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Case Report

Is there a role for internal iliac artery ligation in post cesarean uterine artery pseudo-aneurysm: A case report



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ABSTRACT

Objective: To describe the diagnosis and management of uterine artery pseudoaneurysm after caesarian section.

Design: Case report.

Setting: Department of Obstetrics and Gynecology.

Patient: A 25-year-old woman developed uterine artery pseudoaneurysm after caesarian section.

Intervention: Uterine artery pseudoaneurysm after caesarian section was diagnosed on ultrasonography, computerized tomographic angiography and treated by bilateral internal iliac artery ligation.

Main outcome measure: Uterine conservation.

Result: Fertility preservation was achieved in the woman.

Conclusion(s): Diagnosis and management of uterine artery pseudoaneurysm after caesarian section are important to prevent life-threatening hemorrhage caused by pseudoaneurysmal rupture.

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1. Case report

A 25-year-old para1 female presented to our A&E department at 6 am in the morning with severe attack of secondary postpartum hemorrhage. She had uneventful elective cesarean section six weeks ago in a district hospital due to cephalo-pelvic disproportion.

On admission, she was very pale tachycardic with heart rate 124 B/m, BP 80/40 mmHg. Initial resuscitation measures were done according to our unit protocol with blood samples

were taken for blood tests and cross matching. PV examination showed a just bulky AVF uterus with severe vaginal bleeding with blood clots coming through the cervix. Trans-vaginal U/S showed bulky uterus with endometrial thickness of 2.5 cm and mild fluid collection in Douglas pouch. Her Hb was 6 g/dl, platelets count of 210,000/cmm, normal coagulation profile, U&E, liver function.

Examination under anesthesia showed intact vagina and cervix and profound bleeding which was uterine in origin with bulky well-contracted uterus. Exploratory laparotomy through pfannenstiel incision was done which revealed a perforation

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of the right lateral uterine wall measuring 2×2 cm which was covered by clotted blood and necrotic tissues with heamoperitoneum of about 500 cc. The edges of the defect were cleaned from blood and necrotic tissue which were taken for histopathologic examination. 0 vicryl was used to repair the defect and ensure heamostasis. Peritoneal lavage was done and intra-peritoneal drain was inserted. The operation lasted for about 45 min during which the patient received 2 L of fluid, 1.5 L packed RBCs and 3 units of fresh frozen plasma. The vaginal bleeding stopped and the patient general condition improved with BP 110/70 mmHg, pulse 90, urine output about 300, CVP 8 H₂O and the patient was then transferred to the ICU for monitoring, blood transfusion and follow up. 48 h later the intra-peritoneal drain was removed and patient transferred to the ward. The histopathology came back showing only blood and necrotic tissues with no atypia or malignancy.

The patient improved over the next two days with no bleeding and her Hb level reached 9.5 g/dl. Unfortunately, on the third day, the patient experienced severe unprovoked attack of vaginal bleeding with her Hb level dropped for 5.9 g/dl. Resuscitation measures were initiated and the ultrasound examination showed empty uterus with no intra-peritoneal collection but with hypo-echoic cystic structure 2 cm in diameter attached and related to the right uterine wall with turbulent flow.

The patient transferred to theater again and under anesthesia a 18f Foley's catheter was inserted intra-uterine and filled with 30 ml saline for trial of intra-uterine balloon tamponade till reaching final diagnoses which was successful and the bleeding stopped. The catheter left in place for 48 h during which correction of the general condition of the patient was done and blood and plasma transfusion were taken. After that 48 h the catheter was removed and follow up ultrasound was done which revealed that cystic lesion increased in diameter by 1 cm and definite turbulence in Doppler study with initial diagnosis of arterio-venous malformation (AVM) of the right uterine artery.

The patient had CT angiography of the pelvis which showed that a 2 cm pseudoaneurysm is projecting from the terminal branch of the right uterine artery with a narrow neck about 2 mm with mild surrounding hematoma (Fig. 1).

The patient was scheduled for embolization two weeks after. As the patient condition was stable, she opted to be discharged home with phone contact with emergency department and strict advice to come back to the hospital if she feels unwell or vaginal bleeding recurred. Two nights before the scheduled date for embolization, the emergency department had a phone call from the patient complaining of a sudden attack of severe vaginal bleeding and she was advised to come to the hospital immediately.

Twenty minutes later, the patient was in the A&E department with an estimated blood loss of about one and half liter. Her BP was 80/50, HR of 120 and HB of 7 g/dl and moderate intra-abdominal collection on ultrasound. After immediate resuscitation, patient was transferred to operating theatre after consenting for laparotomy and hysterectomy. During laparotomy, the abdomen was filled with blood; the pseudoaneurysm was ruptured resulting in a uterine perforation at its site of about 3 cm in diameter at the same site of previous perforation. Repair of the uterine defect was done

using 0 vicryl then both internal iliac arteries were double ligated using 0 vicryl. Heamostasis was ensured and intra-peritoneal drain was inserted for the following 48 h. The procedure took about 90 min during which the patient received 2 L of fluid, 3 units of red blood cells and two units of plasma. The patient admitted to the ICU for the next three days then she was discharged to the ward for another three days. The patient had smooth recovery with stable general condition and no vaginal bleeding. Trans-vaginal ultrasound on the fifth day revealed normal size uterus with no masses beside. Pelvis CT angiography was done on the seventh day and come back normal with no aneurysm. So, the patient discharged home with bi-weekly follow up at the out-patient gynecology clinic.

The patient general condition improved over the next two months with no recurrence of the vaginal bleeding and she was able to breast feed her baby. The patient had a copper T 380 inserted two months after the operation. She resumed regular menses six months after the procedure. One year after the operation, she had a follow up CT angiography which was completely normal.

2. Discussion

A pseudoaneurysm is a blood-filled cavity communicating with the arterial lumen owing to deficiency in one or more layers of the arterial wall.¹ Development of pseudoaneurysms is a complication of vascular injury resulting from inflammation, trauma, or iatrogenic causes such as surgical procedures, percutaneous biopsy, or drainage. Pseudoaneurysm of the uterine artery is a rare but serious complication of gynecologic surgery that may be unnoticed in the early postoperative period. Without precise ultrasonographic and radiologic diagnosis before the manifestation of symptoms associated with hemorrhage, these pseudoaneurysms are prone to unpredictable rupture, resulting in exsanguination with high morbidity and mortality rates.²

Pseudoaneurysm of the uterine artery is an uncommon cause of delayed postpartum hemorrhage following caesarean or vaginal delivery and is potentially life threatening. Typically, the lesions are discovered because the patients have symptoms related to delayed rupture of the pseudoaneurysm, causing hemorrhage.² A pseudoaneurysm may be asymptomatic, may thrombose, or may lead to distal painful embolization. The risk of rupture is proportional to the size and intramural pressure. Diagnosis is usually based on both Doppler sonography and arteriography.³

Occurrence of pseudoaneurysm in the uterine artery is a rare but serious complication of hysterectomy,² myomectomy,⁴ spontaneous vaginal delivery, cesarean section, and dilatation and curettage. Because the natural history of uterine arterial injury is not well documented and the clinical appearance of a pseudoaneurysm is variable, precise diagnosis of pseudoaneurysm in an asymptomatic patient is difficult. However, unless recognized before rupture,² uterine artery pseudoaneurysm can cause potentially life-threatening hemorrhage after blood may track through the myometrium and establish a connection with the uterine cavity.⁴ With the introduction of modern imaging modalities, the diagnosis of

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