

Case Report

Postpartum Ovarian Vein Thrombosis as a Cause of Acute Abdomen A Case Report

Mugahid A Salih¹, Malaz I Ibrahim^{2*}, Abrar Y. Ali² and Alnazeer Y. Abdelbagi²

¹Assistant Professor of Surgery, Faculty of Medicine, University of Khartoum, Sudan

²Faculty of Medicine, University of Khartoum, Sudan

ARTICLE INFO

ABSTRACT

Received Date: July 12, 2023 Accepted Date: August 31, 2023 Published Date: September 07, 2023

KEYWORDS

Right Iliac Fossa Pain; Ovarian Vein Thrombosis; Acute Appendicitis

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Citation for this article: Mugahid A Salih, Malaz I Ibrahim, Abrar Y. Ali and Alnazeer Y. Abdelbagi. Postpartum Ovarian Vein Thrombosis as a Cause of Acute Abdomen: A Case Report. Journal of Case Reports: Clinical & Medical. 2023; 6(1):171

Corresponding author: Malaz Ibrahim, University of Khartoum Faculty Medicine, Sudan Email: loza.22001166@gmail.com

Introduction: Ovarian vein thrombosis is a likely severe complication correlated with conditions such as pelvic inflammatory disease, malignancy, and recent surgery. Also, it's associated with pregnancy.

Case Report: A 28-year-old female presented to the casualty complaining of right iliac fossa pain for 1 day prior to admission (4 days post-delivery of her second child) associated with slight fever and anorexia, with a single episode of vomiting. She denied any preceding periumbilical pain. On clinical examination, there is tenderness on deep palpation to the right iliac fossa with positive rebound tenderness and guarding. On further investigations, laboratory investigations showed HB 12 g/dl, WBCS 14,000 l, platelets 340,000 l, urea 37 mmol/L, creatinine 0.7 mg/dL, Na 135 mmol/L, and K 3.3 mmol/L. Ultrasound of the abdomen couldn't exclude acute appendicitis and showed a bulky uterus. Intraoperatively, there were edema and ischemic changes in the right fallopian tube and right ovary. A huge hard longitudinal retroperitoneal mass was found arising from the uterus overlying right psoas muscle extending upward; the overlying peritoneum was dissected. Thrombosed ovarian vessels were excised together with the necrotic right ovary and right tube after consent from the family. One week later, the patient made a dramatic recovery.

Conclusion: Right-sided abdominal pain is not only confined to appendiceal diseases, so other diseases should be taken into consideration.

INTRODUCTION

Ovarian vein thrombosis is a likely severe complication correlated with conditions such as pelvic inflammatory disease, malignancy, and recent surgery. Also, it's associated with pregnancy [1]. Puerperal Ovarian Vein Thrombosis (POVT) is an uncommon cause of postpartum febrile illness. Because of its atypical clinical features and signs, the diagnosis of POVT is challenging. It's predicted to have a 0.01–0.18 incidence in all postpartum patients [2].

CASE REPORT

A 28-year-old female, married and educated to high school, was referred to our unit 4 days following the uncomplicated vaginal delivery of her second child, presenting with right iliac fossa pain for 1 day prior to admission. She complained of sudden continuous abdominal pain in the right iliac fossa, with no radiation and no relieving factors, associated with a fever of 38.5 degrees, refusal of feeding, and a single

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episode of vomiting. She denied any preceding periumbilical pain. Apart from the fever and refusal to feed, there are no other symptoms related to the GIT or genitourinary system and no other abnormalities related to other systems. On clinical examination, the patient looked ill, febrile, not pale, jaundiced, or cyanosed, and had no palpable lymph nodes. On abdominal examination, the abdomen is normal by inspection; there is no distention. There is tenderness on deep palpation to the right iliac fossa, with positive rebound tenderness and guarding.

Laboratory investigation showed: HB 12 g/dl, WBCS 14,000 l, which is slightly increased. Platelets: 340,000 l (normal), urea 37 mmol/L (increased), creatinine 0.7 mg/dL (normal), Na 135 mmol/L (normal), and K 3.3 mmol/L (decreased). Ultrasound abdomen couldn't exclude acute appendicitis as the appendix was obscured by overlying bowel gas, and it showed a bulky uterus and no other abnormalities. An obstetric department consultation was done, and it excluded gynecological causes. A working diagnosis of acute appendicitis was made.

During the operation, Gridiron's incision was made. Intraoperative findings: the appendix was normal; there were edema and ischemic changes in the right fallopian tube and right ovary. A huge hard longitudinal retroperitoneal mass was found arising from the uterus overlying right psoas muscle extending upward; the overlying peritoneum was dissected. Thrombosed ovarian vessels were excised together with the necrotic right ovary and right tube after consent from the family. The right ureter was identified and secured (Figure 1 & 2).



