



Case of Cerebral Venous Thrombosis-An Anaesthetic Management of LSCS

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ABSTRACT

Cerebral venous sinus thrombosis (CVST) is common in women during peripartum period. We report a case of 21 years old primigravida, diagnosed of sigmoid sinus & right transverse sinus thrombosis with h/o epilepsy for one year, who presented with oligohydramnios and posted for lower segment caesarean section (LSCS) where general anaesthesia (GA) was the plan

Keywords: Dural sinus thrombosis, caesarean section, general anaesthesia.

INTRODUCTION

Dural venous sinus thrombosis usually involves sagittal, transverse and sigmoid sinuses which is common during pregnancy, puerperium and in women on oral contraceptives when there is state of hypercoagulation. The other etiological factors are coagulopathies, infections, severe dehydration, anaemia, metabolic factors, systemic lupus erythematosus and antiphospholipid syndrome.(1) It can be a neurological emergency during pregnancy and life threatening complications can occur so early detection and measures for prevention are necessary. (2)The most common symptoms and signs are headache (95%), seizures (47%), papilledema (41%) and paresis (43%). The risk factors are middle ear or facial skin infections, thrombophilic states, oral contraceptives and pregnancy itself.(3) It can be a rare cause of stroke in young or middle aged patients 0.5%-1% of stroke.(4) During pregnancy it may present primarily with seizure in 12%-31.9% cases. In others there can be headache, paresis, focal convulsion, papilloedema. (5) Magnetic resonance venography (MRV) is gold standard for diagnosis. The treatment with therapeutic doses of anticoagulants may result in reversal of symptoms (2,3)

CASE REPORT:

A 21 years old lady, primigravida with 37.3 weeks of pregnancy and a known case of CVST of sigmoid sinuses and right transverse sinus with history of epilepsy one year back, came to hospital for further management. She was on oral contraceptives for two years after marriage. She was apparently alright with no history of headache, nausea, vomiting, blurring of vision, fever or weakness. She was admitted six months back in view of episodes of recurrent generalised tonic clonic seizure for 8 days and was diagnosed with cerebral venous thrombosis on contrast enhanced MRI & MRV and was put on low molecular weight heparin (LMWH)- enoxaparin 40mg subcutaneously once daily. She had no significant family history, and not associated with pregnancy induced hypertension. Elective LSCS was planned on obstetric indication in view of prolonged labour. On pre anaesthetic evaluation, patient was conscious, oriented to time, place and person. Afebrile and hemodynamically stable, systemic examination was normal with no sensory or motor deficit or cranial nerve involvement. She was investigated, which included anticardiolipin antibody, ANA & APLA which were negative. Lower limb

doppler showed no significant abnormality. 2D echo showed normal valves, good LV contractility with ejection fraction 73 %. Fundoscopy examination did not show papilledema. On airway assessment: Mallampati class- 2,

sternomental and thyromental distance was 12.5cm and 7cm respectively. Low molecular weight heparin was stopped on admission, patient was counselled and explained about the anaesthetic procedure and informed consent was taken.

GA: Multipara monitor attached and the baseline parameters noted. In view of ongoing anticoagulant treatment the plan was GA with rapid sequence induction. An 18G IV cannula secured and preloading done with 500ml ringer lactate, premedications like Inj. ondansetron 4mg IV, Inj. ranitidine 50mg IV, Inj. Glycopyrrolate 0.2mg IV given. Under all aseptic precautions intra arterial line was inserted through left radial artery for continuous invasive blood pressure monitoring. After recording all the baseline parameters, preoxygenation was done with 100% Fio2 for 5 minutes. Induction was done with Inj. Propofol 100mg (2mg/kg) and cricoid pressure given, Inj. Scoline 75mg was given and after weaning of fasciculation airway secured with endotracheal tube no-7, bilateral air entry was equal and cuff inflated, endotracheal tube was fixed at 21cm. Maintained on 50% oxygen in nitrous oxide with muscle relaxant vecuronium 4mg IV. Vitals were stable. **(Figure- 1).** After delivery of the baby, sevoflurane was started and maintained at mac 1, Inj. oxytocin 20 IU was given in IV drip, Inj. Midazolam 1mg and Inj. Fenatnyl 50mcg IV given. Uterus was well retracted and after skin sutures transverse abdominis plane (TAP) block was given with landmark technique using 23 G spinal needle and 10ml of 0.25% bupivacaine on either side for post operative analgesia **(Figure- 2)** All the inhalational anaesthetic agents were stopped and once the patient was on spontaneous ventilation and was obeying commands reversal done with Inj. Neostigmine 2.5mg and Inj. Glycopyrrolate 0.5mg IV, Patient extubated and post-operative period was uneventful. Patient was shifted to intensive care unit and was started on low molecular weight heparin 60mg, Inj. ampicillin 500 mg 6 hourly and Inj. metronidazole 100 ml 8 hourly as a prophylaxis for subendocarditis. Later she was shifted on vitamin k antagonist warfarin for 3 months with monitoring of INR to be

