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When the Pressure Drops and the Vessels Narrow: A Complex Case of Headache Overlap

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Disclosures: Tommy Chan, MBBS, FRCPC, ABPN, UCNS

Consultant/Advisory Boards: AbbVie, Linpharma, Lundbeck, Eli Lilly, Pfizer, Novartis, Miravo, Teva

Honoraria: AbbVie, Linpharma, Lundbeck, Eli Lilly, Pfizer, Novartis, Miravo, Teva, Organon

Educational Grants (research or education): Novartis, Teva

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Identification

Patient Profile

- 38-year-old right-handed female
- Works in hospital housekeeping
- Lives with husband and two children

Presenting Concern

- New onset daily headache

Image Created using OpenAI's DALL·E, via ChatGPT. (2025). *AI-generated image of a 38-year-old Caucasian woman (hospital housekeeper) with new daily headache.* Retrieved from ChatGPT session on July 28, 2025

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Past Medical History

Pre-existing Headache History	Comorbidities	Surgical History	Family History	Current Medications
• 10 headache days/month • 5 days with migraine features (photophobia, nausea) • Diagnosis: Episodic migraine without aura	• Depression • Anxiety • Hypothyroidism • Fe Deficiency Anemia	• Hysterectomy • Jaw surgery	• Mother with migraine	• Escitalopram 20 mg • L-thyroxine 100 mg • Fe supplements • Acetaminophen & Ibuprofen (as needed)

History of Presenting Illness

ER Visit

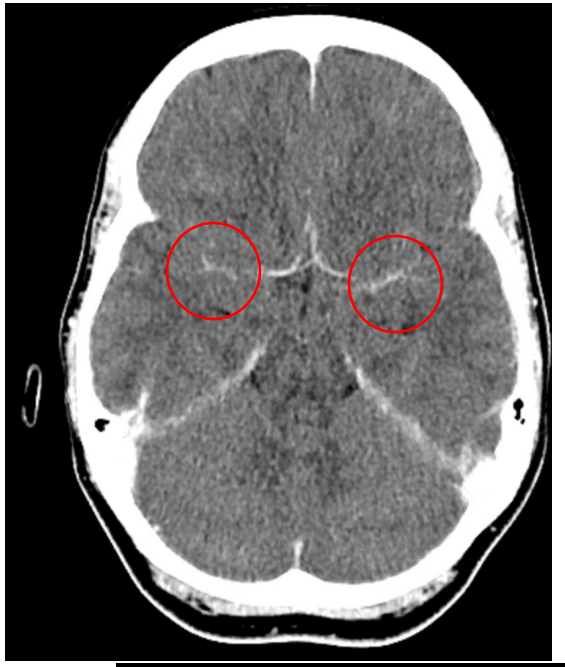
- Upper respiratory tract infection with profuse cough
- New onset daily headache, neck pain, and tinnitus
- Headache worsened with Valsalva maneuvers and being upright, improved lying flat

