Case Report

Incidental finding of bilateral ovarian and renal veins thromboses post cesarean hysterectomy complicated by ureteric injury: First case presentation

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Abstract

This is a case report of a 36-year-old female patient who developed right flank pain on day 4 postcesarean hysterectomy due to placenta accreta and massive bleeding. Ultrasonography of the abdomen and pelvis showed moderate right hydronephrosis. A nephrostomy tube was urgently inserted followed by computed tomography urography which revealed a large pelvic urinoma secondary to right ureter injury and bilateral ovarian and renal veins thrombi. An abdominal drain was inserted and the hematology team was consulted. The patient was treated with enoxaparin with no subsequent complications. Ureteric injury was managed by reimplantation. We reported this case as the probable first presentation of bilateral ovarian and renal vein thromboses postcesarean hysterectomy.

Keywords: Cesarean hysterectomy, complications, ovarian vein thrombosis, renal vein thrombosis, ureteric injury

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INTRODUCTION

Cesarean hysterectomy is one of the difficult surgeries faced by obstetricians. The classic indications for emergency cesarean hysterectomy are life-threatening hemorrhage and infection. The overall incidence of ureteric injury varies between 0.5% and 10%, its reported with a rate of 0.44% during cesarean hysterectomy.[1] The strategy of ureteric injury management is dependent on many factors. As for thromboembolic events, they occurred in 0.52% of cesarean hysterectomy cases. Ovarian vein thrombosis (OVT) is considered a rare complication. OVT can be associated with pelvic inflammatory disease, gynecological malignancies, pelvic surgeries, and hypercoagulable states.[2] A majority of experts believe rare thrombosis should be treated like lower extremity deep-vein thrombosis (DVT).[3] The application of DVT guidelines is considered reasonable as outcomes are comparable.

CASE REPORT

A 36-year-old female patient G8P5+3, not known to have any chronic medical illnesses, developed right flank pain on day 4 post-cesarean hysterectomy which was done due to placenta accreta and massive bleeding. Histopathology results came negative for malignancy. The pain was colicky and associated with nausea and urinary frequency. There

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was no history of fever. There was neither history of vaginal leak nor decrease urine output. She underwent laparoscopic sleeve gastrectomy 2 years ago. There was neither personal nor familial history of hypercoagulopathy or cancer.

On examination, the patient looked in pain, not in distress. Her body mass index is 36 kg/m^2. She was vitally stable and has moderate right flank tenderness. The cesarean wound looked healthy. There was neither lower limbs edema nor tenderness. A genital examination is unremarkable.

According to the laboratory tests, a hemoglobin level of 10.5 mg/mL, white blood cells 5.4 × 10^6/ul, platelets 373 × 10^3/ul, and creatinine level 0.99 mg/dL, international normalized ratio of 1.01, PT of 11 s, and PTT of 23.8 s. Urinalysis was suggestive of infection although urine culture and sensitivity showed no growth of organisms. Ultrasonography of the abdomen and pelvis was done showed moderate right hydronephrosis [Figure 1].

The patient was admitted and urgent nephrostomy tube (NT) was inserted by an interventional radiologist. Nephrostogram showed abrupt contrast flow at the level of the pelvis with extravasation in the pelvic region [Figure 2].

Day 1 post right NT insertion, the patient developed continuous vaginal leak of clear fluids with a minimal output of NT. Creatinine level of vaginal discharge was done and showed more than ten times of serum creatinine which is consistent with urine fluid. Urgent computed tomography (CT) urography was carried out showed large pelvic fluid collection, attributed to large pelvic urinoma secondary to right ureter injury and also filling defects likely fresh thrombi involving bilateral gonadal and renal veins, the right one slightly extending to its confluence with the inferior vena cava (IVC) [Figure 3]. There was no evidence of fistula formation. Hence, we proceeded to insert an abdominal drain and adjustment of NT. The next day, there was no more vaginal leak with acceptable NT output. The abdominal drain kept for few days then removed. The hematology team was involved to rule out any medical reasons for thromboses. A full thrombophilia workup was done which turned to be normal. Antithrombin III 110%, D-DIMER 6.4 mg/L, factor VIII 136%, fibrinogen 4.4 g/L, protein C 126%, and protein S 60%. The patient was treated conservatively with enoxaparin as in-patient then discharged home on apixaban and NT.

