

Learning to Speak the Same Language: Deep Dive into Occipital Neuralgia in a High-Volume Pediatric Neurology Center

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INTRODUCTION

- **Occipital neuralgia (ON):** an uncommon cranial neuralgia characterized by neuropathic pain in the occipital nerve distribution
- **Pediatric ON is poorly understood:** its true frequency, presentation, and optimal treatment algorithms are unknown
- Limited evidence and reliance on adult literature contribute to **under-recognition and variability in management, particularly in refractory cases**

This study aims to:

- 1. Characterize** the clinical features, management patterns, and treatment outcomes of pediatric patients with symptoms consistent with ON
- 2. Highlight** the need for interdisciplinary frameworks to improve identification, treatment, and referral patterns for pediatric ON

METHODS

Study design: Retrospective cohort using the CHOP Headache Registry (July 2016-August 2024)

- **N=14,876** pediatric patients evaluated for headache

Inclusion criteria: Identified patients with symptoms consistent with ON (meeting criteria 1-4):

1. Occipital location
2. Severe intensity ($\geq 7/10$)
3. Paroxysmal
4. Neuralgiform quality (stabbing or sharp)

- Included patients with overlapping headache diagnoses (e.g., migraine)

Data collected: demographics, headache characteristics, diagnostic workup, and treatments

Outcome measures: overall symptom improvement at most recent follow-up, response to treatment attempts

