



# Altered Mental Status As A Presentation of Cerebral Venous Sinus Thrombosis

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## Introduction

Cerebral venous sinus thrombosis (CVST) is a rare disorder that can manifest as a wide array of clinical symptoms. Depending on the site, size and the onset of development, presentation can differ widely from headaches, seizures, focal neurological deficits to altered mental status.

Here we present a case of an unconventional presentation of superior sagittal sinus thrombosis in a 68 y/o female admitted to the hospital for evaluation of altered sensorium and bizarre behavior that seemed to improve with initiation of anticoagulation

## Case

A 68 year-old female with past medical history of type 2 diabetes mellitus, hypothyroidism and asthma presents with altered mental status and headaches for ten days. At baseline patient is AAOx3, can ambulate without assistance and is functional, but per family, she has had cognitive decline over the past 5 years. However, during the last ten days, she had been behaving erratically. She experienced headache, slurring of words, word finding difficulty and had been texting suicidal thoughts to her family members. She seemed to be more depressed and anxious. She had no other neurological symptoms or deficits, nor any laboratory abnormalities such as TSH level, B12, folate or on a comprehensive metabolic panel. There were no recent changes in her medications. No recent stressors could be identified as well. From the history, adjustment disorder superimposed on Alzheimer's disease was suspected. A CT of the brain was done for a TIA workup, which was unrevealing. However, a follow up MRI demonstrated concerns for superior sagittal sinus thrombosis.

## Case

This was confirmed with CT venogram as a subacute sagittal sinus thrombosis without evidence of infarction or edema. A heparin drip was started under the guidance of hematology/oncology, after which patient felt her symptoms had improved. She was discharged on dabigatran with plan to possibly pursue outpatient thrombophilia work up. Due to the low clinical suspicion of malignancy, this was deemed an idiopathic CVST.



Figure 1 – Computed Tomography with venography of the head demonstrating non filling of the central aspect of the sagittal sinus in its mid portion and posterior portion without dilatation reflecting a likelihood that it is subacute in nature.

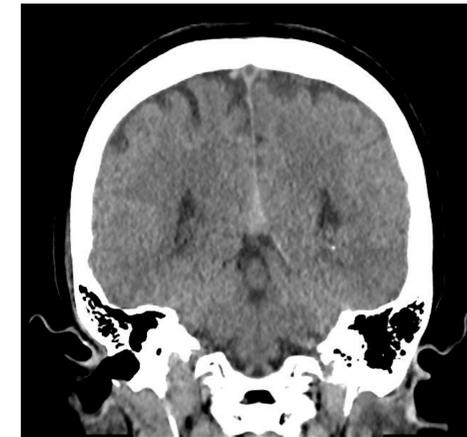


Figure 2 – Computed tomography with venography of the head demonstrating empty delta sign

## Discussion

Behavioral changes, particularly seen in the elder population, require an extensive and detailed workup. While most cases present as an acute or subacute process, a minority of reported CSVT can have a more insidious onset. Given the age of our patient, the symptoms pointed to more of a neurochemical decline rather than an anatomical lesion.

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## Discussion

Appropriate workup in our case included investigations of home medications, a metabolic and infectious panel, and a neurologic workup. When diagnosing a cavernous thrombosis, a CT venogram should ideally be the initial test as it is widely available, has improved sensitivity over a CT scan, and is better tolerated by patients. For confirmation, an MRV is ordered to assess for possible venous infarction, hemorrhage or parenchymal changes. As with most thrombotic disorders, treatment revolves around anticoagulation with further thrombophilia workup if no cause can be identified.

## Conclusion

With morbidity as high as 6-20%, especially in cases with development of altered mental status, CVST should be considered on the differential list with patients presenting under a broad umbrella of neurologic symptoms as prompt diagnosis can lead to quicker recovery and better outcomes.

## References

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