

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

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### Abstract

**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 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 investigation showed HB 12 g/dl, WBCS 14,000, Platelets 340,000, Urea 37 mmol/L, Creatinine 0.7 mg/dL, Na 135 mmol/, K 3.3 mmol/L. Ultrasound abdomen couldn't exclude acute appendicitis, showed bulky uterus. Intraoperatively, there were odema 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 (A & V) were excised together with the necrotic right ovary and right tube after consent from the family. One week later, the patient showed dramatic recovery.

**Conclusion:** A right side abdominal pain is not only confined to appendiceal diseases, so other disease should be put in consideration.

**Keywords:** *Right Iliac Fossa Pain; Ovarian Vein Thrombosis; Acute Appendicitis*

### 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, POVT is challenging that has been known with growing recurrence in the past years. It's predicted to have a 0.15 - 0.18 incidence all postpartum patients [1,2].

### Case Report

M.A.A, 28 Year old female, married, educated to high school, mother of two children, complaining of right iliac fossa pain for 1 day prior to admission (4 days post delivery of her second child), she was referred to our unit 4 days following uncomplicated vaginal delivery of her second child with sudden abdominal pain in the right iliac fossa continuous, no radiation and no relieving factors, associated with

slight fever and anorexia, with single episode of vomiting she denied any preceding periumbilical pain. Apart from the fever and anorexia no other symptoms related to the GIT or genitourinary system and no other abnormalities related to other systems.

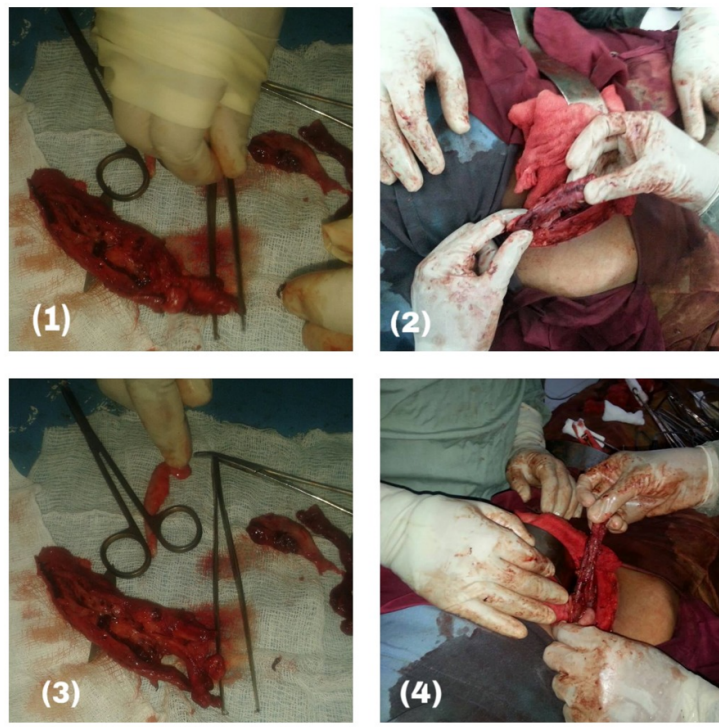
On clinical examination, the Patient looked ill, febrile, not pale, jaundiced or cyanosed, no palpable lymph nodes. On abdominal examination, the abdomen is normal by inspection, no distention. There is tenderness on deep palpation to the right iliac fossa with positive rebound tenderness and guarding.

Laboratory investigation showed: HB 12 g/dl, WBCS 14,000, platelets 340,000, Urea 37 mmol/L, creatinine 0.7 mg/dL, Na 135 mmol/, K 3.3 mmol/L.

Ultrasound abdomen couldn't exclude acute appendicitis, showed bulky uterus and no any other abnormalities. Obstetric department consultation was done and it excluded gynecological causes.

During the operation, Gridiron's incision was done. Intraoperative findings, the appendix was normal, there were odema 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 (A & V) were excised together with the necrotic right ovary and right tube after consent from the family. The right ureter was identified and secured.

The post operative period was proceeded smooth and the patient was put on clexane and antibiotics. D-DIMER was positive. Doppler ultrasound to the abdomen excluded any thrombi in the IVC or deep pelvic veins. The patient was discharged after one week in a good condition 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 and endothelial injury. Pregnancy is considered a 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 in 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 making 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 5 fold increased risk of venous thromboembolism, the risk further increases in the postnatal period. This can be explained by the hypercoagulable state, endothelial injury and venous stasis occurring in these periods. During the hypercoagulable state, there is decreased fibrinolysis with increasing platelet adhesion, fibrinogen, clotting factors VII, VIII, IX, XII, and von Willebrand Factor. At delivery, the ovarian vein diameter reached 3 times its normal diameter with 60 folds increased in the blood volume [6].

Exogenous factors such as birth trauma, local inflammation occurring in endometritis and pelvic inflammatory disease, causing intimal injury and contributing to POVT [7]. Caesarean section, twin delivery, and infection have been reported as risk factors for POVT [8].

POVT usually occurs within the first 10 puerperal days. It can develop until the 4<sup>th</sup>-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% of cases, among the above symptoms the intense low pelvic pain and pyrexia are the most frequent and most prominent symptoms [6,9].

Various studies have demonstrated that POVT can be complicated by septic dissemination, pulmonary embolism, ovarian infarction with dissemination of 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 [6,9].

OVT generally presents in pregnant patients with fever, pelvic pain, and right sided abdominal mass. Its diagnosis is challenging due to the overlapping presentation and clinical features with other differential diagnosis like appendicitis, the acute type, 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 maybe necessary. Other imaging modalities are CT with contrast and MRA. MRA is the most sensitive and specific. CT with contrast is both time and cost saving [10].

Ovarian vein thrombosis spontaneous resolution is a possibility [5]. But since it is a life threatening condition a medical treatment of such cases is recommended in the form of intravenous antibiotic therapy and anticoagulation therapy with heparin and warfarin have been used traditionally although there are no specific guidelines for the duration of treatment [3,11]. Surgical options in form of ovarian vein ligation, excision and caval thrombectomy is considered where contraindications to anticoagulant therapy is present, where patients continue to have recurrent emboli despite pharmacological treatment, a free- floating thrombus or lack of compliance [4].

Inferior vena caval (IVC) filters were used to prevent pulmonary embolism however it has 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 scrutinising past literature, we suggested that a right iliac fossa pain is not only limited to appendiceal diseases, so other disease should be put in consideration.

### Conflict of Interest

None.

### Ethical Approval

Patient signed informed consent. The research was ethically approved.

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