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Case Report

## Conservative management in case of placenta accreta followed by hysterectomy

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### ABSTRACT

With a rise in number of caesarean sections we are also seeing an increase in the adherent placenta that form a part of placenta accreta spectrum. Early identification and appropriate management and monitoring is very important in these patients as they can have hemorrhage that can cause significant maternal and fetal morbidity and mortality. This is a case of conservative management of a woman with placenta accreta spectrum, use of uterine artery balloon ligation to decrease the intra-operative blood loss, leaving placenta in situ, methotrexate therapy and follow up of the patient that ultimately led to hysterectomy. It highlights the importance of managing these women in adequately equipped center with the required expertise and intensive care support and multidisciplinary management to improve patient care leading to good maternal and fetal outcome.

**Keywords:** Caesarean management, Placenta accreta, Hysterectomy

### INTRODUCTION

Placenta accreta is defined as abnormal trophoblast invasion of part or all of the placenta into the myometrium of the uterine wall. The range of pathological adherence of placenta can be placenta increta, percreta and accreta and can be associated with maternal morbidity and mortality due to haemorrhage.<sup>1</sup>

The main risk factors for placenta accreta spectrum (PAS) include history of accreta in a previous pregnancy, previous caesarean delivery or other uterine surgery, including repeated endometrial curettage. Antenatal diagnosis is crucial as it helps plan delivery and hence decrease maternal morbidity and mortality.<sup>2</sup> A multidisciplinary team (MDT) approach is crucial in management of these patients, including obstetrics,

urology, radiology, anesthesiology, and blood banking.<sup>3</sup> As the prevalence of placenta accreta spectrum is on the rise due to increased number of caesarean sections, this case report gives a good insight into management options for women with placenta accreta spectrum and emphasizes the importance of monitoring and quick decision making as this can be really unpredictable sometimes. Also, it highlights the importance of multidisciplinary management and good teamwork between different specialties that led to the mother and the baby being safe in this case. This was a case of a 27 years old pregnant patient with placenta accreta spectrum, her delivery, preserving of the uterus with placenta in situ by interventional radiology support, follow up of the retained placenta and the final outcome where she presented with bleeding and ended up with a hysterectomy that prevented maternal and fetal mortality.

## CASE REPORT

The patient was a 27 years old lady pregnant for the third time when she presented for the first time with 7 months pregnancy and private ultrasound scan suggestive of placenta previa and accreta. She was otherwise fit and well with no other medical problems or allergies. She had a previous missed miscarriage at 7 weeks which was treated by suction evacuation and previous emergency caesarean section 5 years back for delay in first stage of labor with big baby. Her present pregnancy was registered with a private hospital and she didn't have any previous scans. She was taking hematinic and had taken 2 doses of tetanus toxoid injection.

Ultrasound can be complemented by MRI scan to assess the depth of invasion and lateral extension of myometrial invasion. Ultrasound scan was done that suggested a single live intrauterine fetus in transverse lie with adequate liquor. Placenta was anterior grade 4 complete placenta previa, thinning of uterus at previous scar region, adherent placenta. Estimated gestational age- 30.3 weeks with estimated fetal weight of 1532 g. MRI (Magnetic resonance imaging) was suggestive of anterior placenta previa grade 4 with placenta increta. The ultrasonographic features of PAS include the presence of irregular shaped placental lacunae within the placenta, thinning of myometrium overlying the placenta, loss of retroplacental 'non-lucent line', protrusion of the placenta into the bladder, increased vascularity of the uterine serosa-bladder interface and turbulent blood flow through the lacunae on Doppler ultrasonography.<sup>4</sup>

### Management

Delivery for such woman should take place in a specialist center with immediate access to blood products, adult intensive care unit and NICU by a multidisciplinary team with adequate experience in managing such complex cases.<sup>2</sup> The patient's delivery was planned in a tertiary care center with the involvement of senior anesthetist, interventional radiologist, neonatologist, senior obstetrician and general surgeons. She was given steroids for the lung maturation of the baby and delivery planned at 34 weeks by elective caesarean section following internal iliac balloon ligation under radiological guidance. Few of the techniques to avoid haemorrhage include performing classical caesarean section to avoid the placental site and leaving the adherent placenta in situ. Doing the hysterectomy 2-6 weeks after delivery has achieved decrease in maternal morbidity and mortality.<sup>4</sup>

Prophylactic balloon-assisted occlusion (PBAO) involves placing occlusion balloons (OBs) in the internal iliac arteries before the planned caesarean and inflating them immediately after the delivery to reduce post-partum bleeding. It has been proven to reduce the rate of blood loss in patients with PAS and decrease the rate of hysterectomy compared to those without it.<sup>3</sup> The patient was taken in the Cath Lab for the interventional radiology

procedure where under local anesthetic 4K cobra C1 catheter was introduced into the internal iliac artery through femoral artery. 0.014 Nitiax guide wire was passed over catheter into the internal iliac artery. 5X20 balloons were placed and inflated with test volume of water-soluble contrast necessary for completely occluding the arteries and again deflated. The patient was transferred to the Obstetric operation theatre.



