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Case Report

Placenta accreta with uterine rupture: a rare case report

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ABSTRACT

Placenta accreta spectrum is a rare complication of pregnancy, associated with significant postpartum hemorrhage often requiring emergency postpartum hysterectomy. These cases are usually seen in patients having anterior low-lying placenta with history of previous LSCS. Here we present the case report of a patient who was 24year old, unbooked case, Gravida 2, Para 1 Live 1, who presented to our tertiary care center at 37 weeks of gestation with history of previous lower segment caesarean section with short inter-conception period of one year, with MRI showing complete placenta previa with PAS (Placenta Accreta Spectrum) with bladder involvement in the current pregnancy. Intraoperatively, silent uterine rupture and Placenta accreta noted, caesarean hysterectomy performed successfully. Post operative period was uneventful.

Keywords: caesarean hysterectomy, Uterine rupture, Placenta accreta spectrum, Placenta previa

INTRODUCTION

The worldwide incidence of placenta accreta spectrum (PAS) is rapidly increasing, following the rising trend of caesarean delivery. PAS is a heterogeneous condition associated with a high maternal morbidity and mortality rate. According to the depth of trophoblast invasion PAS can be differentiated into: Placenta accreta, where the chorionic villi attach directly to the surface of the myometrium in the absence of the decidual layer; Placenta increta, where the chorionic villi penetrate deeply into the myometrium reaching the external layer; Percreta, where the invasive chorionic villi reach and penetrate through the uterine serosa.[1] Women who have had one or more repeat caesarean births with a placenta previa are at a higher risk of developing PAS. For the first, second, third, fourth, and fifth repeat caesarean births in such women, the probability of placenta accreta is 3%, 11%, 40%, 61%, and 67%, respectively. Another important risk factor for PAS is placenta previa, which is seen in 3% of women who have never had uterine surgery. Asherman syndrome, multiparty, history of prior uterine operations or curettage, uterine malformation, adenomyosis, dystrophia myotonia, or submucosal uterine fibroid and advanced maternal age are additional risk factors. Cryopreserved embryo transfer (CET) is a new risk factor for PAS.[2,3] Many theories have been proposed over time to explain the causes and mechanisms of PAS. The most widely recognized theory is uterus that has scarring. A defect in the endometrial-myometrial junction results from a failure in the normal decidualization of the scar region. This permits the trophoblast and villi to deeply infiltrate the myometrium and it even reaches the underlying blood vessel and surrounding tissues. Uterine vascular resistance rises after caesarean birth, reducing re-epithelialization of the scar region. This compromised blood circulation around the scar leads to irreversible localized myometrial degeneration.[4] PAS has also been reported in mothers who never had uterine surgery. Despite the progress achieved in numerous investigations on obstetric imaging, PAS instances are still unpredictable at the moment of delivery. Diagnosis often suspected on prenatal imaging studies and operative findings. Radiology description of PAS on ultrasound: loss of normal hypoechoic retroplacental zone, increased sub placental vascularity, abnormal interface between uterus and bladder, retroplacental myometrial thickness <1 mm, multiple vascular lacunae within the placenta. MRI may be helpful, particularly <30 weeks gestation Prenatal imaging is more sensitive at detecting severe cases of accreta and tends to not identify mild

forms.[5] Final diagnosis is made upon examination of the hysterectomy specimen.

CASE REPORT

A 24-year-old second gravida with diagnosis of 37weeks of gestation with one previous LSCS with short inter-pregnancy interval of one year. MRI suggests Placenta Accreta spectrum with complete placenta previa with bladder involvement. She had regular antenatal care at a private clinic. No complaints of pain abdomen or bleed PV, was referred to our tertiary care for further management. Patient was vitally stable. Uterus was term size, relaxed, no scar tenderness, FHR- 140-155 bpm. NST was reactive. Growth scan and doppler report showed single live intrauterine gestation of 36+5 weeks, cephalic presentation, placenta was anterior in LUS, completely covering the internal os and adherent to anterior wall and bladder. Fetal doppler was normal.

