

Integrated Management of Cerebral Sinus Venous Thrombosis, Venous Infarcts, and Acute Left Ventricular Failure in Postpartum: A Comprehensive Case Report

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Abstract: *The present case report describes the clinical course of a patient who presented with headache, seizures, left sided weakness, upon investigation revealed Cerebral sinus venous thrombosis with venous infarcts and hospital stay complicated with Acute left ventricular failure (stress cardiomyopathy) for which she was managed medically and discharged, upon follow up patient is doing well on medications.*

Keywords: Cerebral sinus venous thrombosis, Takotsubo cardiomyopathy (stress cardiomyopathy)

1. Introduction

The condition known as cerebral venous sinus thrombosis (CVST) occurs infrequently during pregnancy and after childbirth. Seizures, headaches, and other neurologic impairments are common symptoms in patients. These symptoms develop as a result of the cerebral venous sinuses being blocked and the cerebrospinal fluid not draining as well, which causes intracranial hypertension. It's crucial to diagnose and treat as soon as possible because it might be fatal. Puberty and pregnancy are recognised risk factors for cerebral venous sinus thrombosis. Pregnancy-specific Takotsubo cardiomyopathy is an uncommon condition marked by left ventricular failure and apical ballooning. Women of reproductive age may experience this temporary cardiac malfunction during the antepartum, intrapartum, or postpartum stages of pregnancy. The majority of patients respond effectively to medical treatment, and heart dysfunction usually resolves within a few weeks

The rate from 0.018% to 0.2% had been reported for developing venous thrombosis during pregnancy and puerperium. The prevalence of CSVT has long been likely to be about 0.3-0.5/100,000 per year, nevertheless latest studies have been declared a greater level of around 1-1.5/100,000 per year. While the rise in incidence has been reflected to simply greater awareness of this condition, developments and availability of imaging practices which result in the detection of rare-severe cases are most likely to be important contributing factors.

2. Case Report

31 year old female gravida 4 with 2 live children and a history of 1 abortion in the second trimester, diagnosed with pregnancy induced hypertension and abruptio placenta in the present pregnancy, for which pregnancy was terminated in view of intrauterine death and 1 month later she presented with headache, altered sensorium, focal seizures with left sided weakness, CT scan revealed venous infarct, and subsequent MR venogram revealed superior sagittal sinus, right transvers sinus, and right sigmoid sinus thrombosis (fig. b). She was managed with anticoagulants and antiseizure medications. Her hospital stay was complicated by Acute Left ventricular failure, which was managed with diuretics and non-invasive ventilation. Transthoracic echo revealed apical ballooning of the left ventricle consistent with takotsubo (stress cardiomyopathy); cardiac enzymes were positive. After stabilising the patient, a coronary angiogram and Left ventricular apicogram were done and confirmed apical ballooning with an EF of 45% with normal coronaries. Fig. a. She was worked up for hypercoagulable states, which were negative, including APLA's; however, plasma dimers were elevated (?long COVID sequele), as part of the auto immune workup revealed ANA IF 4+ positive, SS-A (Ro-60)+, Ro-52 strong positive, histones were positive, C3 and C4 were normal, but diagnostic criteria did not fit into SLE. In the last 2 months of follow-up, the patient was doing fine with newer oral anticoagulants. A repeat transthoracic echo revealed improved LV function with ejection fraction-55%.

