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Original Research Article

Acute Mesenteric Venous Thrombosis in Pregnancy: A Case Report and Literature Review

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Abstract:

Acute mesenteric venous thrombosis (MVT) is an uncommon but life-threatening condition, accounting for 5–15% of mesenteric ischemia cases. The hypercoagulable state of pregnancy, combined with venous stasis and other risk factors, significantly increases the risk of thrombosis. However, MVT remains extremely rare in pregnancy, with only a handful of cases documented in the literature. This report presents the case of a 25-year-old woman at 24 weeks and 1 day of gestation who developed an acute abdomen caused by extensive intestinal ischemia due to MVT. Despite emergency laparotomy, bowel resection, and hysterotomy, the patient succumbed to irreversible shock. This case highlights the diagnostic and therapeutic challenges of managing MVT in pregnancy and emphasizes the need for early recognition and prompt intervention to improve outcomes.

Keywords: Mesenteric venous thrombosis, pregnancy, acute abdomen, intestinal ischemia, hypercoagulability.

Introduction

Acute mesenteric venous thrombosis (MVT) is a rare but significant cause of intestinal ischemia, with an estimated incidence of 2.7 per 100,000 person-years. [1] It accounts for 5–15% of all mesenteric ischemia cases. Unlike arterial mesenteric ischemia, MVT results from impaired venous drainage, leading to bowel wall edema, ischemia, and necrosis. Mortality rates for MVT are high, ranging from 20% to 50%, particularly in delayed diagnoses. [1,2]

Pregnancy predisposes women to venous thromboembolism due to a hypercoagulable state characterized by increased clotting factors (VII, VIII, and fibrinogen), reduced anticoagulant activity, and venous stasis from uterine compression of the inferior vena cava. [3]

These changes are physiologically protective against postpartum hemorrhage but increase thrombotic risk. Additional risk factors such as dehydration, infection, inherited thrombophilias, and prolonged immobility further elevate this risk. MVT during pregnancy is rare, with fewer than 20 cases reported in the literature. [4] Symptoms like abdominal pain, distension, and vomiting often mimic normal pregnancy-related discomforts, leading to diagnostic delays.

Doppler ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI) play pivotal roles in diagnosis, although concerns for fetal safety limit imaging choices during pregnancy.

Management involves anticoagulation with low-molecular-weight heparin (LMWH), supportive care, and surgical intervention for bowel necrosis. [3,5] Despite these measures, prognosis remains poor when diagnosis and treatment are delayed. This case highlights the diagnostic and therapeutic challenges of MVT during pregnancy, underscoring the importance of early recognition and intervention.

Case Report

A 25-year-old G3P1L1A1 woman at 24 weeks and 1 day of gestation presented with severe abdominal pain, vomiting, progressive abdominal distension, and anuria. The patient had been fasting during Ramadan, likely contributing to dehydration. On admission, she was in hypovolemic shock, with pallor, dehydration, and a tense, distended abdomen.

Vital signs included a blood pressure of 90/60 mmHg and a heart rate of 140 bpm.

Ultrasound revealed hemoperitoneum and absent fetal heart sounds, suggesting uterine rupture or another catastrophic event. Emergency laparotomy uncovered extensive gangrenous bowel loops from the proximal jejunum to the distal ileum, with visible thrombi in the mesenteric veins.

Approximately 150 cm of necrotic bowel was resected, followed by a jejunoileal anastomosis. Hysterotomy confirmed a fresh stillbirth.

Despite intensive postoperative care, the patient succumbed to irreversible shock.

