



The dark side of migraine: recognizing idiopathic intracranial hypertension

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Introduction:

Migraines are among the most common reasons for consultation in neurology practices. Some patients may experience secondary headaches that mimic migraines¹. One such condition is Idiopathic Intracranial Hypertension (IIH). Recent advancements have highlighted the role of venous sinus stenosis in IIH. Given that treatment with minimally invasive procedures such as endovascular stenting yields excellent results in reducing headaches, it is crucial to recognize the disease early to ensure timely and appropriate management.^{2,3}

Objective: To describe the clinical course of patients with migraine and IIH coexisting with venous sinus stenosis (VSS).

Methods:

Baseline demographics and clinical features of five female patients initially diagnosed with migraine, later found to have imaging findings suggestive of secondary headache, were retrospectively reviewed. Final diagnosis was IIH associated with VSS. Data from a tertiary neurology center included brain MRI, lumbar puncture (LP), and cerebral pan-angiography with venography. All underwent venous sinus stenting. Clinical data collected pre- and post-stenting included migraine criteria, headache characteristics, pharmacological treatment, and acute analgesic overuse. Patients provided informed consent for publication.

Results:

Five patients initially diagnosed with migraine were subsequently identified as having IIH. Age at migraine diagnosis ranged from 10 to 38 years. Imaging was indicated by tinnitus, transient visual loss, progressive headache, and papilledema, revealing stenosis in transverse and/or sigmoid sinus or junction. Cerebrospinal fluid pressures varied widely (20-47 cmH2O). After stenting, headache frequency significantly reduced from an average of 30 to 2 days/month, and acute analgesic overuse notably decreased. These findings highlight the importance of considering IIH in chronic migraine-like headaches, especially when headache patterns change.

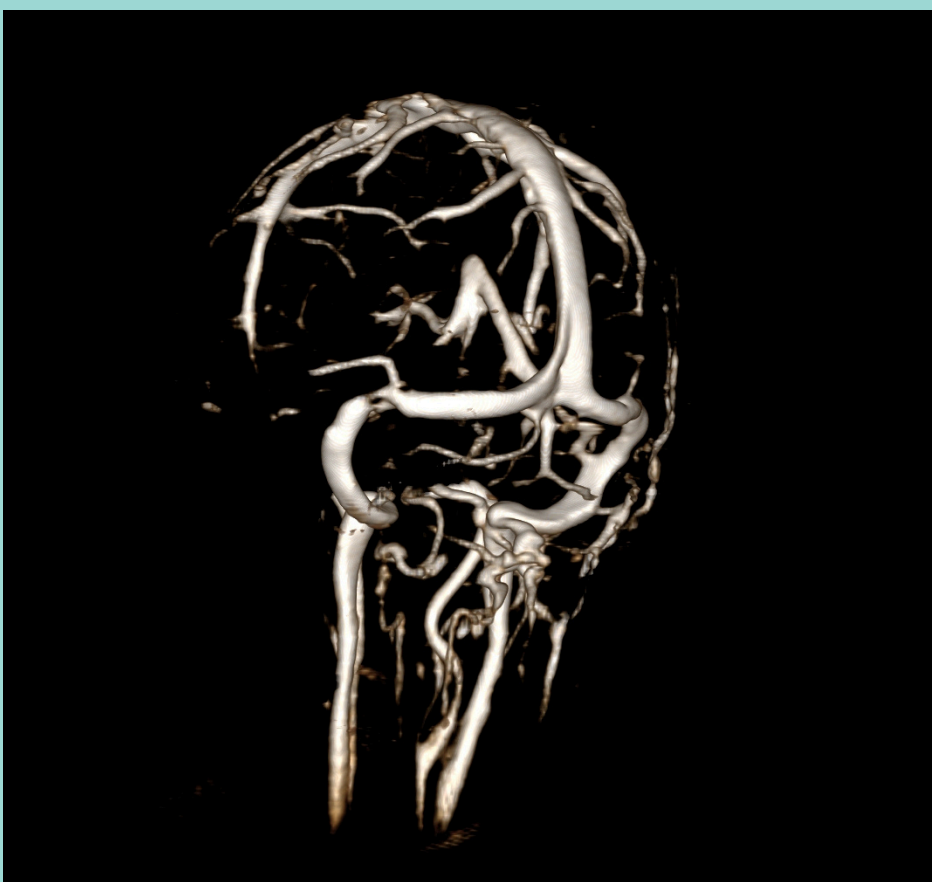
Table 1: Patient characteristics

Age at migraine diagnosis (years-old)	Age at IIH diagnosis (years-old)	BMI	Brain imaging indication	CSFP (cmH2O)	Venous stenosis anatomic location	Cerebral venography gradient (mmHg)	HDM pre-stenting/post-stenting	MOH pre-stenting/post-stenting
32	36	40	Tinnitus and transient visual loss	20	Right Transverse sinus	17	30/2	Yes/No
38	43	36	Papilledema	30	Left transverse sinus with sigmoid sinus	8	30/4	Yes/No
10	49	27	Valsalva headache	N/A*	Both Transverse sinus	13	20/3	Yes/No
23	25	29	Progressive headache	47	Bilateral stenosis at the transverse sigmoid junction	16	30/2	Yes/No
16	24	33	Change in the pain pattern	30	Left transverse sinus	10	30/7	Yes/No

*Patient with Arnold Chiari, lumbar puncture not feasible.