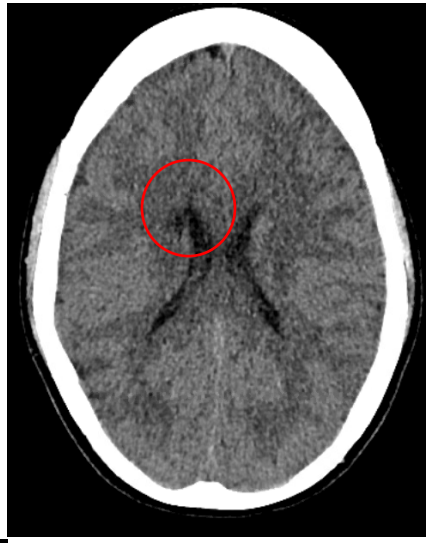
Urgent Neurology Clinic Referral

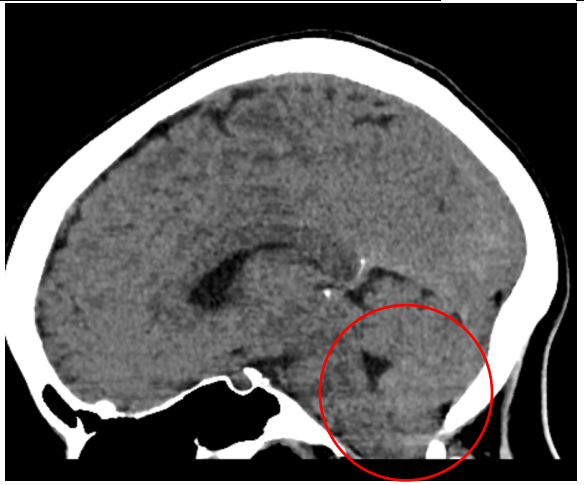
- CT Head with angiogram - bilateral ICA-MCA stenosis, lacunar infarct, cerebellar tonsillar descent

Secondary Headache Diagnoses

- Moyamoya disease
- Intracranial hypotension due to CSF leak







ICA – Internal Carotid Artery MCA – Middle Cerebral Artery CSF – Cerebral Spinal Fluid

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Referral to…

Stroke Neurology	Anesthesia	Headache Clinic
• Confirmed diagnosis of Moyamoya disease • Secondary cause ruled out • Vasculitis workup: (-) • Started ASA 81 mg	• 1st blind EBP ~50% relief x 1 week • 2nd blind EBP: Ineffective	• Comprehensive headache assessment and management • MRI head (contrast) & whole spine – part of CSF leak workup

