International Journal of Pharmaceutical and Bio-Medical Science

ISSN(print): 2767-827X, ISSN(online): 2767-830X

Volume 02 Issue 10 October 2022

Page No: 407-409

DOI: https://doi.org/10.47191/ijpbms/v2-i10-04, Impact Factor: 5.542

A Rare Presentation of CVT

Dr. Salma Suhana[1], Dr. Sushma H P[2]

[1,2] Yenepoya University, Mangalore

INTRODUCTION

Cerebral Venous Thrombosis (CVT) is an uncommon condition presenting with varying clinical symptoms, posing difficulty in diagnosis. Patients present with headaches, focal neurological deficits, seizures, and altered consciousness. CVT does not have a single clinical presentation, and it is important to consider CVT in all brain syndromes, especially young patients, and confirm it through imaging studies. Other uncommon presentations of CVT include single or multiple cranial nerve palsies.

A rare presentation of CVT includes the involvement of cranial nerves III, IV, V, and VI, mimicking a cavernous sinus lesion. We report a case of CVT in a middle-aged man who presented with symptoms suggestive of a right cavernous sinus lesion.

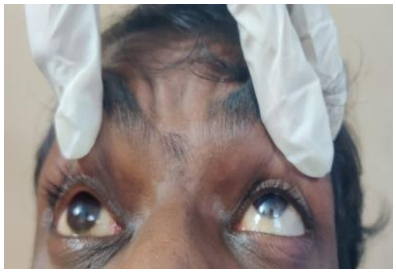
CASE REPORT

A 41-year-old male presented with right-sided ptosis, double vision for four days, and a mild headache associated with paraesthesia over the right frontal region. The double vision was horizontal and binocular, which increased with the right lateral gaze. There was no history of vomiting, weakness of the limbs, seizures, or altered sensorium.

On examination, the patient had stable vitals and was afebrile. His higher mental functions were normal. A cranial nerve examination revealed right pupillary sparing third nerve palsy and right fourth and sixth nerve palsy (Fig 1-3). He also had hypoesthesia over the V1 division of the right trigeminal nerve. Other cranial nerves, the motor, and the sensory systems were normal. The fundus examination was normal and did not reveal any papilledema. There was no nystagmus and no other signs of brainstem/cerebellar involvement

(Fig 1) Right pupil sparing CN III Palsy:

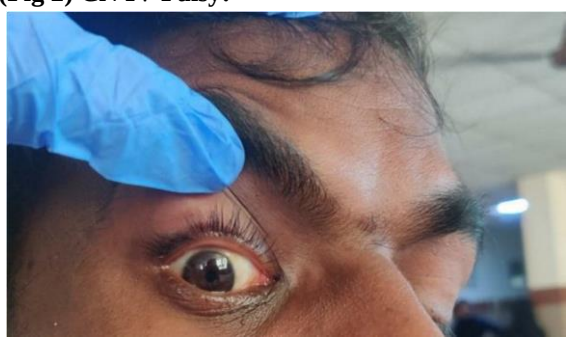
Ptosis



Superior rectus palsy

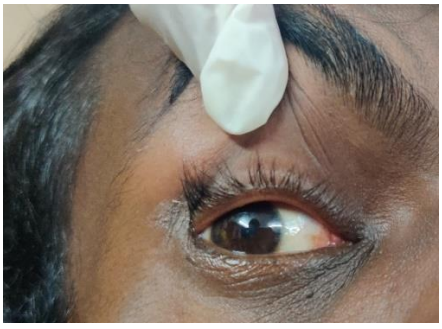
Medial rectus palsy

(Fig 2) CN IV Palsy:



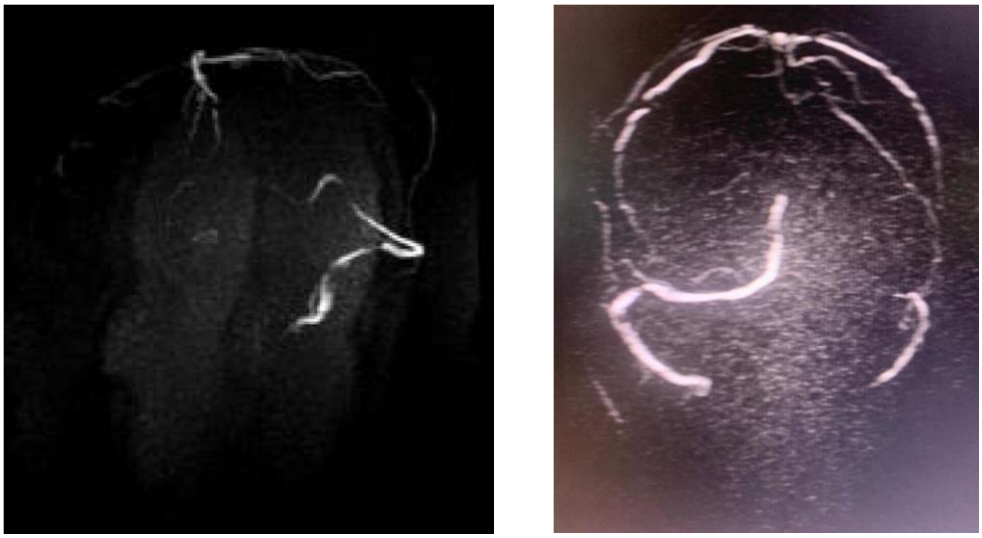
Restricted superior oblique

(Fig 3) CN VI Palsy:

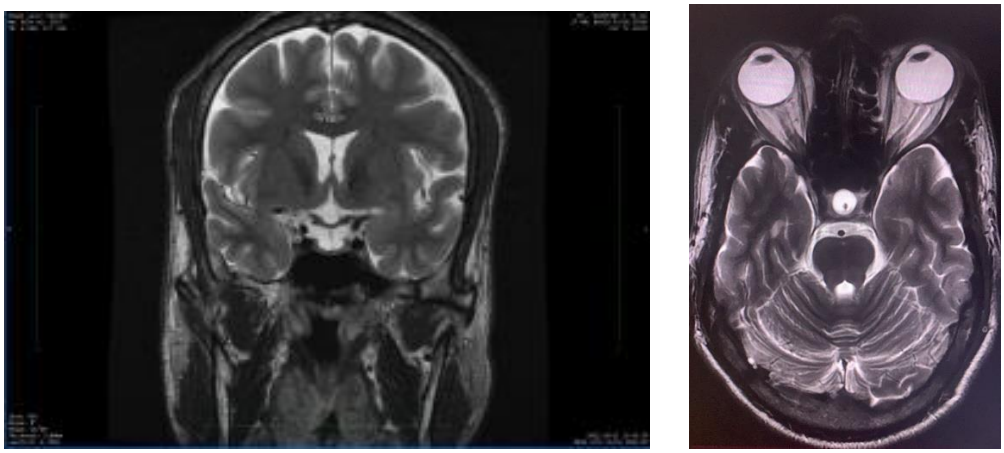


Lateral rectus palsy

Based on the clinical examination, he was suspected to have right cavernous sinus pathology. MRI brain with MRV with orbital cuts showed partial thrombosis involving the posterior aspect of the superior sagittal sinus, left transverse sinus, and left sigmoid sinus (Fig 4). Cavernous sinus was normal (Fig 5)



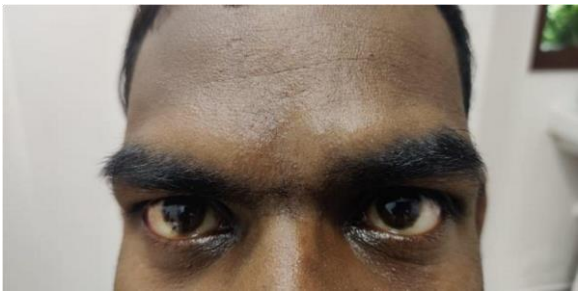
(Fig 4) 3D MPR image showing partial thrombosis of the superior sagittal sinus and transverse sinus



(Fig 5) Axial and Coronal T2 weighted image showing normal cavernous sinus

Further workup showed no other abnormal laboratory values. He was diagnosed with a case of CVT involving the superior sagittal sinus, left transverse sinus, and left sigmoid. He was treated with subcutaneous heparin bridged with oral anticoagulants and anti-edema measures. He noticed an improvement in his diplopia. There was objective evidence of improvement in the CN III, IV, and VI palsies as well. He was continued on oral anticoagulants and discharge

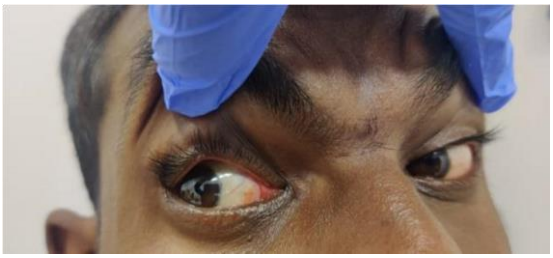
After 2 weeks, there was complete resolution of the cranial nerve palsies (Fig 6-9).