The postoperative period was smooth, and the patient was put on clexane and antibiotics. D-DIMER was positive. Doppler ultrasound of the abdomen excluded any thrombi in the IVC or deep pelvic veins. The patient was discharged after one week in good condition while waiting for histopathology.

DISCUSSION

"The ovarian veins originate from the venous plexus in the broad ligament and communicate with the uterine plexus. The ovarian vein on each side is in the retroperitoneum anterior to the psoas muscle. The right ovarian vein joins the inferior vena cava below the right renal vein, and the left ovarian vein drains into the left renal vein" [3].

Ovarian Vein Thrombosis (OVT) pathogenesis can be explained by Virchow's triad: hypercoagulability, venous stasis, Pregnancy is considered a and endothelial injury. hypercoagulable state due to increased platelet adhesion, decreased fibrinolysis with increasing levels of fibrinogen, and other coagulation factors (VII, VIII, IX, XII, and von Willebrand Factor) [4]. OVT is most likely to occur on the right side in up to 80-90% of cases, and this is attributed to several factors. Pregnancy's physiologic dextrorotation of the uterus and the acute angle between the right ovarian vein and the inferior vena cava make it more prone to compression. The right ovarian vein also has a longer course than the left one, with more incompetent valves on the right side, making it more prone to blood stasis [5]. Vascular endothelial injury can occur either from direct trauma due to surgical intervention or indirectly from local inflammation or infection with the antegrade flow pattern in the right ovarian vein, making it more prone to bacterial infection, especially in the presence of endometritis [4].

Pregnancy is accompanied by a 4- to 6-fold increased risk of venous thromboembolism; the risk further increases in the postnatal period, and this can be explained by the hypercoagulable state, endothelial injury, and venous stasis (Virchow's triad) occurring in these periods. During the hypercoagulable state, there is deceased fibrinolysis with increasing platelet adhesion, fibrinogen, clotting factors VII, VIII, IX, XII, and von Willebrand factor. At delivery, the ovarian vein diameter reached three times its normal diameter, with a 60-fold increase in the blood volume [4].



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Journal Of Case Reports: Clinical & Medical ISSN# 2835-1347

Exogenous factors such as birth trauma, local inflammation occurring in endometritis, and pelvic inflammatory disease cause intimal injury and contribute to POVT [6]. Caesarean section, twin delivery, and infection have been reported as risk factors for POVT [7].

POV usually occurs within the first ten puerperal days and can develop until the 4th week postnatally. It could be completely asymptomatic, but the majority of patients present with vague symptoms such as abdominal pain, fever, nausea, vomiting, ileus, and malaise. A deep adnexal mass has been detected in about 50 percent of cases. Among the above symptoms, intense low pelvic pain and pyrexia are the most frequent and prominent [8].

Various studies have demonstrated that POVT can be complicated by septic dissemination, pulmonary embolism, and ovarian infarction with dissemination of the clot to the inferior vena cava and renal veins. Ureteral obstruction, hydronephrosis, and transient renal failure are also very common complications that reduce the patient's quality of life because of dialysis and its consequences; thus, prompt and early diagnosis and management are required to prevent these sequelae [9].

OVT generally presents in pregnant patients with fever, pelvic pain, and a right-sided abdominal mass. Its diagnosis is challenging due to the overlapping presentation and clinical features with other differential diagnoses like acute appendicitis, inflammatory bowel disease, and ovarian torsion. The first radiological modality used in diagnosing OVT is Doppler ultrasound because of its availability. But it's incompetent to examine the full extent of the ovarian vein, so more imaging modalities may be necessary. Other imaging modalities include CT with contrast and MRA, which is the most sensitive and specific. CT with contrast is both time- and costsaving [6].

Ovarian vein thrombosis with spontaneous resolution is a possibility [5]. However, since it is a life-threatening condition, medical treatment in such cases is recommended in the form of intravenous antibiotic therapy and anticoagulation therapy, with heparin and warfarin being traditionally used, although there are no specific guidelines for the duration of treatment [3,10]. Surgical options in the form of ovarian vein ligation, excision, and caval thrombectomy are considered where

contraindications to anticoagulant therapy are present, patients continue to have recurrent emboli despite pharmacological treatment, a free-floating thrombus, or a lack of compliance. Inferior Vena Caval (IVC) filters were used to prevent pulmonary embolism, but they have certain indications [4].

CONCLUSION

We present a patient diagnosed with POVT intraoperatively and managed surgically, showing a dramatic recovery after the operation. According to our experiences and after scrutinizing past literature, we suggested that right iliac fossa pain in the postpartum period should raise a suspicion of OVT along with the other common deferential diagnoses.

CONFLICT OF INTEREST & FUNDING:

The authors have no competing interests and none of the funding was provided.

ETHICAL APPROVAL

The patient signed informed consent. The research was ethically approved.

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Journal Of Case Reports: Clinical & Medical ISSN# 2835-1347



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