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Cerebral venous sinus thrombosis in the postpartum period as an initial presentation of ulcerative colitis: a case report

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Abstract

Cerebral venous sinus thrombosis is an uncommon cerebrovascular disorder with diverse presentations, often affecting young women in the peripartum period due to hypercoagulability. Inflammatory bowel disease is a recognised prothrombotic condition, although the coexistence of cerebral venous thrombosis is exceedingly rare. We describe a 27-year-old primiparous woman who is one month postpartum, presenting with a generalised tonic-clonic seizure. Imaging revealed a frontal lobe venous haemorrhage with superior sagittal sinus thrombosis. Her history was notable for intermittent bloody, mucoid diarrhoea since late pregnancy. Postpartum sigmoidoscopy showed severe colitis with obscured vascular pattern, mucosal granularity, shallow ulcers, and spontaneous bleeding, while histopathology confirmed ulcerative colitis. She was anticoagulated for venous thrombosis and achieved remission of colitis with corticosteroid therapy. This case illustrates the unusual intersection of obstetric physiology, systemic inflammation, and gastrointestinal disease. It emphasises the importance of considering inflammatory bowel disease in postpartum women presenting with thrombotic complications and gastrointestinal symptoms.

Key words: cerebral venous sinus thrombosis, postpartum complications, ulcerative colitis, inflammatory bowel disease, anticoagulation

Introduction

Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke, accounting for less than one per cent of all cases. It affects a younger population compared with arterial strokes and is strongly linked to prothrombotic states, including pregnancy and the postpartum period. The postpartum period has a significantly increased risk due to hormonal changes, venous stasis, and reduced fibrinolysis.[1,2] Inflammatory bowel disease (IBD) contributes independently to thromboembolic risk. Patients with ulcerative colitis or Crohn's disease face a two- to three-fold higher risk of venous thrombosis compared with the general population.[3,4] This risk increases further during active disease flares, hospitalisation, and corticosteroid therapy. While deep vein thrombosis and pulmonary embolism are the more commonly reported thrombotic complications in both the postpartum period and ulcerative colitis, cerebral venous sinus thrombosis remains rare.[5]

We present the case of a young woman who developed CVST one month after delivery, in whom further evaluation uncovered ulcerative colitis. This case highlights the diagnostic challenges and therapeutic dilemmas encountered and emphasises the need for vigilance when neurological and gastrointestinal features intersect in the postpartum period.

Case presentation

A 27-year-old primiparous woman, one month after an uncomplicated pregnancy, was admitted following a generalised tonic-clonic seizure. She had no previous history of seizures, hypertension, or diabetes, and no relevant family history of neurological or thromboembolic disorders. She was not using oral contraceptives or anticoagulants and had been on routine supplementary vitamins.

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On admission, she was febrile, drowsy, but arousable. Blood pressure and other vital signs were stable. The neurological examination revealed no focal motor or sensory deficits. Initial laboratory investigations, including complete blood count, renal and liver profiles, serum electrolytes, and coagulation parameters, were within normal limits. Autoimmune and thrombophilia screening, including ANA and ANCA panels, was negative.

Magnetic resonance imaging (MRI) of the brain revealed a venous haemorrhage in the right frontal lobe. Magnetic resonance venography confirmed thrombosis of the superior sagittal sinus. A diagnosis of CVST was made, and therapeutic anticoagulation was commenced.