(Fig 6) Normal eye-opening

(Fig 7) Normal superior rectus

(Fig 8) Normal medial rectus



(Fig 9) Normal lateral rectus

DISCUSSION

CVT is a distinct cause of stroke affecting the dural sinuses and cerebral veins in young adults. [1] It can present as an isolated symptom or be associated with focal neurological findings such as visual loss, papilledema, diplopia, coma, paresis, and seizures. [2]

Clinical features of cerebral venous thrombosis are highly variable depending on the location and the mechanism of neurological dysfunction. Clinical manifestations of CVT are mainly explained by edema secondary to ischaemic injury and raised intracranial pressure attributed to venous congestion. [3]

A study by Kuehen J and Schwartz, reported five cases of CVT with single or multiple cranial nerve palsies. On imaging, these patients had involvement of ipsilateral transverse and sigmoid sinuses. [4]

Cranial nerve palsy as an isolated manifestation of CVT has been attributed to the raised intracranial pressure, the extension of thrombosis, or direct pressure from the clot itself. [5] Kuehnen et al [6] describe that cranial nerve palsies develop due to reversible compromised oxygen or glucose consumption within the cranial nerve tissue caused by edema and back pressure caused by venous congestion.

Our patient presented with involvement of cranial nerves III, IV, V, and VI, suggesting cavernous sinus pathology. However, the cavernous sinus imaging was normal, and the patient was found to have left sigmoid and transverse sinus thrombosis. The cavernous sinus drains into the internal jugular vein via the sigmoid sinus. Thus, the involvement of the cranial nerves in the cavernous sinus, secondary to sigmoid sinus thrombosis, can be attributed to the venous congestion caused by a thrombotic obstruction in the sigmoid sinus.

CVT can thus mimic a cavernous sinus lesion and poses a diagnostic challenge. This treatable condition can be diagnosed and managed early with appropriate imaging studies.

CONCLUSION

CVT can present with diverse clinical manifestations. Involvement of multiple cranial palsies without other signs and symptoms is not uncommon. Patients with symptoms of cavernous sinus involvement, particularly those with a hypercoagulable state, should have CVT considered in the differential diagnosis. Appropriate imaging studies are needed for the early diagnosis and management of this treatable condition.

REFERENCES

I. Coutinho JM. Cerebral venous thrombosis. J Thromb Haemost. 2015 Jun;13 Suppl 1:S238-44. doi: 10.1111/jth.12945. PMID: 26149030.

II. Crassard I, Bousser MG. [Headache in patients with cerebral venous thrombosis]. Revue Neurologique. 2005 Jul; 161(6-7):706-708. DOI: 10.1016/s0035-3787(05)85124-0. PMID: 16141966

III. Wasay M, Dai AI, Ansari M, Shaikh Z, Roach ES. Cerebral venous sinus thrombosis in children: a multicenter cohort from the United States. J Child Neurol. 2008 Jan;23(1):26-31. doi: 10.1177/0883073807307976. PMID: 18184940.

IV. Kuehnen J, Schwartz A, Neff W, Hennerici M. Cranial nerve syndrome in thrombosis of the transverse/sigmoid sinuses. Brain. 1998 Feb;121 (Pt 2):381-8. doi: 10.1093/brain/121.2.381. PMID: 9549513.

V. Kulkarni GB, Ravi Y, Nagaraja D, Veerendrakumar M. Lower motor neuron facial palsy in cerebral venous sinus thrombosis. J Neurosci Rural Pract. 2013 Apr;4(2):2246. doi: 10.4103/0976-3147.112776. PMID: 23914113; PMCID: PMC3724315.

VI. Bousser MG. Cerebral venous thrombosis: diagnosis and management. J Neurol. 2000 Apr;247(4):252-8. doi: 10.1007/s004150050579. PMID: 10836615.