Case Report

Septic postpartum ovarian vein thrombosis

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ABSTRACT

This report describes the clinical findings and outcome of a patient suffering from septic postpartum ovarian vein thrombosis. Treatment modalities are well described and range from hysterectomy and thrombectomy to the use of vena cava filters in combination with anticoagulation and antibiotics. Defervescence with a combination infusion of tissue plasminogen and heparin were used. This treatment approach has been found particularly successful in cases of ilio-femoral, hepatic, renal and vena caval thromboses.

Keywords: Ovarian vein thrombosis, thrombolytic therapy, recombinant tissue type plasminogen activator, heparin.

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Ovarian vein thrombosis (OVT) is a rare but potentially fatal postpartum complication.[1,2] The presentation of this condition is often clinically indistinguishable from other pelvic pathologies such as appendicitis, or pyelonephritis. Ovarian vein thrombosis may cause septic pulmonary embolism, thrombosis of the inferior vena cava and the renal vein, or both, and is potentially fatal.[3] We present this case report to describe the clinical findings and outcome of a patient suffering from a septic, postpartum ovarian vein thrombosis.

Case Report. A 38 year-old, gravida 7, para 4, abortion 2 with a normal antenatal period had a normal spontaneous term vaginal delivery of a live and healthy female baby weighing 3240 grams. Early puerperium was uneventful and she was discharged home on the following day. Twelve days later she was readmitted through the Emergency Department with a history of sudden onset of lower abdominal pain mainly in the right iliac fossa, which had started 4 days earlier. She had a low-grade fever, 38°C. The pain was described as being continuous, constant and had no relieving factors. She had no symptoms related to the gastro-intestinal system and no urinary symptoms or vaginal discharge. On clinical examination she was found to have hepato-splenomegaly. Edge of the liver was 8 cm below the costal margin with a sharp edge. Murphy's sign was negative. Psoas sign was positive. The uterus was just palpable above the symphysis pubis. Deep tenderness was felt in the right iliac fossa. There was no rigidity or guarding of the abdominal wall. On pelvic examination the uterus was enlarged with a palpable right sided tender mass. Pelvic ultrasound revealed an enlarged puerperal uterus with no evidence of retained products of conception. There was a left ovarian follicle of 4 x 4 cm. On the right side there was an adnexal mass of 5 x 5 cm whose echogenicity was continuous with the uterus. Most probably it was a subserous broad ligament fibroid, which had undergone torsion. Additionally, upper abdominal ultrasound confirmed the finding of hepato-splenomegaly and multiple gallstones. Other investigations were straight abdominal x-ray which was normal, total and differential white cell count and serum amylase which were all normal. The surgical staff were consulted and appendicitis was excluded. The patient was referred to the

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Gynecology Department. The initial impression after assessment in the Gynecology Department was that it could be a case of red degeneration of fibroid or endometritis, both of which could not be excluded so a conservative approach was pursued. The patient however, had severe abdominal pain and episodes of sweating and also backache. In the evening she was taken to the theatre for diagnostic laparoscopy with the possibility of laparotomy if necessary. The findings during the required laparotomy were as follows: normal uterus, 14 weeks in size. Both oviducts and ovaries were normal. A small benign-looking left ovarian follicle was seen. A firm tubular mass extending from the right broad ligament to the retroperitoneal area was observed and suspected to be a broad ligament fibroid. The surgeon decided that since she had delivered only 2 weeks earlier and had a potentially increased pelvic vascularity coupled with perceived technical difficulty in removing this mass, it was best to close the abdomen with no intervention. Postoperatively she was put on antibiotics and analgesics. On the 5th postoperative day she was apyrexial and did not complain of abdominal pain. The abdominal wound healed and she was discharged home with an appointment to be reviewed in the Gynecology outpatient clinic.

Ten days after her discharge from hospital she was brought again to the Emergency Department with severe abdominal pain, backache and temperature of 39°C. The casualty officer consulted the Internist, who after examination suggested magnetic resonance imaging (MRI) of the abdomen and pelvis. The MRI report was as follows: The appearances are highly consistent with right ovarian vein thrombosis extending into the interhepatic portion of the inferior vena cava and propagating into the right renal vein, but not totally occluding it. An ultrasound with Doppler and computerized tomography (CT) were performed and these showed that the thrombosis was seen in the intrahepatic portion of the inferior vena cava and confirmed the presence of a right ovarian vein thrombosis (**Figure 1**). In view of these findings