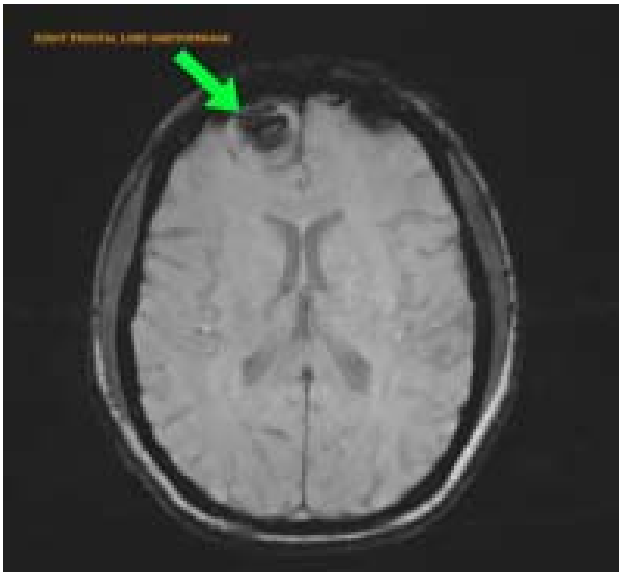

Figure 1. MRI SWI image showing a right frontal cortical haemorrhage.

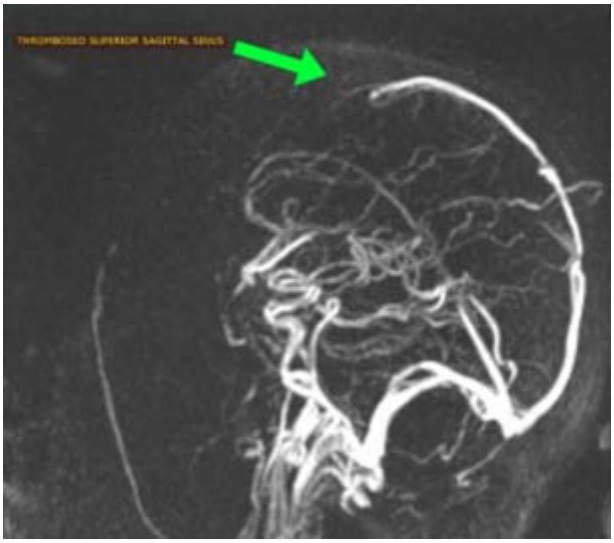

Figure 2. MR venogram image showing superior sagittal sinus thrombosis.

She had experienced intermittent episodes of blood and mucous diarrhoea for one month before her delivery without pyrexia, arthralgia, abdominal pain or oral ulcers, and her diarrhoea progressively worsened during her postpartum period.

She has undergone sigmoidoscopy, which revealed severe colitis with granular mucosa, obscured blood vessels, shallow ulcerations, and spontaneous bleeding. Biopsies were obtained from suspicious areas.

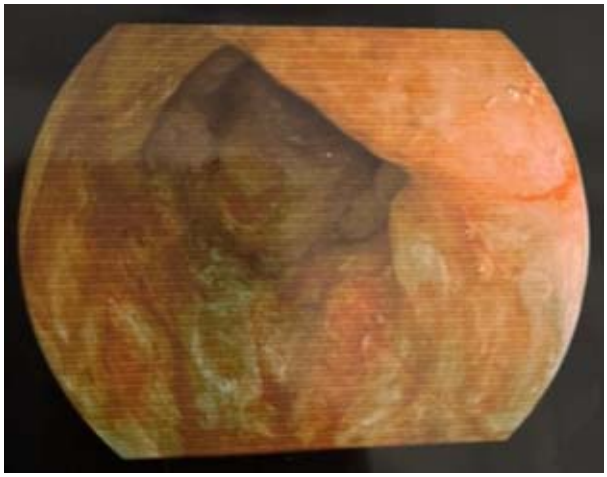

Figure 3. Sigmoidoscopy image showing severe colitis with granular mucosa.

Histopathological analysis revealed that the colonic mucosa had moderately distorted crypt architecture and surface ulceration. The lamina propria demonstrated dense lymphoplasmacytic infiltration, scattered neutrophils, and occasional eosinophils. Cryptitis and crypt abscesses were noted. No granulomas, dysplasia, or malignant changes were identified. These features were diagnostic of ulcerative colitis.

