

OCCIPITAL NERVE BLOCKS

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HUNTSVILLE GRAND ROUNDS

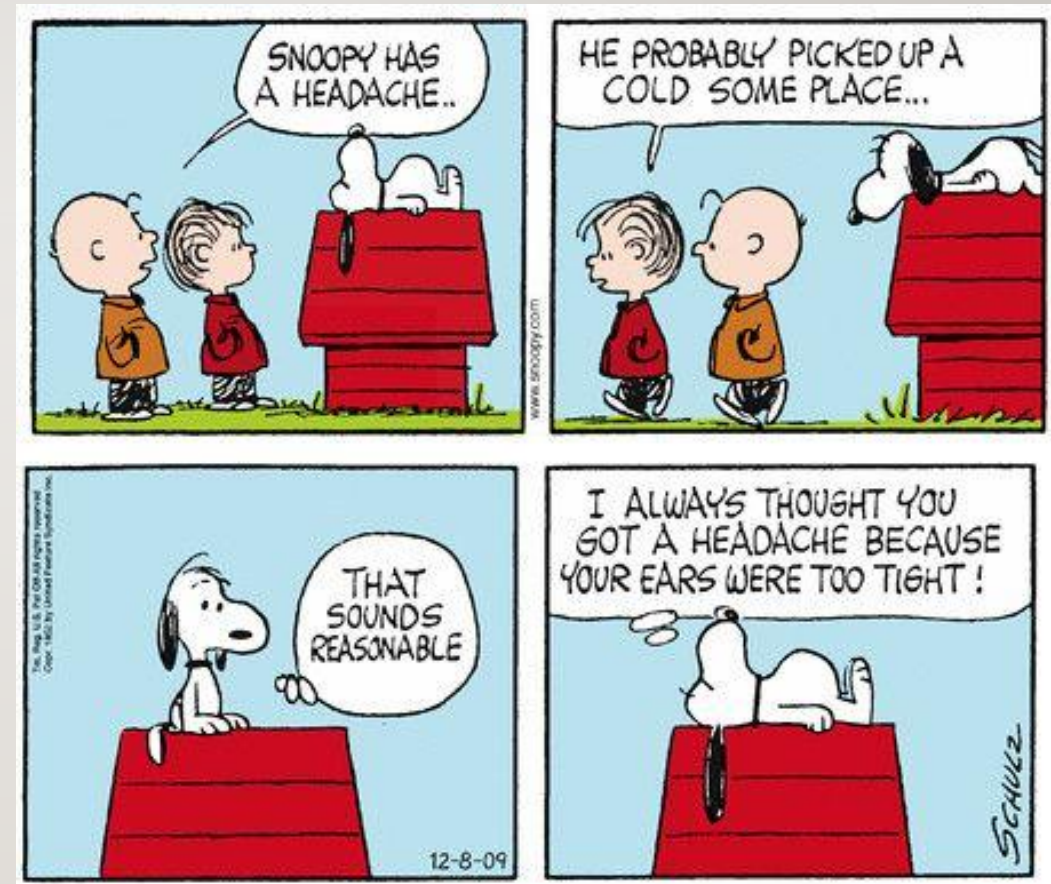
MAY 27, 2026

CONFLICTS / DISCLOSURES

- None

LEARNING OBJECTIVES

1. Describe the anatomy and surface landmarking of the occipital nerves
2. Describe the indications and contraindications for an occipital nerve block
3. Describe the technique to perform an occipital nerve block
4. Understand the expected benefits and risks of an occipital nerve block



