Uterine artery pseudoaneurysm: A rare complication of cesarean section

A 26-year-old female underwent a cesarean section to deliver a term baby in a private hospital. Three weeks after delivery she had two episodes of bleedings. The patient was having a small amount of bleeding intermittently (2 pads per day). Due to secondary postpartum hemorrhage (PPH), she was admitted and underwent dilatation and curettage in the same hospital; however, there was no retained product of conception. She had bicytopenia for which she received 2 packed red blood cell (PRBC) transfusions and was discharged. Later, she presented again with vaginal bleeding after 2 weeks and was managed conservatively in a private hospital. Seven weeks after delivery she presented to us with continued vaginal bleeding. Vitals were stable. There was moderate pallor. No icterus, cyanosis, clubbing, or edema were observed. The abdomen was soft and non-tender. Two cesarean scars were seen in the lower abdomen. On per speculum examination mild streaking of blood was noted. Ultrasonography (USG) showed an anechoic cystic pulsatile lesion of size 18 × 15 mm in the anterior myometrium in the lower uterine segment left lateral to the cesarean scar. On color Doppler, color filling of the entire lesion suggesting vascular nature was observed [Figure 1]. There was turbulent flow within the lesion and to and fro flow at the neck region. Computed tomography (CT) angiography revealed arterial phase enhancing lesion of size 20 × 18 mm in the lower uterine segment in communication with a branch of the right uterine artery confirming the diagnosis of uterine artery pseudoaneurysm [Figure 2]. The same night she had excessive vaginal bleeding; hemoglobin dropped to 6 gm/dL. The patient was taken to the operation theatre. Intraoperatively, 600–700 mL of clotted blood was observed in the vagina. Bluish discoloration was noted near the uterine scar. On opening, a bluish-colored sac of size 2 × 2 cm with active bleeding was seen. It was excised, parent vessel ligated, and hemostasis secured. The procedure was uneventful. Ovaries were normal. Postoperative USG showed no evidence of pseudoaneurysm [Figure 3].

Uterine artery pseudoaneurysm (UAP) is a rare but potentially life-threatening condition. It can develop after traumatic delivery, cesarean section, pregnancy termination, manual removal of placenta, forceps delivery or dilatation, and curettage.1,2 UAP is a rare cause of secondary PPH, the incidence being 0.2%.1 Diagnosis of UAP is crucial particularly in a postpartum female as dilatation and curettage suspecting a retained product of conception may be detrimental in such a case. This diagnosis should be considered in case of late postpartum bleeding without obvious cause as early diagnosis is necessary to prevent excessive bleeding. Herein, we present a case of post-cesarean right uterine artery pseudoaneurysm that was initially diagnosed by USG and Doppler and subsequently confirmed by CT angiography.
Pseudoaneurysm is a contained arterial rupture that is covered by an adventitial layer or the surrounding soft tissue. Injury of the uterine artery or its branch during a traumatic procedure remains the main cause of the formation of UAP. The mean interval between the incident and the symptoms are usually 2 weeks.\(^1\) Diagnostic delay may occur if the patient remains asymptomatic.

UAP can be diagnosed by Doppler USG, CT angiography, and digital subtraction angiography.\(^\[4\]\) USG with color Doppler is useful in the early diagnosis of UAP. USG is an easily available modality that can give an early diagnosis of pseudoaneurysm that may be the cause of PPH and differentiate other common causes of PPH such as a retained product of conception. Dilatation and curettage suspecting a retained product of conception in a post-partum hemorrhage may be detrimental if there is pseudoaneurysm and the patient may present with torrential bleed. Grayscale USG shows the anechoic pulsatile cystic structure in the uterus. Color Doppler demonstrates vascular nature of the lesion, identifies turbulent flow within the sac, and to and fro flow in the neck region indicating a pseudoaneurysm.\(^\[4\]\) CT angiography demonstrates arterial enhancement of the sac in communication with the parent uterine artery or its branch. On MRI, this lesion can be seen as a flow void in T1 and T2WI depending on the flow and there may be pulsation artifact in the phase encoding direction. Digital subtraction angiography (DSA) is considered as the gold standard for diagnosis.

All visceral pseudoaneurysms require treatment as it lacks an intact vessel wall that leads to continued enlargement and subsequent rupture in nearly all cases. Transcatheter arterial therapeutic embolization under DSA has emerged as a highly effective technique in the management of UAP as it is minimally invasive and a fertility-preserving treatment as most of these patients are young. Hysterectomy was the most frequent method of treatment before the advent of arterial embolization. Presently hysterectomy is reserved for patients where arterial embolization or fertility-preserving surgery fails. Other less radical procedures as removal of the pseudoaneurysm, laparoscopic coagulation of the uterine artery, and unilateral ligation of the uterine artery have also been reported.\(^\[5\])\(^\[3\]\) The present case was managed with resection of the pseudoaneurysm sac and ligation of the branch of the right uterine artery.

UAP is a rare but potentially lethal complication of cesarean section. USG with color Doppler is an easily available modality with higher sensitivity to diagnose pseudoaneurysm and also to differentiate it from the retained product of conception. Early diagnosis and treatment are crucial before its rupture to reduce morbidity and mortality and to preserve fertility.

Declaration of patient consent
The authors certify that appropriate patient consent was obtained.

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Conflicts of interest
There are no conflicts of interest.

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