

Clinical Image

David B. Villafuerte*, DO

Bilateral idiopathic superior ophthalmic vein dilation

<https://doi.org/10.1515/jom-2021-0299>

Received December 27, 2021; accepted June 14, 2022;
published online July 11, 2022

An 83-year-old woman presented to the outpatient clinic in December 2020 with the complaint of recurrent bilateral frontal headaches for 3 months. She did not identify any precipitating factors. She described the headaches as random, dull in nature, non-positional, and non-radiating. She denied nausea, vomiting, phonophobia, or photophobia. Most headaches were rated 6 out of 10 in severity, with 10 being the worst, but she

had a severe episode one week prior to the initial outpatient visit where she rated the severity as 10 out of 10, prompting her to go to the emergency department.

Her past medical history consisted of coronary artery disease, congestive heart failure with reduced ejection fraction, sick sinus syndrome with pacemaker, and chronic asthma. A review of hospital records revealed a computed tomography (CT) scan remarkable only for bilateral superior ophthalmic vein (SOV) dilation (Figure 1). Because of concerns for increased intracranial pressure (ICP) or carotid cavernous fistula, a CT arteriogram was performed,

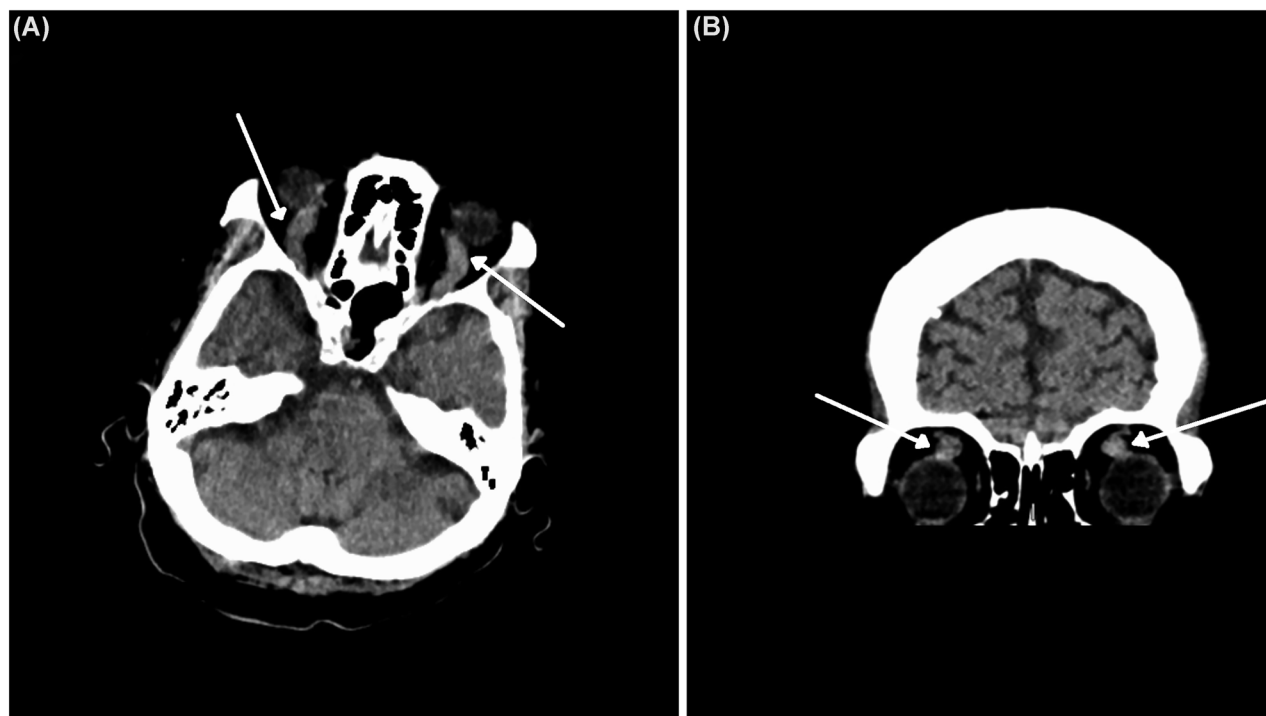


Figure 1: (A) Transverse view of the brain on CT with arrows pointing to bilateral superior ophthalmic vein dilation. (B) Coronal view of the brain on CT with arrows pointing to bilateral superior ophthalmic vein dilation.

*Corresponding author: David B. Villafuerte, DO, Internal Medicine, University of the Incarnate Word School of Osteopathic Medicine, Laredo Medical Center, 1700 E Saunders St, Laredo, TX 78041, USA, E-mail: dbvillafuerte@gmail.com

which was unremarkable. Laboratory workup including complete blood count, basic metabolic panel, thyroid stimulating hormone (TSH), and free thyroxine level (FT4) was performed. A physical examination was unremarkable for neurological or ophthalmic deficits. She was discharged with a prescription for naproxen and instructed to follow-up as an outpatient. She reported minimal relief. In the follow-up outpatient encounter her physical exam was also unremarkable, but osteopathic screening was remarkable for cranial somatic dysfunction upon vault hold. The patient received OMT (mainly CV4 technique) in 10 min sessions twice per week, over four weeks. Condylar decompression, V-spread and venous sinus drainage techniques were used at some, but not all, sessions. The patient reported resolution of symptoms by the fifth session and remained symptom-free at the time of her 6 month follow-up appointment. Given the resolution of symptoms, repeat imaging was deemed unnecessary.

Dilated SOV, also known as SOV enlargement, is a rare finding resulting from a wide spectrum of etiologies with clinical implications ranging from benign to sight- and life-threatening. Symptoms and treatment are cause dependent. Dilated SOV is most often found with dural-cavernous fistula or carotid-cavernous fistula, orbital or facial arteriovenous malformation, and venous thrombosis [1]. Rarer causes include Graves' disease, ophthalmic vein varix, orbital pseudotumor, orbital hematoma, and *para*-sellar meningioma [2]. Studies in radiology suggest that increased diameter in the SOV may correlate with ICP [3]. However, in ICP cases, headaches are classically worse with laying down, bending over, upon valsalva maneuver, and worsening in intensity over time rather than waxing and

waning [4]. Given the patient's unremarkable past medical history for pathology causing SOV dilation, unremarkable imaging, laboratory findings, physical examination, and the non-positional character and undulating intensity of her headaches, the patient's dilated SOV was diagnosed as idiopathic in origin. Since idiopathic SOV dilation is an uncommon and scarcely reported phenomenon, no established treatment protocol exists. Although the patient's headaches, imaging findings and resolution with OMT are highly suggestive that there could be a relation, this cannot be established conclusively.

Research funding: None reported.

Author contributions: The author has responsibility for the entire content of this manuscript and approved its submission.

Competing interests: None reported.

References

1. Adam CR, Shields CL, Gutman J, Kim HJ, Hayek B, Shore JW, et al. Dilated superior ophthalmic vein: clinical and radiographic features of 113 cases. *Ophthalmic Plast Reconstr Surg* 2018;34: 68–73.
2. Peyster RG, Savino PJ, Hoover ED, Schatz NJ. Differential diagnosis of the enlarged superior ophthalmic vein. *J Comput Assist Tomogr* 1984;8:103–7.
3. Lirng JF, Fuh JL, Wu ZA, Lu SR, Wang SJ. Diameter of the superior ophthalmic vein in relation to intracranial pressure. *AJNR Am J Neuroradiol* 2003;24:700–3.
4. Boyter E. Idiopathic intracranial hypertension. *JAAPA* 2019;32: 30–5.