

## **A case of postpartum lateral sinus thrombosis following cesarean section under spinal anesthesia**

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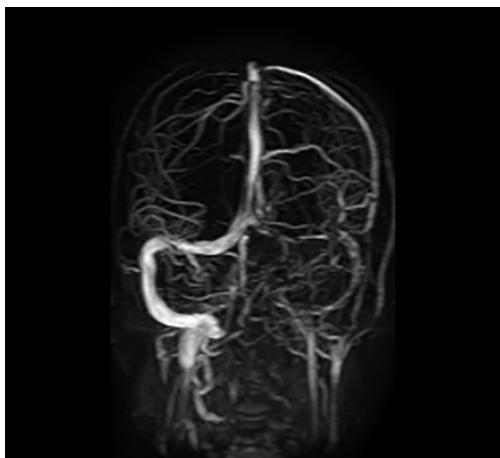
Cerebral venous sinus thrombosis (CVST) is a rare disorder in the general population with a much higher incidence in developing countries. Several physiological changes in coagulation system render pregnancy and puerperium, a prothrombotic state.

A 22-year-old primipara presented at 36 weeks of gestation for an emergency cesarean section for fetal distress. She was diagnosed with pregnancy-induced hypertension at 30 weeks of gestation for that she was on  $\alpha$ -methyldopa. There was no history of fever, chronic hypertension, dyslipidemia, or treatment with oral contraceptives or anticoagulants. General examination revealed blood pressure (BP) 160/100 mmHg and pedal edema. The routine investigations were within normal limits. Under all aseptic conditions, spinal anesthesia was administered in sitting position at L3-L4 interspace using a 25G spinal needle, and 2 ml of 0.5% bupivacaine (heavy) was injected intrathecally. After 5 min, the level of anesthesia achieved up to T6 level and surgery started. There were no intraoperative complications, and her vitals remained stable. A total of 1.5 L of Ringer's lactate was administered intraoperatively. Surgery was completed within 40 min, and the patient was shifted to the postoperative ward with pulse-84/ min, BP 124/78 mmHg.

Two hours postoperatively, the patient started complaining of a headache, which as described by her was severe and progressive in nature. She also had two episodes of projectile

vomiting. Six hours postoperatively, the patient was irritable and had developed altered mentation with rigid posturing. On examination, her Glasgow Coma Score was E<sub>2</sub> V<sub>3</sub> M<sub>5</sub>. Her vitals were stable, and other systems were normal. The patient was shifted to the Intensive Care Unit. Treatment was started with prophylactic intravenous (IV) antibiotics and mannitol; however, there was no improvement in patient's condition. An elevation in the D-dimer levels were observed, and the diagnosis was confirmed with a magnetic resonance (MR) venography, which revealed lateral sinus thrombosis [Figure 1]. IV heparin was commenced at a dose of 5000 IU 6 hourly. The patient showed signs of improvement and regained consciousness on the 3<sup>rd</sup> day ward was discharged on the 6<sup>th</sup> postoperative day.

Cesarean section increases the risk of thrombosis because of postsurgical decline of protein C levels. A lumbar puncture has also been found to be a risk factor.<sup>[1]</sup> A plausible reason is that low cerebrospinal fluid (CSF) pressure after a lumbar puncture causes a downward shift of the brain, with traction on the cortical veins and sinuses. Deformation of the venous walls may induce thrombosis. Obstruction of cerebral sinuses result in decreased CSF absorption leading to increase in intracranial pressure, so main presenting feature is a headache (may be confused with postdural puncture headache) seen in 90% of patients.<sup>[2]</sup> Seizures are noted in 40-44%, whereas motor weakness including hemiparesis, is the most common focal finding present in up to 40% of patients.<sup>[2]</sup> An elevated D-dimer supports the diagnosis of cerebral venous thrombosis MR imaging of the head combined with MR venography is most sensitive for the detection of cerebral venous thrombosis.<sup>[3]</sup> Therapy for cerebral venous thrombosis focuses on anticoagulation, management of sequelae such as seizures, increased intracranial pressure, and venous infarction. Anticoagulation is recommended as safe and effective for the treatment of cerebral venous thrombosis with or without intracranial hemorrhage on presentation.<sup>[4]</sup>



**Figure 1:** Magnetic resonance venography showing left lateral sinus thrombosis

To conclude, when first described, peripartum CVST was thought to be very rare and uniformly fatal, but it is now recognized to occur uncommonly with a relatively good prognosis when treated early.

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### Conflicts of interest

There are no conflicts of interest.

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### References

1. Ferro JM, Canhão P, Stam J, Bousser MG, Barinagarrementeria F; ISCVT Investigators. Prognosis of cerebral vein and dural sinus thrombosis: Results of the International Study on Cerebral Vein and Dural Sinus Thrombosis (ISCVT). *Stroke* 2004;35:664-70.
2. Tanislav C, Siekmann R, Sieweke N, Allendörfer J, Pabst W, Kaps M, et al. Cerebral vein thrombosis: Clinical manifestation and diagnosis. *BMC Neurol* 2011;11:69.
3. Bousser MG, Ferro JM. Cerebral venous thrombosis: An update. *Lancet Neurol* 2007;6:162-70.
4. Einhäupl K, Stam J, Bousser MG, De Bruijn SF, Ferro JM, Martinelli I, et al. EFNS guideline on the treatment of cerebral venous and sinus thrombosis in adult patients. *Eur J Neurol* 2010;17:1229-35.

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