THE CASE

HISTORY

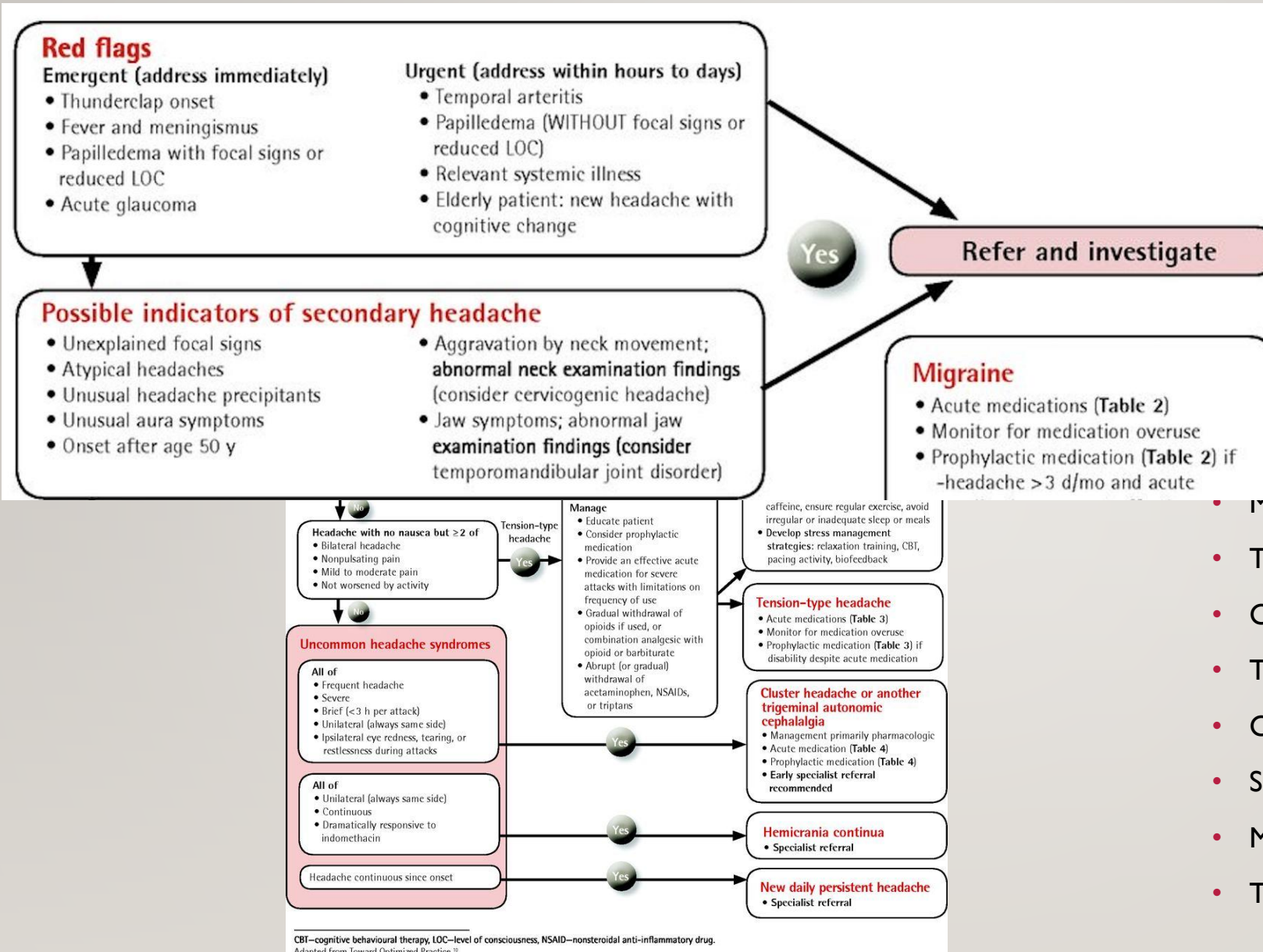
- 25-35 YO F
- Migraine x 1.5 months, photophobia, phonophobia, osmophobia
- Previous mild improvement with IV Ketorolac, Metoclopramide, Dimenhydrinate, Dex
 - Improvement lasted max 48hrs
- Pain starts at occiput (bilaterally) and radiates around head
- No fevers, meningeal signs, vision changes, paresthesia or FND
- Off work x3 weeks because of pain

PREVIOUS INVESTIGATIONS

- CT head / C-spine – normal
- Labs unremarkable
- Awaiting MRI (ordered by family MD)
- Had seen opto vs ophtho
- Awaiting neuro consult