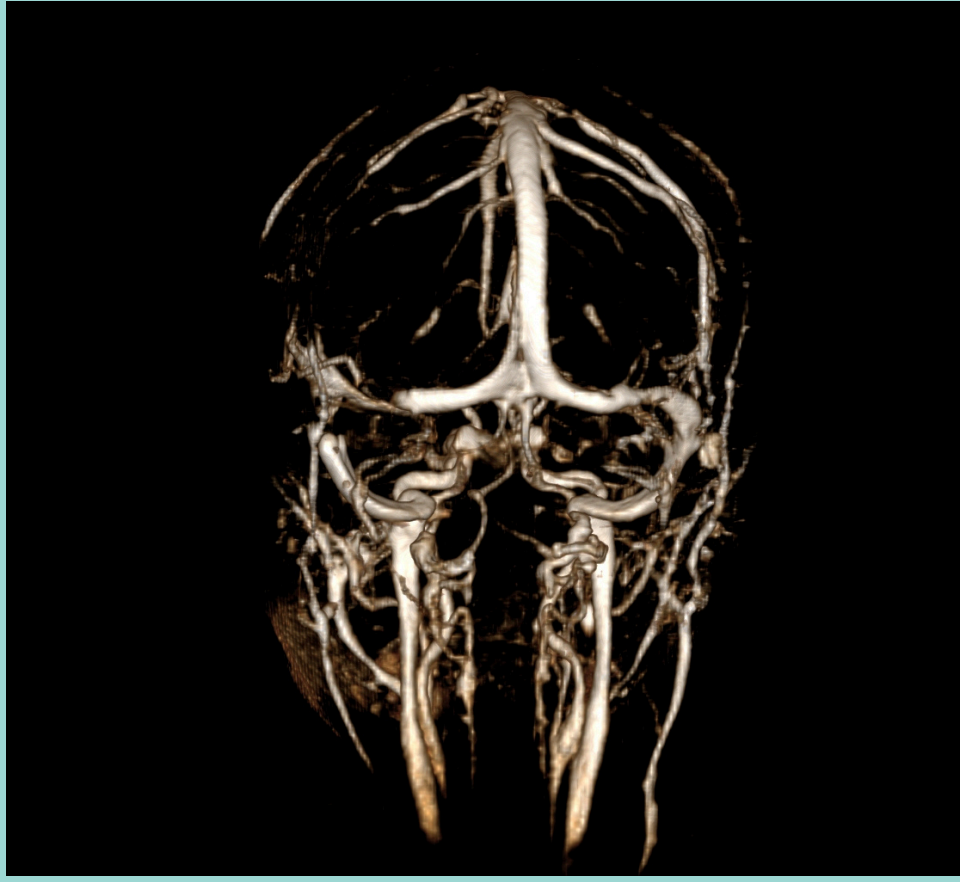
IIH: Idiopathic Intracranial Hypertension, BMI: Body Mass Index, CSFP: Cerebrospinal Fluid Pressure, HDM: Headache Days per Month, MOH: Medication Overuse Headache.

Figure 1: Contrast-enhanced 3D veno-MRI reconstruction pre-stent



Critical stenosis of approximately 90% at the interface between the left transverse and sigmoid sinuses, immediately distal to the emergence of the vein of Labbé

Figure 2: Contrast-enhanced 3D veno-MRI reconstruction post-stent



On the left side, there's a signal void segment in the transverse sinus at its interface with the sigmoid sinus due to the presence of a stent. This shows adequate distal flow, indicating permeability. The irregularity of the right transverse sinus prior to its interface with the sigmoid sinus persists, but it's not causing significant stenosis and remains stable when compared to previous MRI scans.

Figure 3: Venous sinus angiography



A. Severe stenosis of the left transverse/sigmoid sinus junction.



A. Transverse/sigmoid sinus junction post-angioplasty with stent, with recovery of sinus caliber.

Conclusion:

Unlike most published series describing surgical interventions with higher morbidity, our patients were treated promptly with endovascular stenting, achieving excellent pain control without complications. Intracranial hypertension syndrome lacks a pathognomonic headache phenotype; however, its strong association with migraine can lead to diagnostic confusion. Recognizing key clinical variables allows timely therapeutic interventions with significant clinical impact. "Do not let a clear understanding of migraine obscure your view of its darker aspects".

1 Sacco et al. *The Journal of Headache and Pain* (2020) 21:76
2 Capuzzo JM, et al. *Neurosurg Focus* (2018.) 45 (1):E11
3 Fargen KM, et al. *Cephalalgia* (2023). 43(4) 1–11.