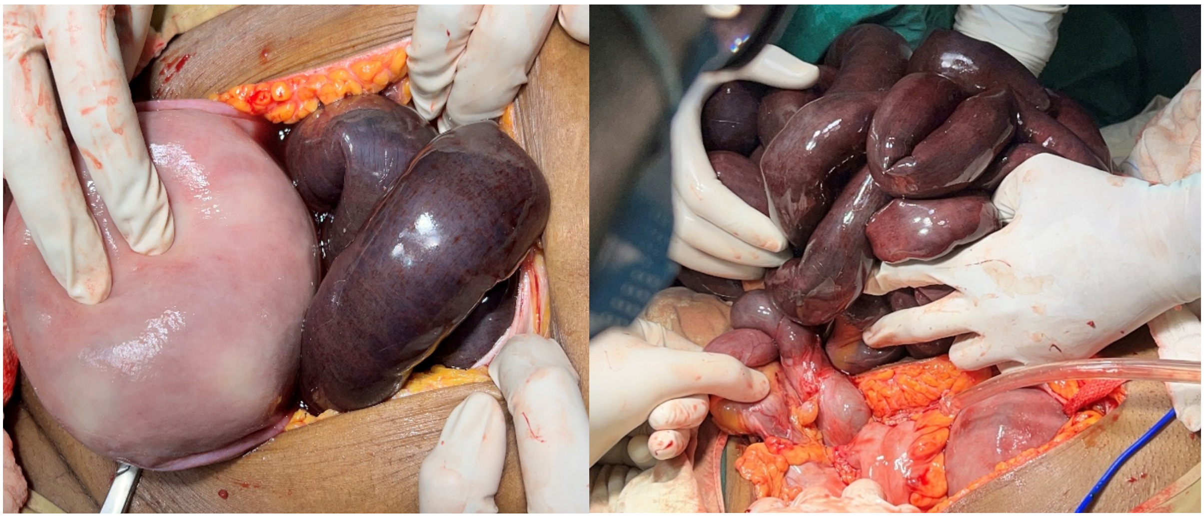

Figure 1: Intraoperative pictures showing distended gangrenous bowel loops.

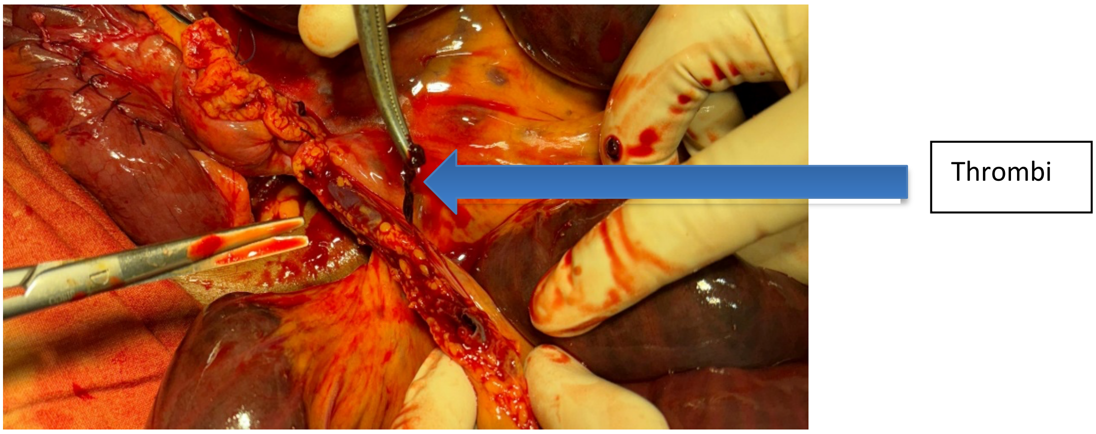

Figure 2: showing thrombi in the mesenteric vein branches

Discussion

MVT is a rare but critical cause of intestinal ischemia, particularly during pregnancy Mesenteric venous thrombosis is a rare entity with an estimated incidence of only 2.7 per 100000 person-years and responsible for 5 to 15% cases of mesenteric ischemia. The mortality rate among patients with acute MVT ranges from 20 to 50%. [1,2] It is associated with Virchow's triad—hypercoagulability, venous stasis, and endothelial injury—all exacerbated during pregnancy. [4] The physiological changes in pregnancy, including increased coagulation factors, significantly increase thrombotic risk. In addition, as pregnancy progresses, the enlarged uterus compresses the inferior vena cava. The resulting increase in blood flow stasis adds to the pro-thrombogenic risk. [3] In this case, additional risk factors such as prolonged fasting and dehydration further contributed to thrombosis. Dehydration and hypovolemia reduce the circulating blood volume leading to vasoconstriction and shunting of blood flow away from intestines causing intestinal ischemia. [4]