HEADACHE BRIEF VIEW



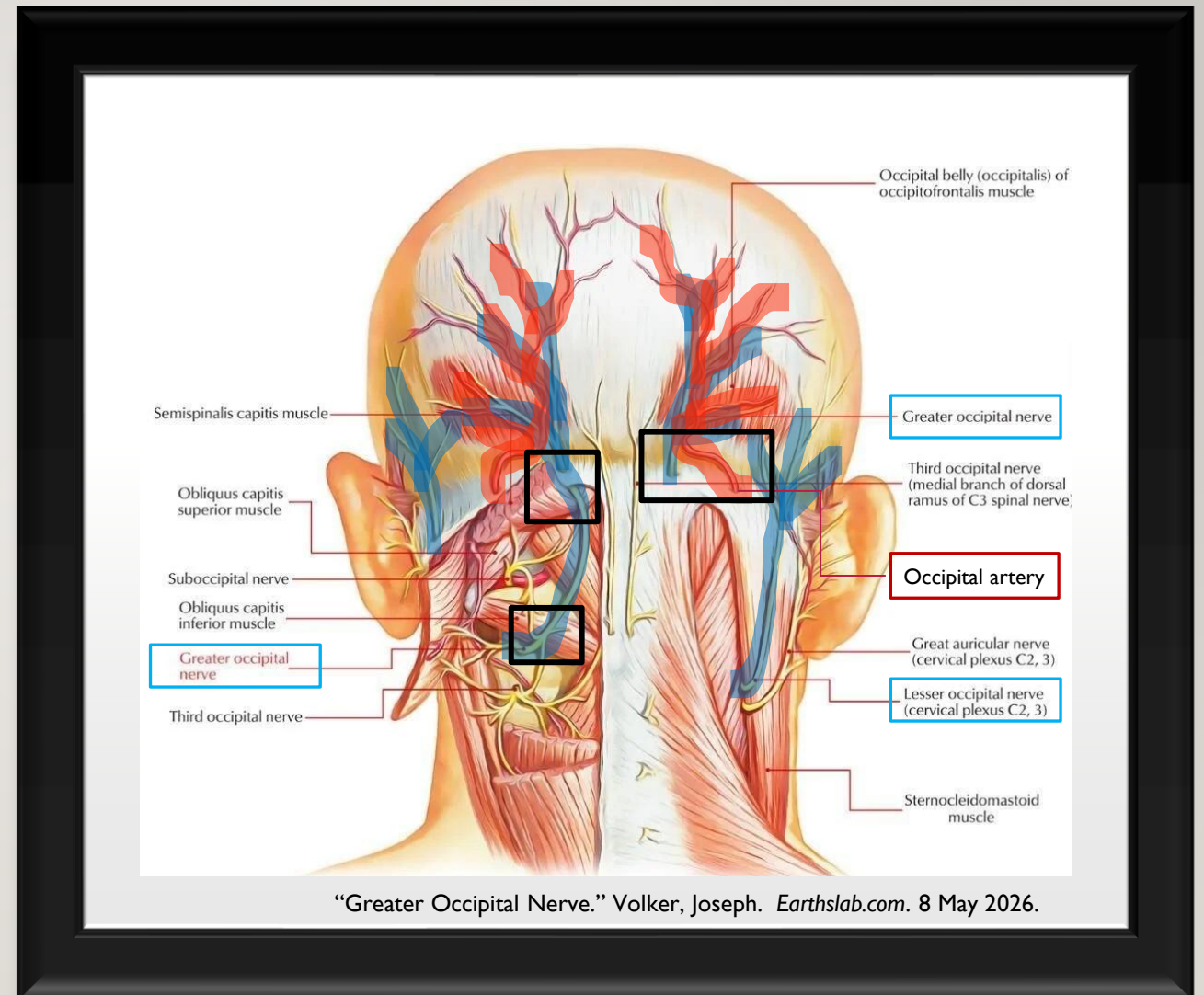
% report severe / debilitating headaches

- 1.4-2.2% report headaches for >15 days/month

- Migraine
- Tension
- Cluster
- Trigeminal Autonomic Cephalgia
- Cervicogenic
- Sinus
- Medication Overuse
- Trauma

OCCIPITAL NEURALGIA / HEADACHES

- Headaches / pain originating in occipital region / upper C-spine
 - Sharp / shooting / throbbing
 - Exacerbated by head movement or palpation
- Entrapment / Irritation
 - Trauma
 - DDD
 - Muscular
 - Idiopathic
- Mimics / Associations
 - Migraines
 - Cervicogenic
 - Cluster



INDICATIONS

- Primary or secondary treatment
 - Occipital Neuralgia
 - Migraines
 - PDPH
 - Cervicogenic
 - Cluster
- Scalp allodynia
- Reproducible pain

PATIENT

- Reproducible pain with palpation of bilateral GONs and lesser ONs



CONTRAINDICATIONS

ABSOLUTE

- Patient refusal
- Allergy to local anesthetic
- Open skull defect
- Infection at / over procedure site
- Recent surgery to occiput

RELATIVE

- Coagulopathy
- Arnold Chiari malformation
- Inability to stay still (lying or sitting)