EBP – Epidural Blood Patch CSF – Cerebral Spinal Fluid

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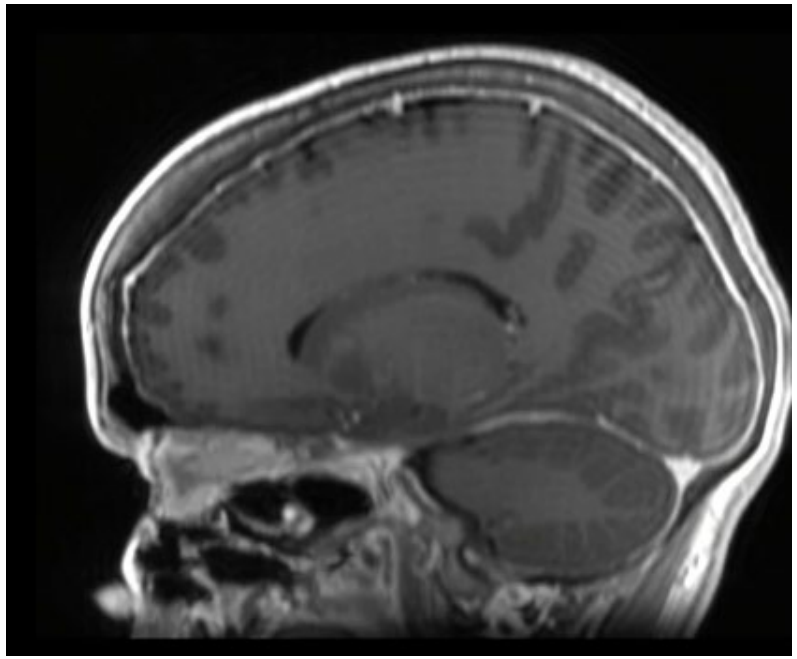
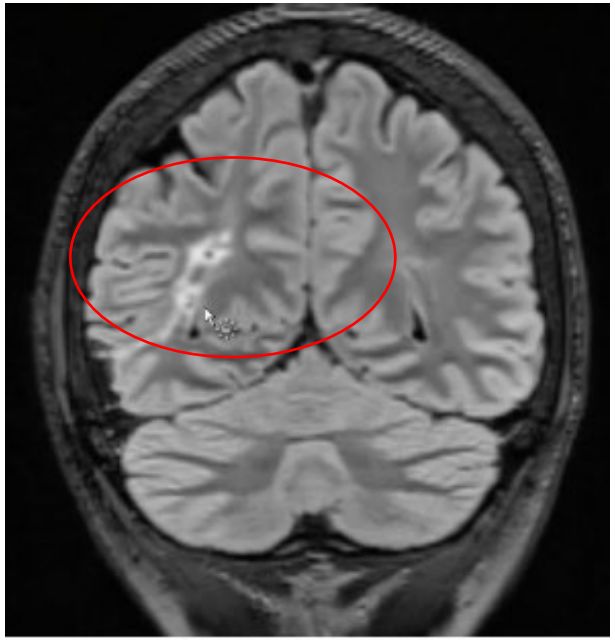
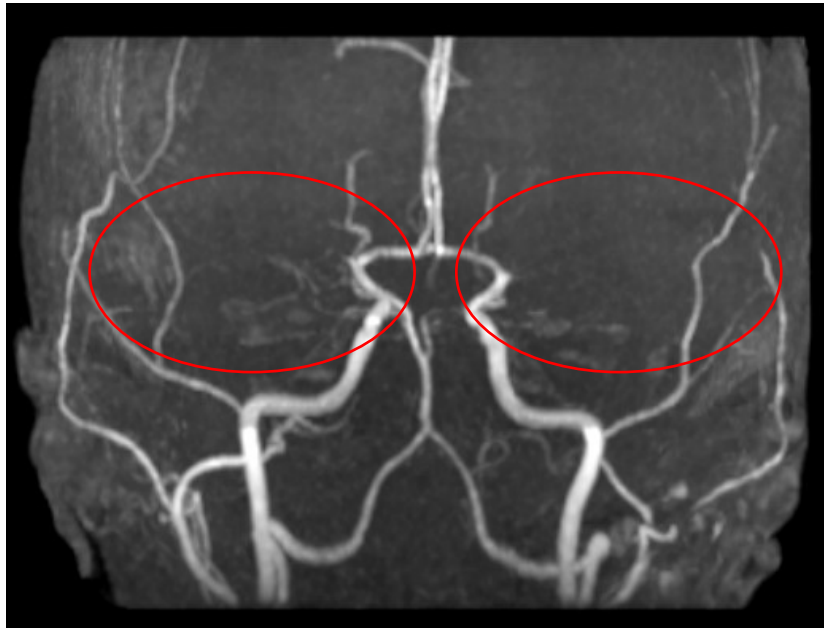
MRI Head with Contrast + Angiogram