The patient received high-dose intravenous corticosteroids and high-dose oral mesalazine (4.8 g/day), then transitioned to a tapering oral regimen, which rapidly improved gastrointestinal symptoms and allowed initiation of maintenance therapy. Therapeutic anticoagulation was initiated with low-molecular-weight heparin and continued until clinical remission, after which the patient was transitioned to oral warfarin. A six-month course of anticoagulation is planned, in accordance with guideline-based management of provoked venous thrombosis. She has not encountered further neurological or any haematological complications and achieved remission of ulcerative colitis on subsequent evaluation.

Discussion

This case illustrates a rare clinical scenario where CVST occurred in the postpartum period during a flare of ulcerative colitis. The combination of obstetric physiology and systemic inflammation created a significantly prothrombotic environment, culminating in a potentially life-threatening neurological event.

The postpartum period is inherently a hypercoagulable state due to the physiological increase of clotting factors, decreased levels of anticoagulants, and reduced fibrinolytic activity, all of which increase the risk of venous thrombosis.[1,2] The risk is further enhanced by relative immobility and vascular changes. Consequently, CVST is markedly more common among women during pregnancy and the postpartum; however, the risk is minimal during the late postpartum phase.[7]

The coexistence of inflammatory bowel disease further increases the risk of thrombosis. Ulcerative colitis (UC), particularly when active, enhances coagulation through systemic inflammation, endothelial damage, activation of platelets, and altered fibrinolysis. Although the majority of thrombotic events in IBD involve the lower limb veins or the pulmonary vasculature, cerebral venous sinus involvement has been documented, albeit rarely, typically in the context of active or long-standing disease.[1,4,5,6] However, its manifestation during the very first flare of UC is exceptionally uncommon, with only isolated cases described in the literature.[6]

The initial presentation in this patient with seizure, fever and frontal lobe haemorrhage raised a broad differential diagnosis that included eclampsia, haemorrhagic stroke and cerebral infections. Imaging with early MRI confirmed sagittal sinus thrombosis, but underlying ulcerative colitis was pivotal in explaining the increased thrombotic tendency at this stage of the postpartum period. The gastrointestinal history was essential in diagnosis, which is commonly overlooked and frequently attributed to benign causes such as haemorrhoids in pregnant women.[8]

Managing such patients presents a considerable therapeutic challenge. Anticoagulation is the cornerstone of CVST treatment, even in the presence of an intracerebral haemorrhage, as it prevents thrombus propagation and promotes recanalisation.[7,9] Further, anticoagulation in the setting of active UC poses the risk of exacerbating gastrointestinal bleeding, which necessitates a careful, individualised approach. In this case, anticoagulation was safely administered with low-molecular-weight heparin due to its short half-life and reversibility, combined with corticosteroid therapy, resulting in a favourable outcome.

The choice of immunosuppressive therapy was also crucial. High-dose corticosteroids and aminosalicylates rapidly controlled the inflammatory process. These agents are considered safe during breastfeeding, allowing effective treatment of severe ulcerative colitis without interrupting lactation. The successful combination of anticoagulation and immunosuppression underscores the importance of coordinated multidisciplinary care in UC.[10]

This case highlights the importance of vigilance when evaluating thrombotic events in the postpartum period. Typically, CVST is attributed solely to obstetric hypercoagulability. However, the presence of gastrointestinal symptoms should prompt consideration of underlying IBD as the leading cause. Early diagnosis is crucial for the timely initiation of appropriate therapy, which can improve overall outcome.

Conclusion

This case demonstrates a rare but significant link between ulcerative colitis and cerebral venous sinus thrombosis in the postpartum period. CVST occurring during the very first flare of ulcerative colitis is exceptionally rare, yet clinicians must remain vigilant and consider this diagnosis when evaluating such patients. Early diagnosis, careful adjustment of anticoagulation and immunosuppression, and multidisciplinary care facilitated a favourable outcome in this patient.

Author declaration

Conflict of interests

The authors declare that they have no known competing interests.

Criteria for authorship

All the authors contributed to the diagnosis and management of the patient, and to the drafting, critical revision, and final approval of the manuscript.

Consent for publication

Informed written consent for publication was obtained from the patient.

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