Forty-five days later, the patient underwent retrograde pyelography [Figure 4] and ureteroscopy which revealed a completely blind end at the level of the true pelvis. Hence, we proceeded to do a lower midline incision for exploration and repair. There was evidence of scar in the pelvic ureter most likely representing thermal injury. We did open extravesical anti-refluxing ureteric reimplantation. The postoperative period went smoothly with no significant complications.

Double J-stent was removed 2 months after reimplantation. Follow-up CT urography was done to evaluate the status of veins thromboses and the anastomosis which showed complete interval resolution of IVC, bilateral renal, and gonadal venous thromboses [Figure 5a], and patent right urinary system [Figure 5b]. She did not experience any complications during the 6-month follow-up.

DISCUSSION

OVT is one of the rarest complications that occurred in the postpartum period. OVT has been reported in approximately 0.05%–0.18% of vaginal births and 2% of births by cesarean section.[4] The clinical presentation of this condition is a triad of abdominal mass, pain, and fever.

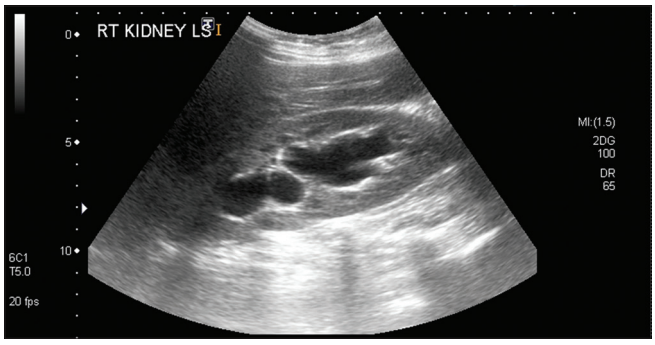

Figure 1: Ultrasonography of abdomen and pelvis showed moderate right hydronephrosis

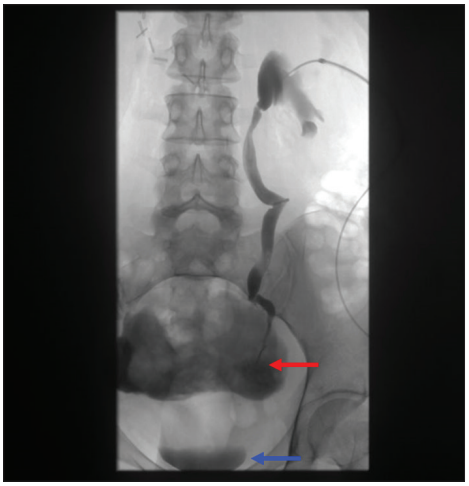

Figure 2: Right nephrostogram showed abrupt of contrast flow at the level of pelvis with extravasation in the pelvic region (red arrow) and minimal bladder filling (blue arrow)

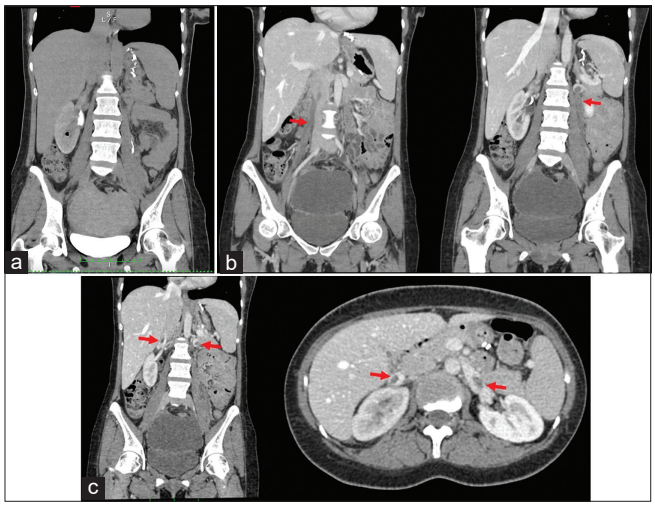

Figure 3: CT urography showed (a) large pelvic fluid collection, (b) bilateral gonadal veins thromboses, and (c) renal veins thromboses