Not shown: MRI spine – negative for extradural fluid collection

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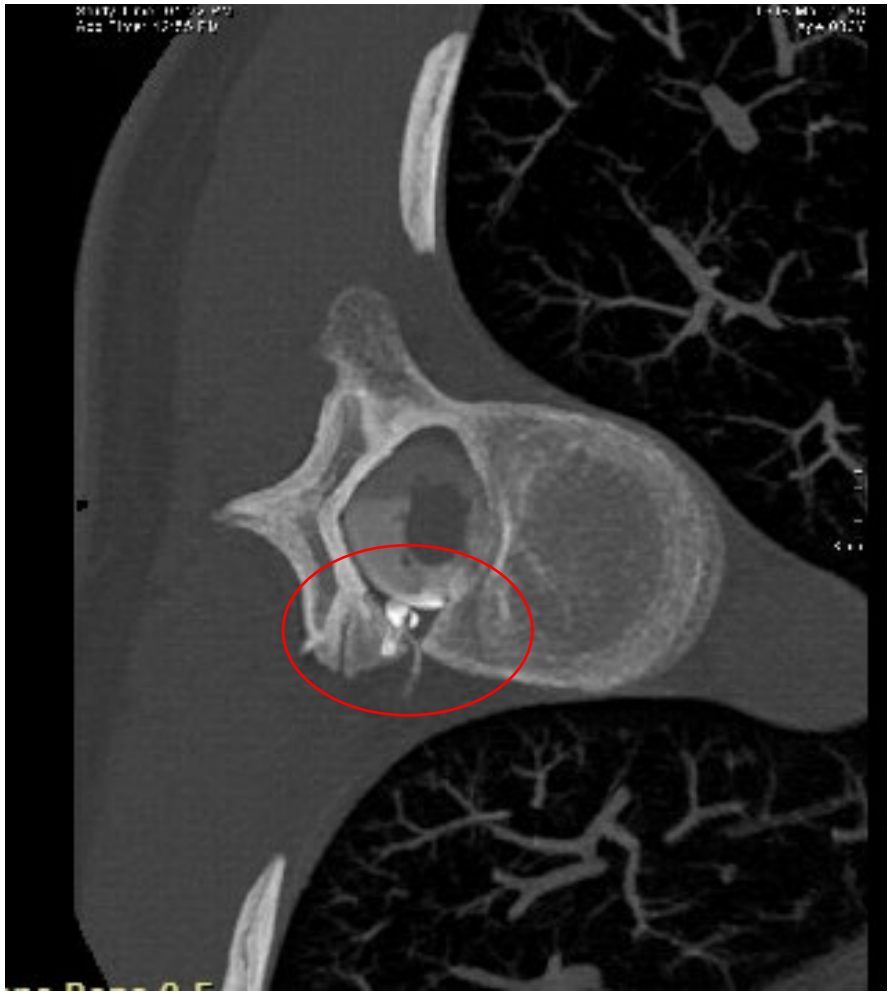
CT Myelogram → CSF Venous Fistula at Left T11/T12 → Embolization



Opening Pressure – 4 cm H20 (Low)

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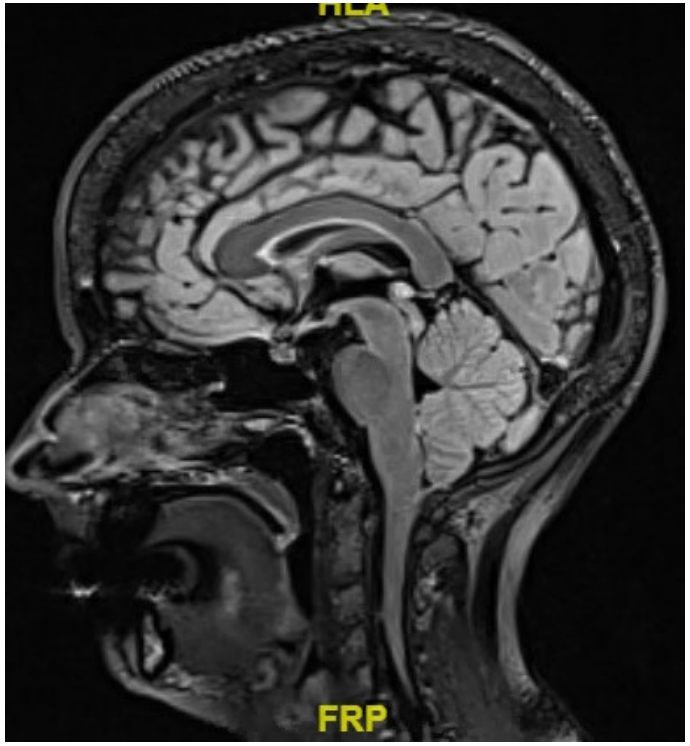
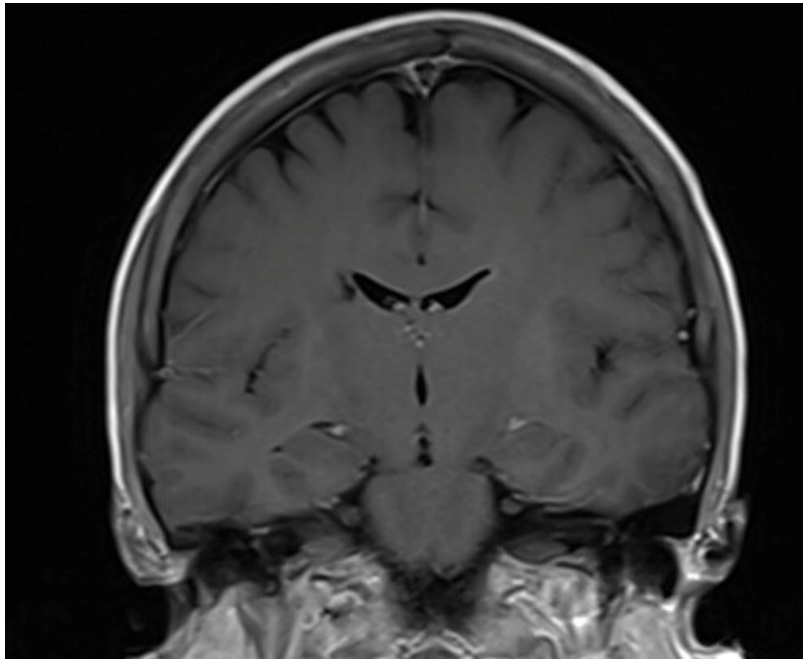
Follow Up MRI Head with Contrast





