# Cerebral venous sinus thrombosis case reports

## 2023

Currently, there are case reports of hem coagulase-induced thrombotic events, but no reports of cerebral venous sinus thrombosis being associated with hem coagulase.

A 35-year-old woman presented to the outpatient clinic with a severe headache and sudden memory loss with intravenous hem coagulase for postoperative bleeding after uterine fibroids surgery. Abnormal neurological signs included slowed reactions, poor memory, and decreased numeracy. Magnetic resonance imaging and computed tomography scan showed multiple cerebral infarcts, and the infarct area was non-arterial. Brain magnetic resonance venography showed obstruction of the left sigmoid sinus. High-resolution magnetic resonance imaging of the left sigmoid sinus showed an abnormally high signal. The patient was treated with a subcutaneous Low-Molecular-Weight Heparin Sodium injection of 0.4 ml, twice a day (7 days), and oral Warfarin Sodium 3 mg, once a day, while monitoring the international normalized ratio, adjust the warfarin sodium dosage according to the international normalized ratio level. One month later, the patient had no neurological symptoms and her cognitive function returned to normal.

Hem coagulase may be a contributing factor to CVST in patients undergoing uterine fibroids surgery and should be administered intravenously with caution [1)].

## 2020

A 16-year old right-handed female G2P2 presented 8 days postpartum with complaints of slurred speech, right facial droop, and right upper extremity numbness that had progressed over the course of 4 hours prior to presentation. On imaging, the patient had a CVT with associated hemorrhage progressing in size at serial six-hour stability CT scans for 24 hours post-arrival. At 24 hours the patient went into DIC and demonstrated signs of herniation. The patient underwent an emergency hemicraniectomy along with a right frontal EVD for ICP monitoring. Most recently, the patient was GCS 15 and had an MRS of 4, and was ultimately discovered to have an anti-phospholipid syndrome.

This case of CVT demonstrates the need for critically reading guidelines, as in this case the time to anticoagulation treatment was shorter than cases included in guideline construction and repeated CT examination demonstrated expansion suggesting it unsuitable for immediate anticoagulation. Certain cases may fall outside of the study parameters upon which guidelines are constructed, and clinicians should be aware of these exceptions [2)].

## 2015

Cerebral venous sinus thrombosis after mild head trauma without skull fracture or intracranial hematoma is exceptionally rare. We describe an unusual case of progressive intracranial hypertension due to superior sagittal sinus thrombosis following mild head trauma. A 17-year-old boy presented

with nape pain a day after a head blow during a gymnastics competition (backward double somersault). On admission, he showed no neurological deficit. CT scans revealed no skull fractures, and there were no abnormalities in the brain parenchyma. However, his headache worsened day-by-day and he had begun to vomit. Lumbar puncture was performed on Day 6, and the opening pressure was 40 cm of water. After tapping 20 mL, he felt better and the headache diminished for a few hours. MR venography performed on Day 8 revealed severe flow disturbance in the posterior third of the superior sagittal sinus with multiple venous collaterals. Because of the beneficial effects of lumbar puncture, we decided to manage his symptoms of intracranial hypertension conservatively with repeated lumbar puncture and administration of glycerol. After 7 days of conservative treatment, his symptoms resolved completely, and he was discharged from the hospital. Follow-up MR venography performed on Day 55 showed complete recanalization of the superior sagittal sinus. The exact mechanism of sinus thrombosis in this case is not clear, but we speculate that endothelial damage caused by shearing stress because of strong rotational acceleration or direct impact to the superior sagittal sinus wall may have initiated thrombus formation [3].

### 2013

A 30-year-old woman developed a cerebrospinal fluid fistula after lumbar spinal surgery. The treatment included rest, hydration, caffeine, and continuous external lumbar drainage. After closure of the fistula, the patient complained of severe orthostatic headache. Thrombosis involving the superior sagittal sinus, the right transverse sinus, the right sigmoid sinus, and the right jugular vein was diagnosed after neurological deterioration.

A few reports have associated CVT with various forms of spinal meningeal injury. However, it has been rarely documented following spinal surgery complicated by accidental durotomy and/or external lumbar CSF drainage. CSF hypovolemia may precipitate CVT in patients having prothrombotic risk factors. Patients who have or had CSF leaks and/or lumbar CSF drains who present with symptoms of intracranial CSF hypotension should remain in the horizontal position to prevent CVT. In that context, the diagnosis of CVT depends on a high degree of suspicion [4].

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2)
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3)
Suto Y, Maruya J, Watanabe J, Nishimaki K. [Progressive Intracranial Hypertension due to Superior Sagittal Sinus Thrombosis Following Mild Head Trauma: A Case Report]. No Shinkei Geka. 2015 Jul;43(7):629-33. doi: 10.11477/mf.1436203088. Japanese. PubMed PMID: 26136327.
4)
Lourenço Costa B, Shamasna M, Nunes J, Magalhães F, Peliz AJ. Cerebral venous thrombosis: an unexpected complication from spinal surgery. Eur Spine J. 2014 May;23 Suppl 2:253-6. doi: 10.1007/s00586-013-3147-0. Epub 2013 Dec 28. Review. PubMed PMID: 24375330.