CASE REPORT

Complication of Femoral Arterial Thrombosis Following Failure of Balloon Tamponade and Massive Blood Loss During Hysterectomy in a Case of Abnormal Placentation

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Introduction

Placenta accreta has a reported mortality rate up to 7 % and its management still remains a challenge [1]. The role of prophylactic internal iliac arteries occlusion balloon catheter (IIOBC) in reducing hemorrhage and avoiding hysterectomy is still questionable. We report a case of a 26-year-old woman with placenta accreta who had acute lower limb thrombosis following prophylactic IIOBC placement necessitating emergency embolectomy.

Fig. 1 **a** MRI of patient showing placenta accrete. **b** Femoral artery thrombus after thromboembolectomy

Case Report

A 26-year-old woman (G3P1L0A1) presented to Department of Obstetrics and Gynaecology, All India Institute of Medical Sciences, New Delhi at 27 weeks gestation with placenta accreta with history of antepartum hemorrhage at 25 weeks. She had a cesarean section (CS) 2 years ago and an abortion 1 year ago for which suction evacuation was done. Doppler ultrasound and MRI of pelvis revealed placenta accreta (Fig. 1a).

After admission, antenatal corticosteroids were given. At 35 weeks, she had a bout of vaginal bleeding. After prophylactic placement of *IIOBC* (5Fr catheter, Boston Scientific, Natick, MA, USA) under fluoroscopic guidance via transfemoral route in Interventional Radiology Department, she was shifted to operation theatre for CS. Intraoperatively, there were multiple distended vessels over lower uterine segment, urinary bladder was densely adherent to uterus, and placenta was morbidly adherent reaching up to uterine serosa (placenta percreta). Immediately after delivery of baby, *IIOBC* was inflated. But bleeding was not controlled even after balloon inflation, so we proceeded with cesarean hysterectomy without trying for embolization to save time at that particular situation. Hemostasis was ensured and bleeding was checked after deflating balloon tamponade. There was blood loss of around 3.5 l. Postoperatively before shifting the patient, bilateral femoral catheters were removed while sheath was left in situ; continuous saline flushing of sheath was done and it was removed 2 h later.

Twelve hours after cesarean hysterectomy, left foot was found to be colder than right foot. On examination, pulse was not felt in left dorsalis pedis artery. Doppler ultrasound of bilateral lower limb was suggestive of thrombus in the

left femoral artery of 5 cm size. Immediately embolectomy was done under local anesthesia through ipsilateral femoral arteriotomy; clot was retrieved and proximal and distal flow was achieved (Fig. 1b). Temperature and oxygen saturation of left lower limb were monitored every 4 h, and anticoagulation with heparin 5000 U was subcutaneously given every 8 h for 5 days which was then overlapped with oral anticoagulant warfarin. Patient was discharged in stable condition after 15 days on tablet warfarin 5 mg daily for 3 months.

Discussion

Placenta accreta is one of the most dreaded obstetric conditions, which is defined as abnormal adherence of placenta to the uterine wall. The predisposing factors are prior CS, curettage, endometrial ablation, myomectomy, hysteroscopic surgery, and uterine artery embolization. The authors opine that its increased incidence may be due to practice of single-layer closure of uterus during CS and the availability of advanced diagnostic modalities such as MRI and color Doppler.

Some studies have reported the benefit of *IIOBC* in reducing blood loss while others have not. Dubois et al. first described its successful use in two cases [2]. A case series reported experience of *IIOBC* in 14 patients of placenta accreta [3]. Nine of the 11 women with balloon inflated had cesarean hysterectomy, and it was concluded that *IIOBC*, although useful in some, is not universally effective and patients are still at risk of hysterectomy as observed in our case. Balloon catheters may be associated with groin hematoma, displacement of catheter, hypotension during insertion, thrombosis, and acute limb ischemia

[3, 4]. Left popliteal arterial thrombus was first reported after common iliac balloon catheterization at cesarean hysterectomy requiring thromboembolectomy. Another case of iliac artery thrombosis and acute limb ischemia has been reported after 7 h of cesarean hysterectomy [4]. This is the first reported case of femoral artery embolus following IIOBC placement during management of placenta accreta. The occurrence of thrombosis may be due to intimal injury by catheter, leading to activation of intrinsic coagulation pathway.

The available evidence suggests that use of prophylactic IIOBC may be associated with complications and not necessarily avoids hysterectomy. The risk of thrombosis can be minimized with early sheath and catheter removal with intense monitoring postoperatively for its timely detection and necessary intervention [4].

Conclusion

Placenta accreta is one of the obstetric conditions associated with significant morbidity and mortality. IIOBC is increasingly being used in the management of placenta accreta to reduce the associated obstetric hemorrhage. Although IIOBC may be efficacious, its cautionary use is advised as it may be associated with serious complications.

Intensive monitoring and early removal of sheath and catheter are advised to minimize the complications. We must be prepared for all types of problems to be encountered during surgery and a full team of expert anesthesiologist, obstetrician, urologist, and neonatologist should always be present with ample stock of blood and blood products.

Conflict of Interest The authors declare that they have no conflict of interest.

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