# A Complex Case of Portal Vein Thrombosis in the Postpartum Period

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## Introduction

Hypercoagulability secondary to pregnancy is a physiological adaptation that reduces the risk of postpartum hemorrhage. This shift is driven by hormonal changes that result in elevated levels of clotting factors VII, VIII, and X, as well as von Willebrand factor and fibrinogen. As pregnancy progresses, resistance to protein C increases, further heightening the risk of thrombus formation. The risk of venous thromboembolism reaches its peak during the postpartum period and remains a significant concern for up to six weeks following delivery. The most common thrombophilic manifestations of pregnancy are deep vein thrombosis and pulmonary embolism[2]. However, in rare cases, thrombus formation can involve the portal vein, leading to intestinal ischemia.

## Case Presentation

- A 27-year-old female (G2P0202) with no previous history of thrombosis or known thrombophilic condition presented to the Emergency Department 26 days postpartum with severe abdominal pain.
- Her most recent obstetric course was complicated by preeclampsia and iron deficiency anemia. She had a spontaneous vaginal delivery at 36 WGA with an estimated blood loss of 50mL. Hemoglobin and hematocrit on discharge were 6.8 g/dL and 23.8%, respectively.
- Medications included nifedipine 30mg QD for persistent postpartum hypertension.
- Vitals on presentation: temperature 101.5 °F, heart rate 150bpm, respiratory rate 24 breaths per minute, and blood pressure 118/81mmHg.
- On exam she was peritonitic with limited ambulation.
- Computed tomography (CT) of the abdomen and pelvis revealed a portal vein thrombus that extended into the proximal splenic vein and diffusely involved the superior mesenteric vein and its branches.

## Imaging

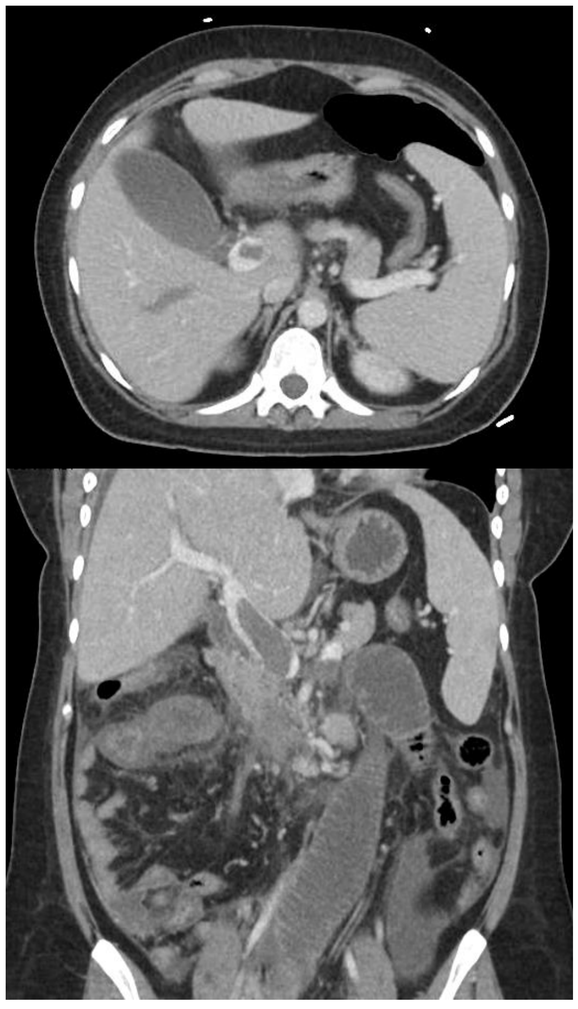

Figure 1: CT of abdomen and pelvis

## Management

- Emergent exploratory laparotomy confirmed small bowel ischemia involving the mid jejunum; 45cm of necrotic tissue was resected.
- Anticoagulation was held postoperatively due to hematemesis. Endoscopy revealed bleeding at the primary anastomotic site.
- IR suction thrombectomy was performed to restore patency to the portal vein.
- She was discharged on rivaroxaban 20mg QD for 30 days.
- Since, she has followed out-patient with cardiology and primary care for hypertensive management. In discussion of obstetric care, she was advised that future pregnancies would pose significant, life-threatening risks.

## Discussion

Portal vein thrombosis is an uncommon manifestation of postpartum hypercoagulability. Other accounts reported of similar cases include women who presented with characteristic abdominal pain concerning for ischemia within the first two weeks postpartum, those whose obstetric course was complicated by cesarean section and resulted in postoperative immobility, and those with hematologic disorders[1,3,4,5]. This patient presented approximately four weeks postpartum, underwent vaginal delivery, and had a negative thrombophilia workup. In a patient who has already endured extensive ischemic damage, mitigating the risk of further thrombosis was of primary concern. Anticoagulation is the mainstay of treatment for portal vein thrombosis, rather than surgical or percutaneous thrombectomy. However, in this patient with postoperative bleeding, a procedural approach was warranted. This case underscores the importance of thoroughly evaluating abdominal pain in the postpartum period and effectively assessing thrombotic risk to reduce the occurrence of life-altering sequelae.

## References

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