The clinical presentation of MVT is nonspecific, with symptoms such as abdominal pain, nausea, vomiting, and distension often overlapping with benign pregnancy-related changes. [2,4] Advanced imaging, including Doppler ultrasound, CT, or MRI, is essential for diagnosis. [2] While CT and MRI provide high sensitivity, concerns over fetal radiation exposure limit their use during pregnancy. Doppler ultrasound, though less sensitive, remains a practical first-line diagnostic tool. [3]

Management involves anticoagulation with LMWH, which is safe during pregnancy and prevents thrombus propagation. Pain control, fluid and electrolyte replacement and bowel rest should be initiated with the acute presentation. Nasogastric intubation can be initiated on presentation as needed in cases of ileus, abdominal distension, and intractable nausea and vomiting. Supportive treatment also includes blood transfusion for patients presenting with bleeding. And if the patient has perforation, sepsis secondary to bacterial translocation, or septic thrombophlebitis appropriate antibiotics should be initiated.

Surgical intervention is necessary in cases of bowel necrosis or perforation. Exploratory laparotomy and resection and anastomosis are the treatments for this acute entity if peritoneal symptoms develop. In the absence of acute symptoms, conservative treatment in the form of antibiotics and IV hydration along with anticoagulation treatment can be given. Anticoagulant therapy is the cornerstone for managing this condition along with surgical or conservative management. Low molecular weight heparin in the doses of 0.6mg/kg or unfractionated heparin in the dose of 5000IU 6 hourly followed by overlapping with warfarin to maintain INR between 2 to 3 is the treatment of choice. There are no defined guidelines for the duration of anticoagulation and the decision is to be made as per the case. The decision on continuation or termination of pregnancy is taken as per the case and available facilities. [2,3]

Despite these interventions, MVT carries a high mortality rate due to delayed diagnosis, as seen in this case.

Summary

MVT is an uncommon, yet important cause of intestinal ischemia. Causes include local factors and prothrombotic states. The most common presentation is abdominal pain, and, with enough suspicion, CT of the abdomen is diagnostic. Treatment is mainly medical using anticoagulation as soon as the diagnosis is made even in the presence of bleeding or the need for surgical intervention.

The duration of treatment is based on the presence of identifiable reversible risk factors in which case anticoagulation can be given for 3–6 months. Otherwise, indefinite anticoagulation should be considered. Surgery is required in cases of transmural infarction and with the presence of peritoneal signs. Outcomes are mainly determined by the underlying prothrombotic state, recurrence of the thrombosis, and developing short bowel syndrome.

Conclusion

This case underscores the importance of considering mesenteric venous thrombosis in the differential diagnosis of acute abdomen in pregnancy. Although rare, it is a life-threatening condition requiring prompt diagnosis and intervention. A multidisciplinary approach involving obstetricians, surgeons, and intensivists is essential for effective management. Increased awareness and documentation of MVT in pregnancy are crucial to guide the development of standardized diagnostic and therapeutic protocols.

References

1. Acosta S, Alhadad A, Svensson P, Ekberg O. Epidemiology, risk and prognostic factors in mesenteric venous thrombosis. Br J Surg. 2008; 95(10):1245–1251.
2. Kumar S, Sarr MG, Kamath PS. Mesenteric venous thrombosis. N Engl J Med. 2001; 345(23):1683–1688.
3. Shui LH, Rafi J, Corder A, Mowbray D. Midgut volvulus and mesenteric vessel thrombosis in pregnancy: case report and literature review. Arch Gynecol Obstet. 2011; 283(Suppl 1):S39–S43.
4. Vacca A, Garau P, Cauli A, Mameli A, Mathieu A. Primary antiphospholipid syndrome with mesenteric venous thrombosis presenting with intestinal infarction: a case description. Lupus. 2007; 16(6):455–456.
5. Singal AK, Kamath PS, Tefferi A. Mesenteric venous thrombosis. Mayo Clin Proc. 2013; 88(3):285–294.