Intracranial Hypotension Resolved

Not shown:

1. Better caliber of PCA and PCOM. Better collateralization of arteries compared to prior angiogram.
2. Neurosurgery consult: Perfusion was good, not good candidate for EC-IC bypass from a Moya Moya perspective

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Clinical Evolution

Headache Evolution	Acute Medication Use	Other Medical Updates
• Initial relief (3 pain-free days), but headache started to get worse again…. • Daily headaches, non-orthostatic • Worse in the morning, with photophobia and nausea • No rebound CSF hypertension or papilledema • Lost to follow up at the headache clinic….	• Started seeking acute medications through primary care physician • Morphine CR 15–30 mg • Oxycodone/acetaminophen (2–4 tabs/day)	• Bipolar disorder → Started valproic acid & lamotrigine • Genetic Assessment & Testing - negative for connective tissue disorders • Moya Moya and Stroke – Stable

Episodic Migraine → Chronic Migraine

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Headache Clinic - Headache Treatment

Failed Preventive Treatment

1. Amitriptyline 30 mg – Grogginess
2. Topiramate 25 mg – Brain fog
3. Propranolol 40 mg BID – Ineffective
4. Verapamil 80 mg TID – Ineffective
5. Venlafaxine 150 mg – Ineffective
6. Fremanezumab 225mg monthly (samples) x 3 months – Ineffective

Trial of each preventive medications: >3 months, except amitriptyline and topiramate due to side effects

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Headache Clinic - Headache Treatment

Acute Treatment

- Ubrogepant: Cautious use (due to history of stroke), provides pain relief (Moderate/Severe → Mild Intensity)
- Opioids taper (Stopped Oxycodone/acetaminophen)
- **No triptans due to history of stroke**

Preventive Treatment

- Candesartan 16mg – unclear effect
- OnabotulinumtoxinA 155 units q3 months→ 6 weeks benefit, ↓ daily headache pain 8/10 → 5/10

Bridge Treatment

- Nerve blocks (pancephalic)→ 2 weeks relief

Ongoing follow up with Psychiatry – Beneficial

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Key Takeaways (PEARLS)

- A patient can have **more than one headache disorder (Primary & Secondary)**
- Even after the **secondary headache resolves**, headache may persist
  - Example: **Episodic migraine may transform into Chronic migraine** following head injury, CNS infection, cerebral venous sinus thrombosis, High CSF or Low CSF Pressure disorders MOH, new psychiatric diagnoses etc.
- This reflects a process of **central sensitization**.

Risk factors for primary headache (migraine) chronification

- Medication overuse
- Pre-existing migraine diagnosis
- Psychiatric comorbidities
- New secondary headache disorders

CGRP targeted therapies (mAbs, gepants) are effective for migraine in general, however

- Exercise caution in patients with cerebral vascular disorders i.e. Moya Moya (Stroke)
- Weigh benefits vs risks in management of migraine

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THANK YOU