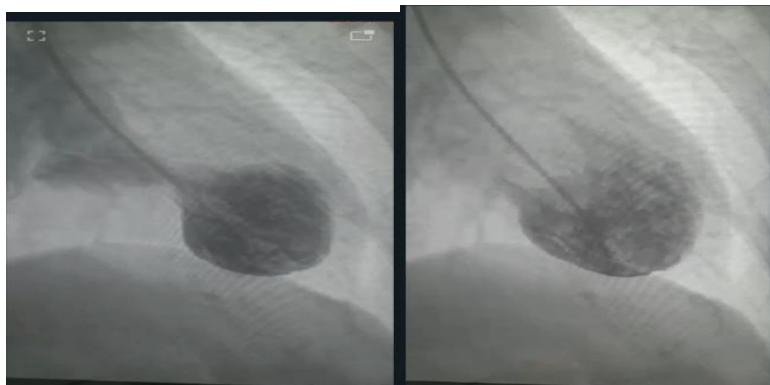


Figure a Figure a

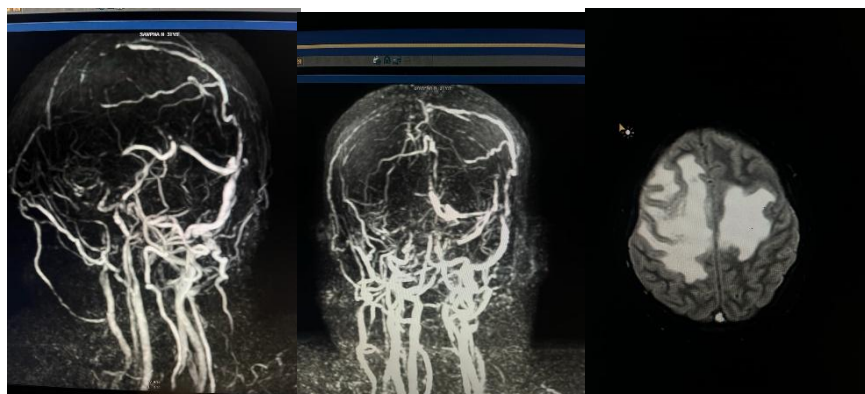


Figure b venous infarcts

3. Discussion

Cerebral venous sinus thrombosis is uncommon illness that has a critical outcome. The rate from 0.018% to 0.2% had been reported for developing venous thrombosis during pregnancy and puerperium. The prevalence of cerebral venous sinus thrombosis has long been likely to be about 0.3-0.5/100, 000 per year, nevertheless latest studies have been declared a greater level of around 1-1.5/100, 000 per year. While the rise in incidence has been reflected to simply greater awareness of this condition, developments and availability of imaging practices which result in the detection of rare-severe cases are most likely to be important contributing factors.

An important risk factor for the onset of cerebral venous thrombosis is the early postpartum period. In addition to standard risk factors including infection, smoking, and primary thrombophilia, caesarean birth and preeclampsia further increase risk in this situation. It is crucial to maintain a high level of clinical suspicion when a puerperal lady exhibits headache, seizures, focal neurological indications, and altered mental status because the symptoms are generic. When compared to Cerebral sinus venous thrombosis from other causes, puerperium-related Cerebral venous thrombosis has a more rapid onset and better prognosis.

Although Cerebral sinus venous thrombosis is three times more common in women of reproductive age, Cerebral sinus venous thrombosis has known risk factors and causes, including pregnancy, postpartum, venous thromboembolism, contraceptive drugs, oestrogen therapies, thrombophilia, and hypercoagulability, which is part of local infections and inflammatory conditions.

Treatment of Cerebral sinus venous thrombosis emphasises anticoagulation and management of symptoms to prevent neurological complications and death, while nearly two thirds of patients have venous hemorrhaging in the acute phase infarcts, anticoagulation with low molecular weight heparin was acclaimed treatment for Cerebral sinus venous thrombosis cases including pregnant females (enoxaparin 100 I. U/kgx2) as guidelines for European Federation of Neurological Societies. The percentage of mortality for all causes of cerebral venous thrombosis is about 2-10%, nevertheless it is considerably lower in the gravid female population.

Although the exact mechanism of Takotsubo cardiomyopathy is unknown, it is most likely connected to elevated plasma concentrations of catecholamines because recent physical or psychological stressors are present in the majority of patients. Takotsubo cardiomyopathy primarily occurs in postmenopausal females. A stressful event, surgery, or an acute clinical illness like a migraine, an affective disorder, a neurological disorder, cancer, or a psychiatric disorder are thought to be the main risk factors for Takotsubo cardiomyopathy, while cardiovascular risk factors are only infrequently linked to the syndrome. Symptoms include chest discomfort, hypotension, and pulmonary edema with ECG abnormalities that resemble an abrupt infarction.

4. Conclusion

An important risk factor for the onset of cerebral venous thrombosis is the early postpartum period. In addition to standard risk factors including infection, smoking, and primary thrombophilia, caesarean birth and preeclampsia further increase risk in this situation. It is crucial to maintain

a high level of clinical suspicion when a puerperal lady exhibits headache, seizures, focal neurological indications, and altered mental status because the symptoms are generic. When compared to Cerebral sinus venous thrombosis from other causes, puerperium-related Cerebral venous thrombosis has a more rapid onset and better prognosis. The rise in incidence has been reflected to simply greater awareness of this condition; developments and availability of imaging practices which result in the detection of rare-severe cases are most likely to be important contributing factors

thrombosis associated with pregnancy and puerperium. Review of 67 cases. *Stroke*. 1993; 24: 1880-1884.

Takotsubo cardiomyopathy often affects elderly women who have recently experienced a great deal of physical or emotional stress. Takotsubo cardiomyopathy is a reversible cardiomyopathy that is characterised by positive troponin, normal coronaries, left ventricular apical ballooning on transthoracic echo, lower left ventricular ejection fraction, and Left ventricular angiography displaying characteristic Left ventricular apical wall motion abnormalities with a distinctive, shaped LV round bottom and a narrow neck.

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