International Journal of Academic Health and Medical Research (IJAHMR)
ISSN: 2643-9824
Vol. 9 Issue 10 October - 2025, Pages: 14-15

Duplication of the left transverse sinus on MR venography in a young woman with papilledema

Abdallah Said Abdallah[1*]; Nada Adjou[1]; Mohamed Fadil[1]; Amal Lahfidi[1]; Meryem Fikri[1]; N El Kettani[1]; Mohamed Jidanne[1]; Firdaous Touarssa[1].

[1]Neuroradiology Department of the Specialty Hospital of Rabat, Mohamed V University Rabat, Morocco.

Abstract: *A 22-year-old woman presented with symptoms of intracranial hypertension, including papilledema. While brain MRI was unremarkable, MR venography was performed to exclude venous sinus thrombosis. This imaging revealed a rare anatomical variant: a duplication of the left transverse sinus, with no evidence of thrombosis or stenosis. Although an incidental finding, recognition of such dural venous sinus variations is critical for neuroradiologists. The primary clinical importance of this variant lies in its potential to be misinterpreted as a nonocclusive thrombus, which could lead to incorrect diagnosis and unnecessary anticoagulation therapy. This case highlights the importance of a thorough knowledge of dural venous sinus anatomy to avoid diagnostic pitfalls.*

Keywords: *MR venography; Anatomic variant; Left transverse sinus; Cerebral venous system; Papilledema.*

INTRODUCTION

A 22-year-old woman with no significant past medical history presented with diffuse headaches, bilateral decrease of visual acuity, and vomiting. Neurological examination revealed bilateral sixth cranial nerve palsy. Ophthalmologic assessment confirmed grade II papilledema in both eyes. Brain MRI was unremarkable, showing no mass, hydrocephalus, or abnormal enhancement. Subsequent MR venography (MRV) demonstrated complete patency of the dural venous sinuses, with no evidence of thrombosis or stenosis. An anatomic variant, a duplication of the left transverse sinus, was the only remarkable finding. This was identified on an axial view (Figure 1) and confirmed with 3D MIP and VR reconstructions (Figure 2).

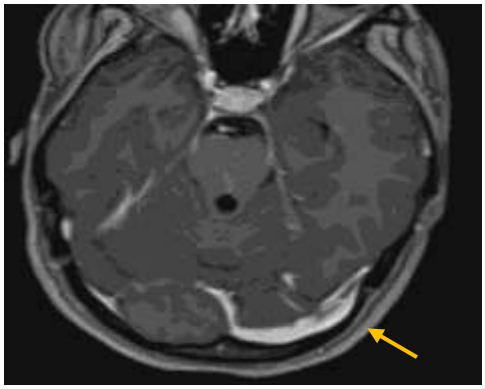

Figure 1: *Axial contrast-enhanced MR venogram of the posterior fossa, showing a duplicated left transverse sinus (arrow).*