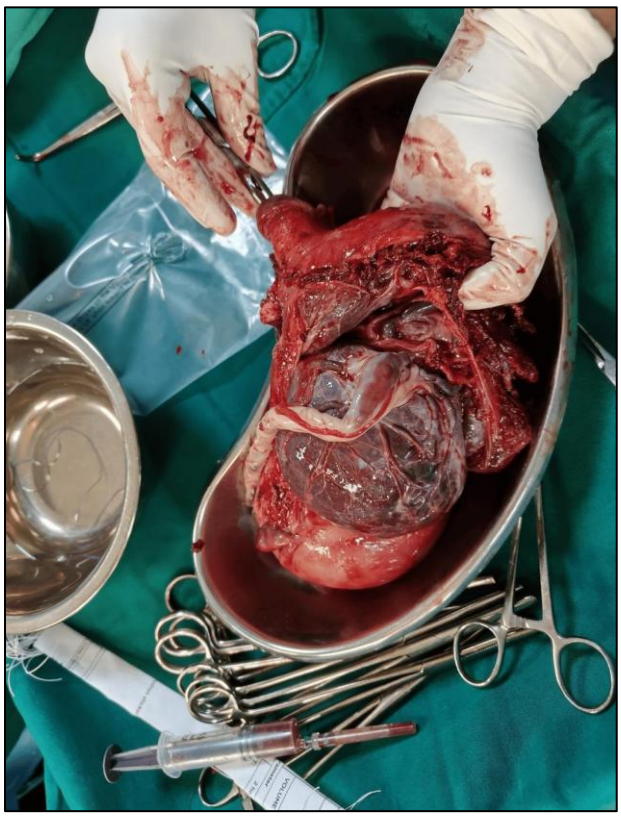

Figure 1: Picture post cesarean hysterectomy with anteriorly adherent placenta with accreta.

Magnetic resonance imaging

Placenta is seen in lower uterine segment along the anterior wall completely covering the os. There is no distinct myometrial wall anteriorly with focal uterine bulging and tenting of the bladder wall. Loss of fat planes with urinary bladder and a focal bulge of bladder suggests bladder involvement with impression of placenta percreta. Patient was planned for emergency LSCS with a consent for caesarean hysterectomy and risk of bladder injury was explained. As there was bladder involvement on MRI Urologist opinion was taken. Intraoperatively silent uterine rupture was noted with bulging of placenta and bag of membranes. A live baby was delivered after rupturing the membranes. Placenta was adherent to anterior wall of uterus and profuse bleeding was noted from placental attachment. Sharp dissection of bladder could be done with ease and separated away from lower uterine segment. Timely decision of caesarean hysterectomy was performed as planned. Two packed cells were transfused; recovery of the patient was uneventful and was discharged on the 6th postoperative day. Histopathological findings confirmed presence of trophoblastic tissue in the myometrium and serosa with absent placental basal plate.

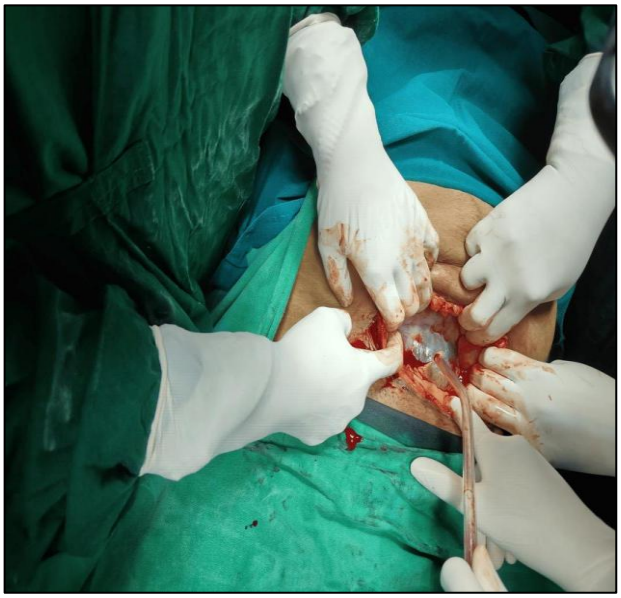

Figure 2: The intra operative finding of asymptomatic and silent uterine rupture with placenta and bag of membranes bulging from ruptured previous scar site.