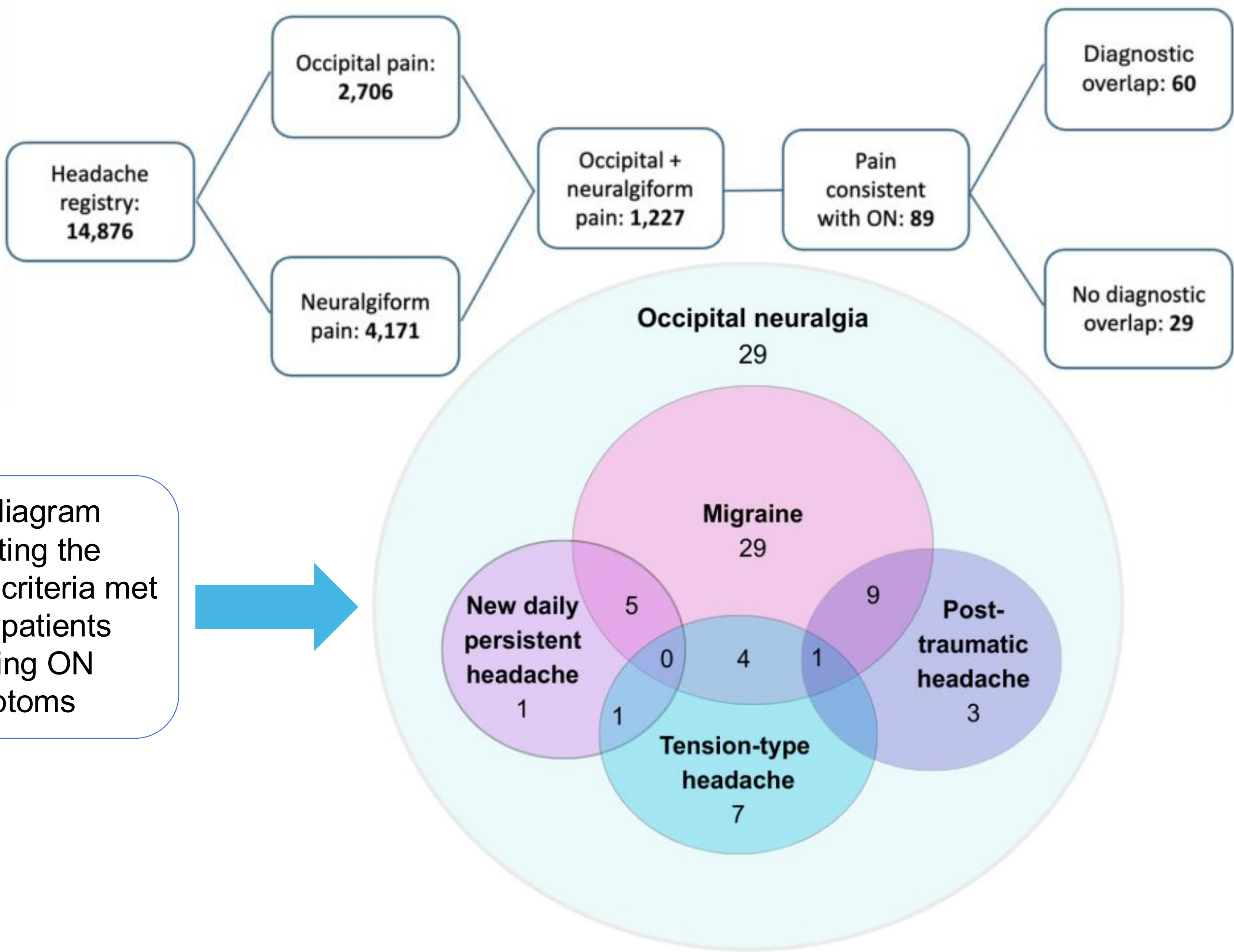
RESULTS

N=89 (0.6%) met symptomatic ON criteria
Median age: 13 years, 54% male

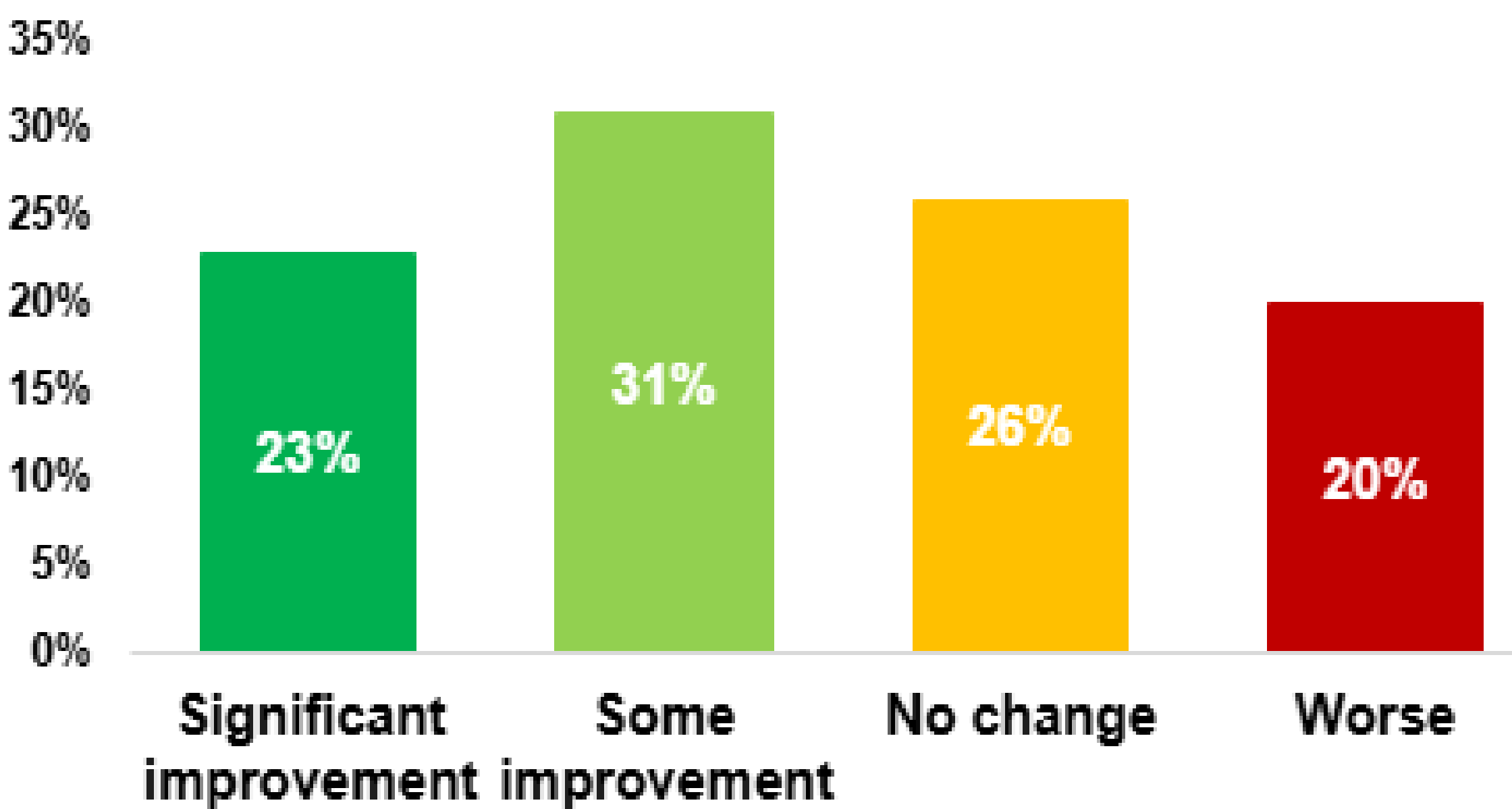
67% (N=60) met criteria for additional headache disorders.
33% (N=29) met ON criteria alone.

Headache Features	
Bilateral	66%
Unilateral	34%
Occipital-only	61%
Neuralgiform pain	100%
Pulsatile features	46%
Pressure-like	20%
Known inciting event	
Head trauma	8%
Surgery	1%
Clinically diagnosed with ON	7%

Venn diagram illustrating the diagnostic criteria met among patients reporting ON symptoms



51% follow-up (median 1.3 yrs), 35/45 treated



~50% had persistent symptoms despite treatment

CONCLUSION

- **ON is rare, but present in the pediatric population**
- **High degree of diagnostic and symptomatic overlap**
- A subset with symptoms of ON **remains refractory to medical management**
- There is a **need for clearer criteria for treatment escalation**
- **Interdisciplinary discussion may improve** diagnostic accuracy, standardization of care, and identification of candidates for surgical evaluation

Future Directions

- Prospective studies with standardized diagnostic criteria and pain mapping tools
- Define predictors of treatment response in pediatric ON
- Investigate the role of surgical evaluation + intervention