

A case of cerebral sinus venous thrombosis resulting in mortality in pregnant woman: late diagnosis

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Received - 11 September 2019

Initial Review - 28 September 2019

Accepted - 15 October 2019

ABSTRACT

Cerebral venous sinus thrombosis (CVST) is a rare condition. The most frequent symptoms and signs are headache, focal seizures with or without secondary generalization, unilateral or bilateral paresis and papilledema. We report a case of CVST in a 30-year-old female that presented with headache, diminution of vision, swelling and pain in both eyes and bilateral restricted extraocular movements. She expired after 3 days of treatment as she was diagnosed late. Due to its diverse and varied clinical presentation, CVST should be considered as differential in almost any brain syndrome.

Keywords: Cerebral venous sinus thrombosis, Headache, Pregnancy.

Cerebral venous sinus thrombosis is a rare condition. Actual incidence of this condition is not exactly known. It has an estimated incidence of 5/1,000,000 [1]. Signs and symptoms of the disease consist of headache, focal and generalized convulsions, unilateral and bilateral paresis, and papilledema [2]. Its important etiological factors are pregnancy, puerperium, oral contraceptive use, coagulopathies, intracranial infections, cranial tumours, lumbar puncture, malignancy, dehydration, inflammatory bowel disease, connective tissue disorders, Behcet's disease, parenteral infusions, and various drugs. In 30% of the patients, the etiology cannot be determined [3]. Because this is potentially fatal condition, so early diagnosis and treatment is quiet important. In this paper, we aim to present a case of CVST which ended up with maternal mortality and was not diagnosed and treated well in time.

CASE REPORT

A 30-year-old women, gravida 3 para 2 at 10 weeks of pregnancy, presented with sudden onset diminution of vision since last 4 days. She was experiencing swelling and pain in left eye followed by involvement of right eye with same symptoms with restricted extraocular movements of both eyes in all gazes within 3-4 days. It was associated with headache, neck stiffness and fever with chills and rigor. Prior to reporting to our hospital, the patient went to a private clinic nearby where she was treated with IV antibiotics and oral analgesics.

As the condition worsened in 3-4 days, the patient came to this institute. On asking past history, there was h/o recurrent pustule on lower lid sometimes on left or right eye since last 2 months which

subsided with mild treatment from local practitioner. There was no history suggestive of facial sinus or dental infection and recent trauma. She had never experienced similar symptoms during her previous pregnancy and there was non-significant family history.

On the day of presentation she was conscious, looking pale and lethargic, co-operative and well oriented to timeplace and person. On general physical examination, she was average built but dehydrated, her pulse was 132/minute, BP was 50/40mmHg, respiratory rate was 30/minute. On ocular examination, lid swelling was more tense in left eye as compared to right eye and chemosis was present in left eye. Perception of light was present in the right eye with projection of rays inaccurate while in the left eye perception of light was not present. Bilateral corneal sensations were absent, extra ocular movements were restricted in all gaze in both eyes (complete ophthalmoplegia). Pupils were mid-dilated and fixed in both eyes. Fundus examination showed bilateral papilledema. There were no peripheral neurological signs noted.

Complete blood counts showed total leukocyte counts of 18000 cells/uL, differential counts -88, 11, 1, 0, and haemoglobin of 8gm/%. Coagulation profile was normal. Liver function tests showed aspartate (SGOT) levels of 123 IU and alanine transferase (SGPT) of 76IU and renal function test showed creatine 1.8mg/dL and urea of 46mg/dL. On radiological imaging, Magnetic resonance (MR) venography brain showed multiple acute infarcts in bilateral hemisphere and non-visualisation of left transverse sinus, sigmoid sinus and internal jugular vein suggestive of CVST (Fig. 1, 2).

The patient was thus diagnosed as a case of gravida 3 para 2 at 10 week gestation with anaemia and CVST (left transverse

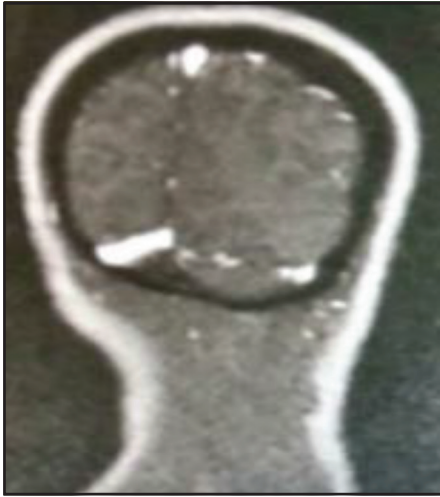


Figure 1: Magnetic resonance (MR) venography brain showed multiple acute infarcts in bilateral hemisphere.

