

Background

Cerebral venous sinus thrombosis (CVST) is a rare but serious event in pregnancy, with an estimated incidence 0.004–0.01% causing about 2% of pregnancy-associated strokes. Risk increases in the third trimester due to hypercoagulability and venous stasis.

Case Presentation

A 28-year-old G3P2 woman at 38 weeks gestation presented with a witnessed seizure and a four-day history of frontal headache.



Diagnosis

Neuroimaging confirmed cerebral venous sinus thrombosis involving the anterior two-thirds of the superior sagittal sinus with extension into adjacent cortical veins near the vertex.

Management

Therapeutic LMWH and levetiracetam were commenced, the patient was admitted to HDU for monitoring. An MDT discussed the safest mode of delivery after 1 week of LMWH therapy, aiming to minimise the risk of duration off therapeutic anti-coagulation, while minimising the risk of bleeding.

Referances:

- Saposnik, G., Bushnell, C., Coutinho, J.M., Field, T.S., Furie, K.L., Galadanci, N. et al., 2024. Diagnosis and management of cerebral venous thrombosis: a scientific statement from the American Heart Association. *Stroke*, 55, pp.e77-e90. doi:10.1161/STR.0000000000000456
- Rosa S, Fragata I, Aguiar de Sousa D. Update on management of cerebral venous thrombosis. *Curr Opin Neurol*. 2025 Feb 1;38(1):18-28. doi: 10.1097/WCO.0000000000001329. Epub 2024 Oct 21. PMID: 39469812.

Anaesthetic Considerations

- **Epidural analgesia was avoided** due to the risk of dural puncture with an 18g Touhy resulting in extension of the CVST or requiring a second break from LMWH to facilitate epidural blood patch
- **Remifentanil PCA was planned** for labour analgesia
- **Spinal Anaesthesia with a 27g Whitacre** needle was deemed to be sufficiently lower risk dependent upon the timing of LMWH.
- **General anaesthesia** was also low risk as there were no concerns for raised intra-cranial pressure at that time, however would impair neurological monitoring.
- **Tranexamic acid was contra-indicated**, however **fibrinogen concentrate** was an available option if required upon assessment of fibrinogen levels.
- **Ergometrine was contra-indicated** due to the risk of cerebral vasospasm or hypertension contributing to reactive cerebral hemorrhage.

Delivery

It was agreed that the greatest influences upon the interval without LMWH would be the mode of delivery and post-partum hemorrhage (PPH). Planned induction of labour occurred after a prophylactic dose of LMWH the evening before. The patient laboured quickly and had an uneventful delivery of a baby girl with remifentanil analgesia. Carbetocin and misoprostol were administered to minimise the risk of PPH. Blood loss was minimal and therapeutic LMWH was recommenced 8 hours later.

Conclusion

This case underscores the delicate balance between thrombosis management and haemostatic safety during delivery. Anaesthetic planning must consider neuraxial contraindications, thrombogenic agents, and continuous neurological monitoring. MDT involvement is essential for optimal outcomes.