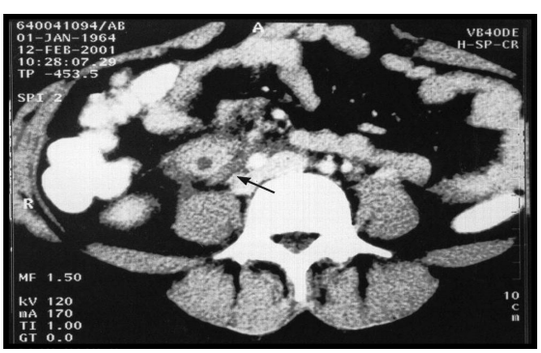

Figure 1 - Contrast enhanced CT of lower abdomen showing the enlarged and thrombosed right ovarian vein in front of the psoas muscle. CT- computerized tomography

the patient was admitted to the medical ward and immediately started on heparin 35000 units daily through an infusion pump. She was also started on Zinnat (cefuroxime) tablets 250 mg twice daily. As soon as the patient's consent was obtained she was started on Actylase, T-PA (Recombinant tissue type plasminogen activator) 100 mg/500 mL of sodium chloride (NaCl) per 24 hours at the rate of 24 drops per minute and the heparin was discontinued. The thrombolytic treatment was continued for 24 hours following which she was restarted on heparin. The dosage was controlled according to the prothrombin time and partial thromboplastin time (PT/PTT) and International normalized ratio (INR). On the 5th day from her 2nd admission she was commenced on Warfarin tablets 5 mg once daily. On the 13th day ultrasound and Doppler examination revealed no evidence of ovarian vein or inferior vena cava thrombosis and the heparin and Zinnat were discontinued. She was discharged home on the 15th day with Warfarin tablets 6 mg once daily and an appointment to attend the anticoagulant clinic.

Discussion. Post-partum ovarian vein thrombosis (POVT) is uncommon, but the true incidence is not known.[4] Ninety percent of cases present as right iliac fossa pain within 10 days of delivery. Ovarian vein thrombosis can also be associated with malignancy, pelvic inflammatory disease (PID) and can also be the result of gynecological surgery.[5] The majority of cases occur in the right vein.[6] This is in part due to the commonly occurring dextro-torsion of the enlarging uterus which leads to compression of the right ovarian vein as it crosses the pelvic rim.[7] The retrograde flow in the left ovarian vein and antigrade flow in the right, during the post-partum period, coupled with the long right ovarian vein and the finding that the left vein has many valves would indicate that these valves can act as a nidus for thrombosis.[7] Other risk factors for POVT are the hypercoagulable state of pregnancy and puerperium. Prothrombotic conditions such as factor V Leiden, protein S and protein C deficiency all act as predisposing factors.

The differential diagnoses of ovarian thrombosis are septic pelvic thrombophlebitis, peritonitis, adnexal torsion, pyelonephritis and tubo-ovarian abscess. Surgical conditions such as appendicitis and medical conditions such as Crohn's disease have to be excluded. It is reported that OVT is a possible cause of pelvic pain in patients with Crohn's disease.[8] The clinical picture consists of pyrexia and lower quadrant pain associated with nausea. A mass may be palpable in the iliac fossa. The patient may present with atypical signs and symptoms, which constitute a challenge to the obstetrician, the

physician and the radiologist. Besides non-pregnancy related causes of abdominal pain, several pregnancy-related complications should be included in the list of differential diagnoses.[1,2]

The diagnosis is usually achieved by sonography and when this condition is suspected, a CT or MRI scan, when available, should be requested to confirm the diagnosis thus avoiding surgery. The CT scan seems to be the best method of evaluating the extent of OVT due to cheaper cost and its ready availability.[9-11] Laparoscopy plays a small or no role in POVT diagnosis. Hence, it is important to consider POVT when one is faced with a post-partum patient with lower quadrant pain and fever. Modern imaging technology has made it easier to diagnose the once elusive OVT. This approach minimizes or avoids invasive procedures such as laparoscopy or laparotomy. The condition is treated initially with intravenous (IV) heparin and then warfarin which should be continued for 3 months. One has to consider the side effects of this therapy such as osteoporosis and heparin induced thrombocytopenia type II. Close monitoring of these patients while on anticoagulants is necessary. Other treatment modalities are well described in the literature and range from hysterectomy and thrombectomy to the use of vena cava filters in combination with anticoagulants.

In our opinion the delay in making the diagnosis was due to the rarity of the condition, and the misleading initial ultrasound and clinical findings. Once the diagnosis was established and the extent of the thrombosis appreciated, it became concerning particularly when one considers the 3-33% risk of pulmonary embolism reported in patients with puerperal ovarian vein thrombosis.[12,13] Treatment modalities for such extensive degrees of thrombosis are well described in the literature and range from hysterectomy and thrombectomy to the use of vena cava filters in combination with anticoagulation and antibiotics.[12,13] In this case we tried defervescence with a combination of infusion of tissue plasminogen and heparin. This treatment approach has been found particularly successful in cases of ileo-femoral, hepatic, renal and vena caval thrombosis.[13-15]

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