

CASE REPORTS

CEREBRAL VENOUS SINUS THROMBOSIS: A RARE PRESENTATION OF HEADACHE MIMICKING SUBARACHNOID HEMORRHAGE

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Abstract:

Cerebral venous sinus thrombosis is a rare disorder accounting for less than 1% of all strokes. It is more common in children and young adults. Here we report a rare and interesting case of cerebral venous sinus thrombosis mimicking subarachnoid hemorrhage. A 40 years old women, presented with sudden onset of headache, vomiting and unconsciousness associated with convulsions. She had a history of taking oral contraceptives for the last 12 years. Clinical examinations showed ill-looking women with Glasgow Coma Scale of 12 along with neck rigidity and bilateral papilloedema. Although initially we suspected her as a case of subarachnoid hemorrhage, subsequent investigations with MRI and MRV showed to be a case of superior sagittal and transverse sinus thrombosis. Treatment with anticoagulation recovered her from headache and papilloedema. Serum levels of thrombophilic factors were within the normal physiological limits. Thus we concluded that although cerebral venous thrombosis is 100 times less than the cerebral arterial disease, a women presented with sudden onset of headache and vomiting with long term use of oral contraceptives, cerebral thrombosis should be considered as a differential.

Key words: Cerebral venous sinus thrombosis , Sagittal sinus thrombosis, Subarachnoid hemorrhage , Magnetic resonance venography .

Introduction:

Thrombosis in cerebral venous sinus is thousand times less prevalent than arterial stroke, although 70% of cerebral blood flows through the venous system.¹ The risk factors of cerebral venous sinus thrombosis (CVST) and arterial diseases are also different. The main risk factors for venous thrombosis are stasis of blood and changes in the blood composition that is best described by Virchow triad.² Besides prevalence and risk factors, the clinical manifestations of CVST also differ from that of arterial stroke along with different age groups. When CVST mainly occurs in young adults, arterial stroke mainly affect in elderly people.¹ Finally it is noteworthy that the causative factors of arterial stroke also differs from that of venous thrombosis that includes infection, dehydration, local

trauma, rheumatologic diseases like SLE, Behcet's disease and hypercoagulable states like nephritic syndrome, anti-thrombin III deficiency, pregnancy, cancer and use of oral contraceptives.³⁻⁵ Still today using all the available neuroimaging techniques in quarter of cases of CVST, the cause remains unknown.¹

The Dutch Venous Sinus Thrombosis group prospectively compared data from a series of patients with cerebral sinus thrombosis with age-controlled population data. They found that 85% of women with a CVST used oral contraceptives, compared with 45% of women in the control group.⁶ This study suggested that there exists a strong association between the use of oral contraceptives and the occurrence of CVST. However, their association has rarely been reported

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in the literature in our country. Thus, we presented a rare and interesting case of CVST presented as a sudden onset of headache, vomiting and convulsion mimicking subarachnoid hemorrhage with a history of combined oral contraceptive pills for a long period of 12 years.

Case Report:

A 40 years old non-diabetic, normotensive, female, presented with sudden onset of headache, vomiting and unconsciousness of three days duration. She remained unconsciousness for about half an hour associated with one episode of convulsion. At that time she suffered tongue bite, injury to right hand and spontaneous micturation and defecation. After gaining consciousness, she complained of severe throbbing headache all over the cranium radiating to the neck. Headache was associated with repeated vomiting. Her consciousness gradually improved during the next three days but the headache was unresponsive to analgesics. She denies any history of fever, chills, visual difficulty, nasal or ear discharge, head injury, anorexia, weight loss, joint pain, rash or previous history of migraine. She is a mother of five children with the age of last child 14 yrs. She had no previous significant illness but took combined oral contraceptive pills for the last 12 years.

On examination, her blood pressure was 130/80 mm of H.GCS was 12. There were neck rigidity and bilateral papilloedema. Other systemic examination revealed no abnormality.

Laboratory investigation showed normal full blood count, serum bilirubin, SGPT, S. Creatinine and albumin. CT scan and MRI of brain were normal. CSF study showed slight raised CSF pressure with normal biochemistry and cytology. Initially, INR was 1.01 with negative ANA test. Magnetic resonance venography (MRV) showed sagittal sinus and bilateral transverse sinus thrombosis (Figure 1). Thrombophilic screening for homocystine, anti thrombin III, Protein C, Protein S, Factor V Leiden, anti phospholipid antibody was normal.

After confirmation of diagnosis we started Inj. Low molecular weight Heparin 60 mg subcutaneous for 10days followed by Warfarin. The condition of the patient improved with disappearance of bilateral papilloedema. We then arranged for cerebral angiography with digital subtraction angiography (DSA) after completion of LMWH therapy (Figure 2). The DSA showed patent cerebral venous sinuses with disappearance of filling defects as found on MRV.