**Figure 1: Specimen on the uterus post hysterectomy cut open to show adhered placenta.**

A classical caesarean section was done to deliver a female baby weighing 2.19 kg in good condition. The uterus was thinned out at left lateral part and placental vessels seen till serosa. However, the serosa was intact and no invasion of bladder or other surrounding adnexal structures was seen. The Internal Iliac balloons were inflated and placenta left in situ with closure of the uterine and abdominal incision. Total blood loss was 1500 ml. The patient was given prophylactic intravenous (IV) antibiotics for 3 days and followed by oral antibiotics for 7 days to decrease the chance of infections.

Patient was recovering well and was having mild bleeding post-operatively. On day 3 her hemoglobin was 8.9g/dl, normal platelets, renal and kidney function tests and placental volume of 550 cm<sup>3</sup>. She was started on methotrexate regime- alternate days with folinic acid and 4 doses were given while monitoring the patient in the post-natal ward. This conservative method was first described by Arul Kumaran et al. in 1986 in which systemic Methotrexate was given postnatally, and the placental mass was expelled after 11 days. Following this there has been further cases where conservative management with methotrexate was found successful in women with PAS.<sup>4</sup> Its effect on placental tissue has made it quite useful in the treatment of placenta percreta and abdominal pregnancies.<sup>5</sup> 50 mg intramuscular (IM) injection of methotrexate was given on day 3, 5, 7, and 9 and folinic acid 0.1mg/kg IM was given on day 4,6,8 and 10. The renal and liver functions and full blood count (FBC) was monitored throughout.

### **Outcome and follow up**

The patient was discharged on day 25 with close follow up for bleeding abdominal size and placental mass measurement. The Placental volume was also monitored that went from 550 cm<sup>3</sup> on day 3 to 150 cm<sup>3</sup> on day 40. On day 47 patient presented back to the hospital with heavy bleeding per vagina and pain in the abdomen. On examination she was tachycardic at 105/min with blood pressure of 96/50 and per abdomen examination revealed uterus 18-20 weeks size and on per speculum os open and fresh bleeding present with passage of clots. Patient Hemoglobin was 6 g/dl with rest of the blood results stable. Immediate decision for theatre was taken in the presence of senior obstetrician. Blood bank, theatre team, senior anaesthetist and general surgeons were involved. Total hysterectomy was done and ovaries were conserved. The patient had 4 units blood transfusion and lost further 2000ml intraoperatively. She was stable post operatively and discharged home on day 7.

### **DISCUSSION**

The National Patient Safety Agency in collaboration with the Royal college of obstetrics and gynecology (RCOG) and the Royal College of Midwives developed a care bundle for the management of PAS. This included; Consultant obstetrician planning and directly supervising delivery, Consultant anaesthetist planning and directly supervising anaesthesia at delivery, Blood and blood products available, Multidisciplinary involvement in preoperative planning, Discussion and consent, including possible interventions (such as hysterectomy, leaving the placenta in situ, cell salvage and interventional radiology) and Local availability of a level 2 critical care bed.<sup>2</sup>

The American college of obstetricians and gynecologists (ACOG) guidelines highlight that for patient safety, it is important that the delivery be performed by an experienced obstetric team that includes an obstetric surgeon, with other surgical specialists, such as urologists, general surgeons, and gynaecological surgeons and oncologists, kept alerted in case of need.<sup>6</sup> PBAO is a rising procedure as an effective adjunctive technique in reducing post-partum bleeding and potentially preventing hysterectomy in women with placenta accreta spectrum. Complications of the procedure are rare and can involve arterial or venous thrombosis, hematoma and pseudoaneurysm at the time of arterial approach, and complications associated with incorrect balloon inflation, such as artery rupture and dissection. The risk of radiation exposure and absorption by the fetus has been proven to be low when dose reduction techniques are implemented.<sup>3</sup> In our case there was no complication associated with the balloon insertion and it led to decrease in blood loss during the initial surgery.<sup>3</sup>

There has been evidence from case studies that report that suggests effective results with use of methotrexate after

leaving adherent placenta in situ as a conservative management method while monitoring placental volume and beta HCG (Human chorionic gonadotropin) hormone level. However, it was seen that some of these cases were followed by uterine necrosis, hemorrhage, infection, subsequent surgery and hysterectomy.<sup>7</sup> Similar outcome was seen in our case where the woman ultimately ended up with a hysterectomy due to hemorrhage. The procedure intending at conservative management with removal of adherent placenta with uterine tissue and reconstruction should be considered in individual cases after discussion of risks and benefits.<sup>7</sup>

### **CONCLUSION**

Conservative management of placenta accreta can be a safe alternative to extirpative management. Many authors have vouched for it as a better option in cases of adherent placenta as leaving placenta in situ would also reduce the risk of hemorrhage that can occur even at the time of hysterectomy because of rich vascular plexus in lower uterine segment. It is important that such high-risk women are managed in a tertiary care center with adequate support of intensive care unit, blood bank facility and senior surgical support. This case highlights the importance of strict monitoring in cases of adherent placenta with conservative management as early diagnosis of the complication led to quick management that ultimately prevented maternal mortality and resulted in fetal well-being. Also, it highlights importance of planning, effective patient counselling and multidisciplinary expertise in managing the case which led to safe mother and safe baby.

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