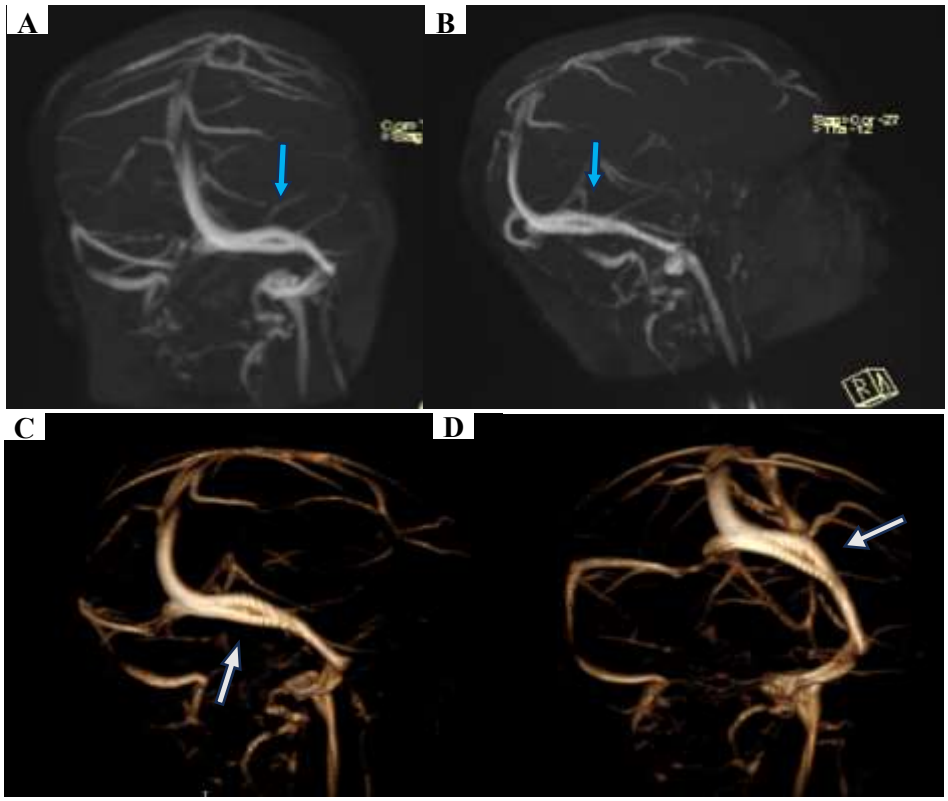

Figure 2 : *3D MR venography with Maximum intensity projection (MIP) reconstructions in posterior and oblique views (A,B), and volume-rendered (VR) reconstructions (C, D), demonstrating the duplication of the left transverse sinus (arrows).*

DISCUSSION

MR venography is a key tool in the evaluation of patients presenting with papilledema, as it allows exclusion of cerebral venous sinus thrombosis [1,2].

Our case revealed a duplicated left transverse sinus, an incidental finding similar to a case of fenestration reported by McComiskey and Glikstein [3].The primary clinical importance of this variant is its potential to be misinterpreted as a nonocclusive thrombus [1-3].This could lead to unnecessary anticoagulation treatment.

Dural venous sinus anatomical variations are common and should be considered the rule rather than the exception [4,5], and are found in a large portion of the population [6,7].While duplication is a less commonly described variant, the most frequent is hypoplasia of the left transverse sinus, observed in 18–21% of cases in large series [6,7]. The embryological basis for such variants is the development of the sinuses from a fetal vascular plexus, a process that can result in plexiform arrangements persisting into adulthood [4].Therefore, a thorough knowledge of these anatomical variations is critical to distinguish benign developmental variants from true pathological conditions and avoid diagnostic pitfalls [2,5].

CONCLUSION

Duplication of the left transverse sinus is an uncommon anatomical variant of the cerebral venous system. Its recognition on MR venography is essential to avoid confusion with venous sinus thrombosis and unnecessary treatment. This case highlights the importance of meticulous evaluation of dural venous sinuses to distinguish normal variants from pathology.

References

1. Ganeshan D, Narlawar R, McCann C, Lewis-Jones H, Curtis J. Cerebral venous thrombosis—A pictorial review. *Eur J Radiol*. 2010;74(1):110-116.
2. Leach JL, Fortuna RB, Jones BV, Gaskill-Shipley MF. Imaging of cerebral venous thrombosis: Current techniques, spectrum of findings, and diagnostic pitfalls. *Radiographics*. 2006;26 Suppl 1:S19-43.
3. McComiskey D, Glikstein R. Incidental Fenestration of the Transverse Sinus. *The Canadian Journal of Neurological Sciences*. 2023;50:950-951.
4. Curé JK, Van Tassel P, Smith MT. Normal and variant anatomy of the dural venous sinuses. *Semin Ultrasound CT MR*. 1994;15(6):499-519.
5. Ott KN, Samrid R, Tabira Y, et al. Multiple Fenestrated Dural Venous Sinuses: A Case Report. *Cureus*. 2024;16(10):e70766.
6. Goyal G, Singh R, Bansal N, Paliwal VK. Anatomical variations of cerebral MR venography: Is gender matter? *Neurointervention*. 2016;11(2):92-98.
7. Paudel S, Sah R, Singh RK, et al. Dural venous sinus variations observed in magnetic resonance venography at a tertiary care hospital: An observational study. *J Nepal Med Assoc*. 2024;62(279):720-724.