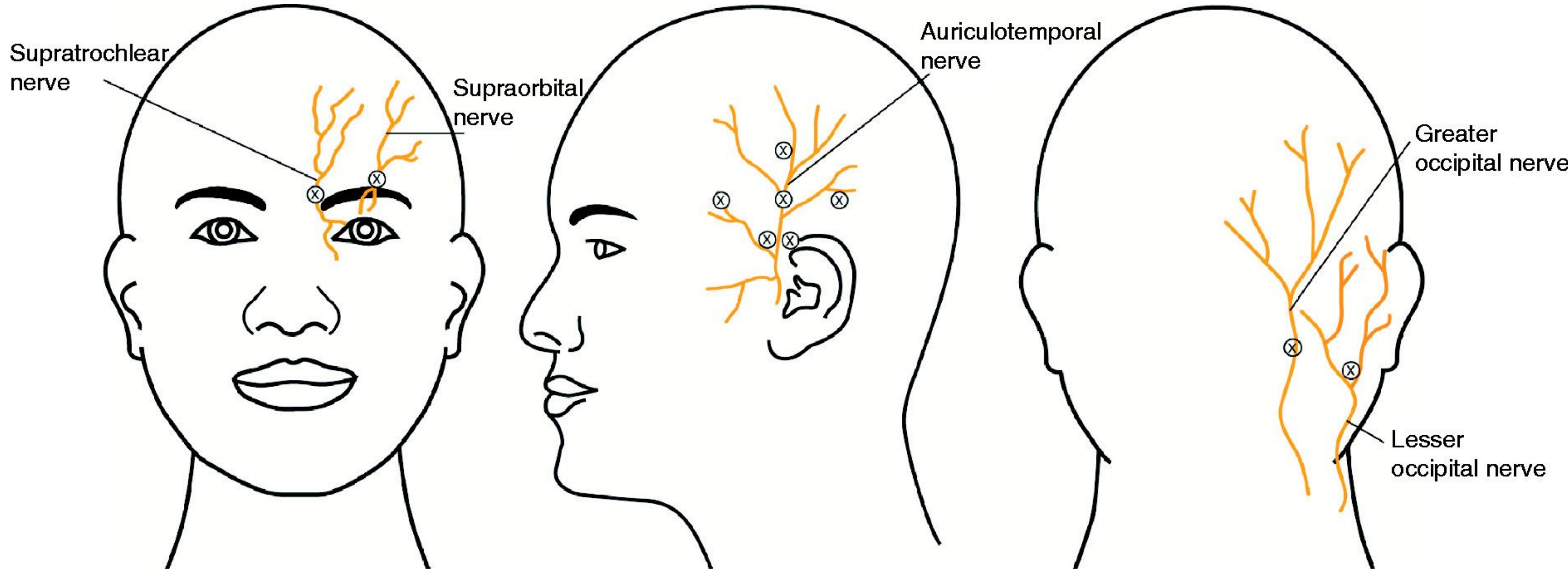


Figure 1. Illustration of the targeted nerves and block administration locations
Miller S, Lagrata S, Matharu M. Multiple cranial nerve blocks for the transitional treatment of chronic headaches. *Cephalalgia*. 2019;39(12):1488-1499.

Conclusions

- Peripheral nerve blocks are a well-tolerated and effective non-pharmacologic intervention for refractory chronic migraine.
- This case reports demonstrates sustained improvement lasting longer than previously studied interventions and the highlights the potential role for repeated injections for both symptom reduction and functional improvement.
- The sustained benefit experienced by this patient treated with multisite extracranial nerve blocks for over two years aligns with findings from previous literature suggesting that these interventions can reduce central sensitization and improve functional outcomes.
- While further research is needed to determine optimal patient selection and long-term efficacy, peripheral nerve blocks remain an important component of multidisciplinary migraine management.
- Further areas for research may include:
 - Effects of the block on common migraine symptoms not present in this particular individual—changes in sleep quality, nausea/vomiting, and sensory sensitivity
 - Efficacy of individual blocks on therapeutic efficacy
 - Effects of different local anesthetics or injectates on therapeutic efficacy
 - Long-term follow-up to assess if repeated injection sessions is a sustainable solution over multiple years, and if block efficacy is maintained or improved