THE BLOCK



CONSENT

BENEFITS

Relief of headache for hours to months

OVERALL

Low risk, minimally invasive

RISKS

Common

- Pain, redness, swelling
- Dizziness
- Numbness
- Failure

Less Common

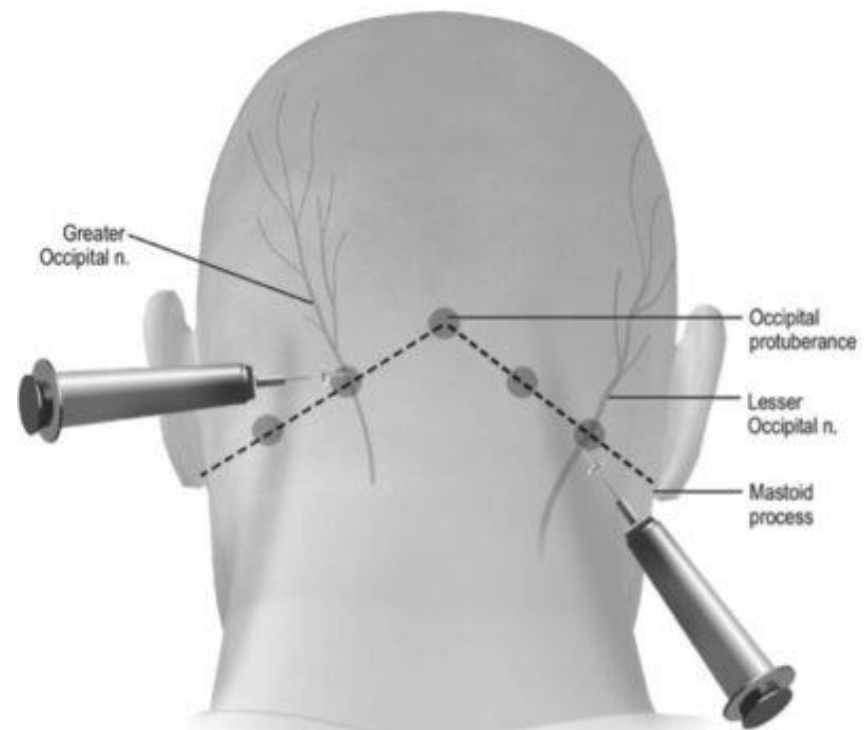
- Syncope / pre-syncope
- Transient dysphagia
- Facial edema
- Worsening headache
- Nerve trauma / injury
- Hematoma
- Infection
- LAST
- Alopecia at injection site if steroid is used

EQUIPMENT

- 5-cc syringe
- 25 - 27-gauge needle
- Povidone-iodine or chlorhexidine
- Lidocaine 2% (2-4 mL) or Bupivacaine 0.25 or 0.5% (2-4 mL)
- +/- Anti-inflammatory
- +/- Methylprednisolone 40 mg/mL (2 mL)
- +/- Dexamethasone 2 mg/mL (2 mL)
- The total injection volume ~ 4 mL per side



LANDMARKING & INJECTING

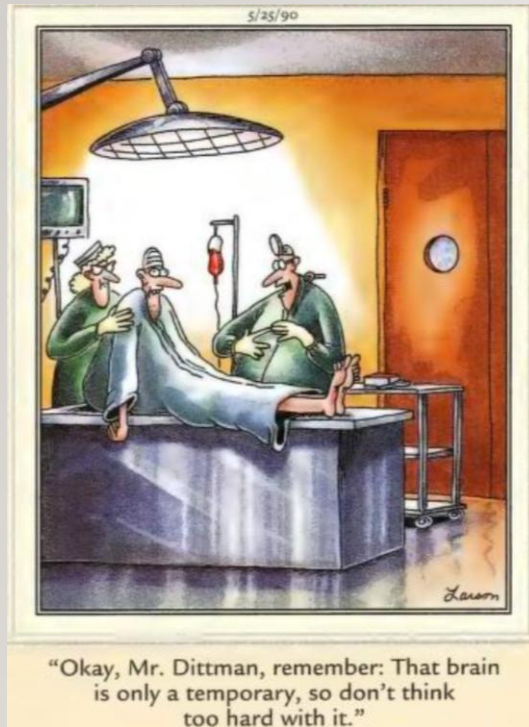


POST BLOCK

- Pressure x 5-10 mins
- Pain typically improves in 20-30 mins
 - Lasts hours to months
 - If >3 blocks in 6 months, consider additional or alternative Tx
- Numb scalp x 1 - 4 hrs.