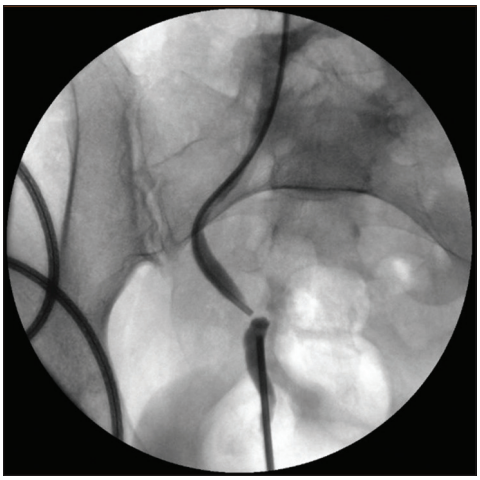

Figure 4: Antegrade and retrograde pyelography of right ureter showing discontinuity of ureter which represent the site of injury

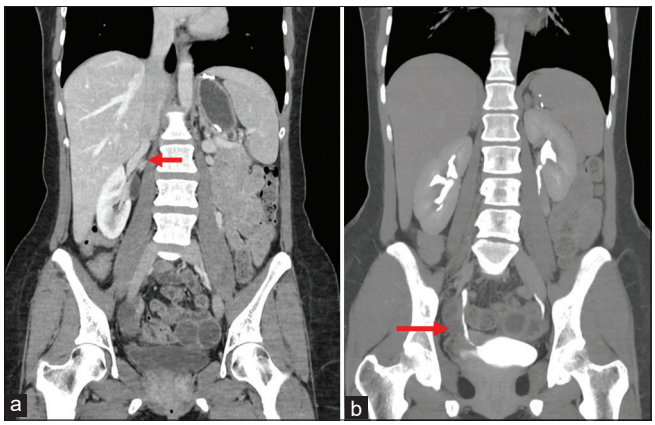

Figure 5: (a) Follow up CT urography showed complete resolution of bilateral renal & gonadal veins thromboses (arrow at the right renal vein) and (b) patent right urinary system (arrow at anastomosis site)

CT scan with intravenous contrast is considered as well as magnetic resonance angiography high sensitivity and specificity for diagnosing OVT. Management of cases of OVT warrants a multidisciplinary team including a vascular surgeon, obstetrician, and hematologist. Anticoagulation is the mainstay treatment option.

On the other hand, renal vein thrombosis (RVT) is a rare medical entity occurred occasionally in nephrotic patients and patients with malignancy. CT angiography is the test of choice for diagnosing RVT. Anticoagulation therapy is provided to prevent the risk of progression of thrombus or occurrence of an embolic event. Surgical thrombectomy can be rarely considered in the setting of acute bilateral RVT and acute renal failure, especially if percutaneous thrombectomy and/or thrombolysis cannot be performed.[5]

In the literature review, there are two case reports of simultaneous development of ovarian vein and renal vein thromboses. The first one was reported by Togan *et al*.[6] for a female patient present on the 3rd day of the postpartum period complaining of fever. The pregnancy and immediate postpartum period were uneventful. CT scan showed right OVT and right RVT. She was managed initially with enoxaparin for 7 days then completed by warfarin for 6 months.

The second case report was published by Barros *et al*.[7] The patient underwent total postpartum hysterectomy for severe postpartum vaginal hemorrhage after uneventful vaginal delivery. Twelve days later, she complained of severe lower back pain with no other symptoms. CT scan showed right OVT and RVT. The patient was treated as in the first case.

However, bilateral ovarian and bilateral renal veins thromboses have never been reported in postcesarean hysterectomy procedures up to our best knowledge. As mentioned earlier, the condition was discovered incidentally due to right-sided hydronephrosis otherwise the patient had neither specific symptoms nor laboratory results supportive for vein thrombosis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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