maintained between 2.0-3.0. Baby was healthy cried immediately after birth and had good APGAR scores. **(Figure-3)**

DISCUSSION: Pregnant patient associated with seizure should be suspected and evaluated for CVST.(3,6) They frequently present with headache which is to be differentiated from migraine, preeclampsia, stroke, subarachnoid haemorrhage, meningitis, posterior reversible encephalopathy syndrome (PRES) and cerebral artery thrombosis.(7) The literature suggests low molecular weight heparin is superior to unfractionated heparin in the treatment of CVST with decreased risk of thrombotic complications, major bleeding and death.(8) There is need of lifelong oral anticoagulants in patients with 1-2 episodes of CVST or with severe form of thrombophilia. (9) Kashkoush AI et al. carried out a systematic review on diagnosis and management of CVST during pregnancy and puerperal period in 66 patients and observed superior sagittal sinus clot in 76%, transverse/sigmoid sinus in 64% and deep venous system in 15%. In 91% patients anticoagulation was done, intraarterial thrombolysis in 26%, intraarterial thrombectomy with thrombolysis was done in 8% cases.(10) Singh et al. reported a case of CVST presented with eclampsia, timely diagnosed on MRI and managed with anticoagulant successfully.(2) Xuemin Feng et al. reported a patient in early pregnancy having CVST with haemorrhage where early CT Scan for diagnosis was done and who was given anticoagulation therapy for one month had good recovery. (11) According to AHA & American stroke association guidelines initiation of anticoagulation with unfractionated or LMWH is recommended in CVTS in peripartum period followed by vitamin K antagonist warfarin to maintain INR in a range of 2.0-3.0 for 3-12 months and for patients with recurrent CVTS in patients of thrombophilia it should be continued lifelong.

Fibrinolytics are used in those who do not respond to anticoagulation.(12) Farnoush Farzi, et al. reported post LSCS seizure due to CVST in 21 year old primigravida three hours after shifting to wards who required transfer to ICU for repeated convulsions. She was intubated and given thiopentone, diazepam, phenytoin, calcium gluconate, magnesium sulphate in view of hypocalcemia & eclampsia but did not respond. So neurological tests like MRI brain and venogram (MRV) were done showed obstruction of

cerebral venous plexus so immediate anticoagulation therapy with celexane 40mg twice daily with thiopentone infusion for three days, patient recovered and obstruction of cerebral venous plexus was resolved on MRV done on fourth day of treatment.(5) . Bektas H. et al. reported a case of 31 year old pregnancy with sudden onset of seizure at 34 weeks who had cerebral and transverse venous thrombosis causing cortical & subcortical infarcts on MRI and was managed with LMWH and phenytoin successfully along with emergency caesarean section.(3)We too in our case of CVST successfully managed LSCS under GA who was put on anticoagulants preoperatively and continued in the postoperative period.

The intraoperative course was uneventful.

Conclusion: Any seizure in peripartum period must be evaluated thoroughly by supportive neurological, cardio-respiratory examination and investigations to diagnose and treat such rare cause of CVST which is life threatening to mother with poor fetal outcome.

Anticoagulation has pivotal role in the management CVST.

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Figures & Legends



Figure- 1 Intraoperative haemodynamics under GA



Figure-2 TAP block



Figure-3 Postoperative stable patient & baby