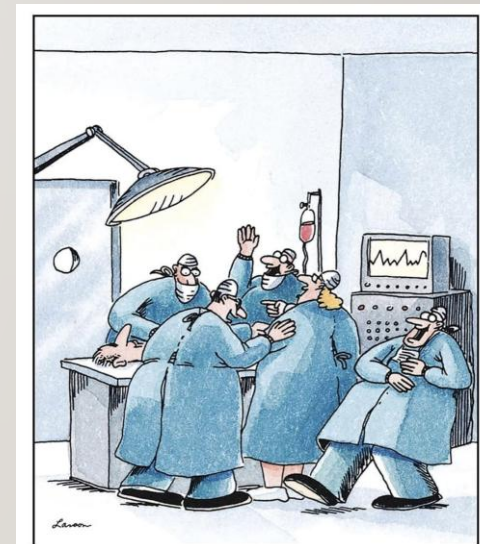
THE EVIDENCE



- 2023 Systematic Review, Evans et al
 - 12 RCTs, 586 patients
 - Any headache
 - Reduction in H/A severity at 5-20 mins post injection
 - Reduction in H/A severity between 1-6 weeks
- 2024 Systematic Review, Mustafa et al
 - 8 RCTs, 268 patients
 - Chronic migraines
 - Reduction in H/A intensity and frequency after 1 month

THE PATIENT

- Consented to the procedure
- 5cc 0.25% bupivacaine per side at points of maximal tenderness (fanned in direction of lesser ON)
- 20 mins post
 - Patient found crying because H/A was gone
- 23 days later
 - Neck feeling tight, requested additional block – no ON tenderness
 - Referred to physiatry (in consult with Dr. Baker to ensure appropriate referral)
- Dr. Baker
 - Additional blocks
 - Botox
 - "She is amazing"



Carlton falls for the old rubber-scalpel gag.

REVIEW

- Safe
- Primary occipital neuralgia
- Secondary cervicogenic, tension, migraine, cluster
- Fast, easy, can be done in office



OK, stranger...
What's the circumference
of the Earth?...Who
wrote "The Odyssey"
and "The Iliad?!"...What's
the average rainfall of
the Amazon Basin?

Bart, you fool!
You can't shoot
first and ask
questions later!

QUESTIONS

REFERENCES

- Afridi SK, Shields KG, Bholra R, Goadsby PJ. Greater occipital nerve injection in primary headache syndromes--prolonged effects from a single injection. *Pain*. 2006 May;122(1-2):126-9. [[PubMed](#)]
- Evans AG, Joseph KS, Samouil MM, Hill DS, Ibrahim MM, Assi PE, Joseph JT, Kassis SA. Nerve blocks for occipital headaches: A systematic review and meta-analysis. *J Anaesthesiol Clin Pharmacol*. 2023 Apr-Jun;39(2):170-180. doi: 10.4103/joacp.JOACP_62_21. Epub 2023 Apr 25. PMID: 37564833; PMCID: PMC10410037.
- Guideline for primary care management of headache in adults. Werner J. Becker, Ted Findlay, Carmen Moga, N. Ann Scott, Christa Harstall and Paul Taenzer. *Canadian Family Physician* August 2015; 61 (8) 670-679;
- Helman, A. MacArthur, M. Chernoff, I. Rosenberg, H. Segeren, S. Long, B. Booth, K. *EM Quick Hits 65 – Occipital Nerve Block, PoCUS in Pulmonary Embolism, Myelopathy, Team Resuscitation, Incidental Neutropenia, Peer Programs. Emergency Medicine Cases. June, 2025. <https://emergencymedicinescases.com/em-quick-hits-june-2025/>. Accessed May 8, 2026.*
- Levin M. Nerve blocks in the treatment of headache. *Neurotherapeutics*. 2010 Apr;7(2):197-203
- Mckenzie D, Hinson MR. Occipital Nerve Block. [Updated 2025 Jul 30]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK580523/>
- Mustafa, M.S., bin Amin, S., Kumar, A. et al. Assessing the effectiveness of greater occipital nerve block in chronic migraine: a systematic review and meta-analysis. *BMC Neurol* 24, 330 (2024).
- Pincherle A, Bolyn S. Cerebellar syndrome after occipital nerve block: A case report. *Cephalalgia*. 2020 Sep;40(10):1123-1126. doi: 10.1177/0333102420929015. Epub 2020 May 25. PMID: 32447975.