DISCUSSION

The relative incidence of placenta accreta, increta and percreta has been up rising for the past two decades, due to increasing caesarean section rates. It is important to note that placenta previa appeared to be an independent risk factor for PAS.[1] Our case has dual risk of placenta previa and previous LSCS increasing the odds for developing PAS. In this case invasion typically developed at previous scar site, whereas in a study done by Seema et al, though there was no previous history of surgery, the site of invasion was noted at the fundus.[6] The diagnosis of PAS was first made by USG at 36 weeks in our study but as such the diagnostic value of USG in prenatal diagnosis of asymptomatic PAS is uncertain. Placental lacunae and disruption of the interface between the bladder wall-uterine serosa (bladder line) are the most reliable diagnostic sonographic findings. MRI may be performed in case of inconclusive ultrasound studies to clarify the diagnosis. MRI may be more useful than ultrasound in two clinical scenarios evaluation of a posterior PAS, because

the bladder cannot be used to help clarify the posterior placental-myometrial interface, and to assess depth of myometrial, parametrial and bladder involvement. Diagnosis is confirmed by histopathology.[5] Histopathology findings of hysterectomy specimen showed presence of trophoblastic tissue in the myometrium and serosa with absent placental basal plate. In a stable patient, window of 34 to 35+6/7 weeks of gestation is suggested as the preferred gestational age for scheduled caesarean delivery or hysterectomy according to ACOG. Waiting beyond 36+6weeks of gestation is not advised because approximately one half of women with placenta accreta spectrum beyond 36 weeks require emergent delivery for hemorrhage.[7] First line of treatment for PAS is surgical intervention by caesarean hysterectomy, required in majority of the cases.

It should be done in a facility with qualified and experienced surgeons, multidisciplinary approach, sufficient resources and blood products. As the patient was already 37 weeks, when she visited our tertiary care, plan was to take her for elective caesarean with caesarean hysterectomy at earliest after reserving adequate blood and blood products. Intraoperative findings on opening abdomen were silent rupture of uterus with bulging of placenta and fetal membranes from anterior wall. This could attribute to the advanced gestational age causing weakening of scar leading to silent rupture. A live baby was extracted after rupturing membranes. Placenta did not separate spontaneously and profuse bleeding was noted from placental attachment. Sharp dissection of bladder done and separated away from uterus and caesarean hysterectomy was performed. Post hysterectomy there was no bladder injury, which was confirmed by instillation of diluted methylene blue dye through the trans-urethral catheter.

Conservative management with chemotherapeutic agent like Methotrexate, transcatheter embolization of uterine artery is used in rare condition when adjacent organ like bowel or bladder are involved. Conservative management with methotrexate chemotherapy was unsuccessful and lead to subsequent hysterectomy because of PPH in Butt et al.[8] Whereas Legro et al reported a successful outcome with methotrexate for a placenta percreta patient who had a normal pregnancy 2 year later.[9] Conservative treatment was also planned by manual removal of as much placental tissue as to rescue uterus in Fox et al study.[10] He noted that mortality was as high as 25% with this method of management. Hysterectomy is the only lifesaving intervention in patients with severe bleeding. In small uterine rupture with non-severe life-threatening condition, surgical uterine repair might be the option for those patients who have preserve fertility.

Uterine arterial embolization (UAE) is newly advanced minimally invasive procedure done by skilled radiologists. It blocks the uterine artery and blood supply to the placenta, reducing maternal morbidity and preserving fertility in select cases of invasive placentation. UAE is widely accepted as a therapeutic approach for managing bleeding, reducing surgical morbidity, and expediting placental resorption in cases of retained placenta.

CONCLUSION

It is potential life-threatening condition for both mother and baby. Short inter-conception period added to the risk of developing PAS and uterine rupture in this case. Diagnosis of PAS was done at 36 weeks in this case at a private clinic, highlighting the need for early detailed placental evaluation at 20 weeks scan. Early diagnosis and timely management could have prevented uterine rupture. But Hysterectomy remains a main stay procedure despite of early diagnosis of PAS. Accurate early antenatal diagnosis and preoperative preparation of PAS has been demonstrated to improve both maternal and fetal outcomes, allowing appropriate time for risk assessment and planned delivery in a tertiary referral center with a multidisciplinary approach.

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