and sigmoid sinus) with sepsis with shock. The patient was started on empirical IV antibiotics and IV anticoagulants (low molecular weight heparin 1mg/kg/bw in renal modified doses) along with intravenous fluids and vasopressor inj. She was given adrenaline and dopamine as the patient was in shock at the time of presentation. The patient showed mild improvement symptomatically initially for few hours after treatment. Her renal and liver parameters worsened next day. Her creatinine rose to 4.1mg/dL and SGOT and SGPT rose to 3240/3458 IU, respectively. Her prothrombin time rose to 22 seconds and INR rose to 2.3 and platelets decreased to 76000/uL. On 3rd day after treatment, patient's condition worsened and she expired.

DISCUSSION

Cerebral venous sinus thrombosis is a rarely seen entity which presents diagnostic difficulties, because of the variable nature of its clinical signs and symptoms. It occurs 10 to 13 times more often during the puerperium than during pregnancy and is also very rare during the first trimester. The most common postulated mechanism on how cerebral venous sinus thrombosis can affect a pregnant woman is hypercoagulable state brought about by the pregnancy itself and further aggravated by dehydration and anaemia [4].

The most commonly affected site is the transverse sinus, followed by superior sagittal sinus and straight sinus [5]. Other less common sites are the cortical vein, jugular vein and internal cerebral vein. In most of the patients, thrombosis occurs in more than one sinus. The mode of onset is highly variable, which can be from sudden to progressive over weeks, so it can mimic other conditions such as tumour, stroke, or benign intracranial hypertension. Headache, focal deficits, seizures, disorders of consciousness, and papilledema, which can present in isolation or in association, are the most frequent signs [6,7]. Loss of consciousness is a sign of poor prognosis which is associated with higher mortality rates [8].

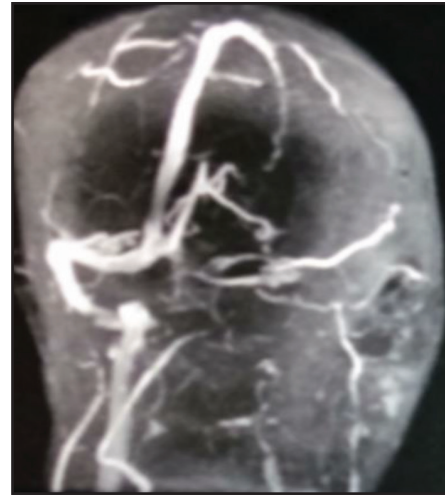


Figure 2: Magnetic resonance (MR) venography brain showing thrombosis of sagittal and transverse sinus.

Radiological examination plays an important role in the diagnosis of CVST. MR Venography is the investigation of choice. According to the guidelines of the European Federation of Neurological Societies, the first line treatment for cerebral venous and Dural sinus thrombosis is anti-thrombotic agents. The antithrombotic treatment favours spontaneous thrombus resolution and to recanalize the occluded vein or sinus, to avoid thrombus propagation, and to prevent complications such as pulmonary thromboembolism.

In the acute treatment of CSVT, heparin (intravenous or subcutaneous), and in the maintenance therapy, warfarin are recommended. The optimal duration of oral treatment varies, but the accepted practice is 3 months for idiopathic cases, between 3 and 6 months for pregnancy related cases or and between 6 and 12 months in patients with hereditary thrombophilia [9]. The prognosis is usually good in patients with obstetric causes and has a mortality rate between 5 and 10% [5,10]. Unfortunately, in this case patient was not diagnosed and treated early.

CONCLUSIONS

Due to its diverse and varied clinical presentation, cerebral venous sinus thrombosis should be considered in almost any brain syndrome. Outcome depends on early suspicion and urgent treatment as the condition can be reversed.

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Funding: None; Conflict of Interest: None Stated.

How to cite this article: Dhiman I, Poonia K, Sharma G, Sharma T. A case of cerebral sinus venous thrombosis resulting in mortality in pregnant woman: late diagnosis. *Indian J Case Reports*. 2019;5(5):501-503.

Doi: 10.32677/IJCR.2019.v05.i05.033