We discharged the patient after recovery with the advice of alternative method of contraception.



Fig. 1-A: MRV of cerebral venous sinuses in oblique view showing a stenosis in superior sagittal sinus (arrow) and narrowing of right transverse sinus (bold arrow). **Fig. 1-B:** MRV in AP view showing stenosis of right transverse sinus (arrow) and complete absence of left transverse and sigmoid sinus.

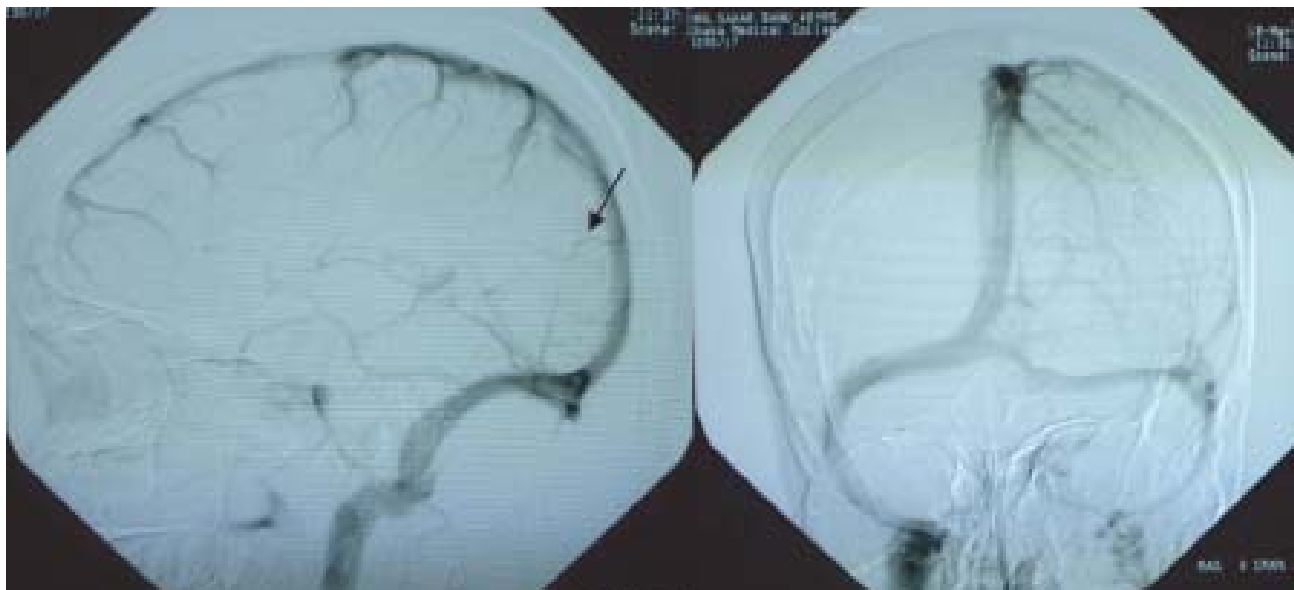


Fig. 2-A: DSA of cerebral vasculature in venous phase in oblique view showing patent venous sinuses after treatment with IV LMWH. **Fig. 2-B:** DSA in lateral view showing patent venous sinuses after treatment with IV LMWH.

Discussion:

The incidence of CVST is about 3-4 per million of people each year.^{6,7} Women are affected 3 times more than men. Although majority of the patients gradually recover from acute episodes of CVST, one in each eight patients suffers from either chronic disability or death.⁸ Although modern neuroimaging tools specially MRV and digital subtraction angiogram (DSA) have enhanced the early detection of CVST, the bizarre presentations still make a delay for initiation of specific treatment for about a week in many centers.⁹ The neurological manifestations of CVST may be a vague symptoms of vomiting, headache, seizures, stroke like features or manifestations of chronic intracranial hypertension like blurring of vision and women with pregnancy may present with pregnancy related complications.^{1,10} Thus, physicians should have a fair idea about the CVST and their atypical presentations.

The clinical scenario of the present case initially seems to be a presentation of subarachnoid hemorrhage due to its abrupt onset along with headache radiating to neck and vomiting. But subsequently further investigations revealed a case of CVST. With appropriate anticoagulation therapy the patient promptly recovered. Thus, we should bear in mind that although venous thrombosis occurs 100 times

less frequently than arterial thrombosis but we still should consider CVST with strong suspicion in patients with middle aged with long term use oral contraceptives.¹¹

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