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Case Series

A series of morbidly adherent placenta: An experience at tertiary care center

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Abstract

Placenta accreta spectrum (PAS) refers to a group of obstetric complications characterized by abnormal adherence of the placenta to the uterine wall. Worldwide, the prevalence of PAS is increasing, due to the trend of rising caesarean deliveries. We report here a series of 6 cases of placenta accreta that were initially presented to the hospital with bleeding per vagina, abnormal placental position, or invasion on an ultrasound scan Despite having definitive grounds for an emergency lower segment caesarean section (LSCS), the majority of the patients had peripartum hysterectomy. The findings on the ultrasound were subsequently confirmed during surgery and supported by a histological analysis. Peripartum hysterectomy remains the lifesaving procedure over conservative methods for post-partum hemorrhage (PPH) secondary to abnormal placental invasion.

Keywords: Placenta accreta spectrum, Defective decidualization, Peripartum hysterectomy, Massive obstetric haemorrhage.

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1. Introduction

Placenta accreta is an abnormal trophoblast of part or all of the placenta into the myometrium of the uterine wall.[1] In a 10-year retrospective study at a tertiary care center, 28 cases of PAS were identified among 81,650 deliveries, yielding an incidence of 0.035%. Notably, the incidence increased from 0.0125% in 2010 to 0.1% in 2019, highlighting a rising trend.[2] The placenta accreta spectrum (PAS), earlier known as morbidly adherent placenta, is the range of pathologic adherence of the placenta, including placenta increta, percreta and accreta. Diagnosing and treating PAS presents distinct challenges due to its heterogeneous nature and high rate of maternal morbidity and mortality.[3]

The incidence of PAS is rising worldwide.[4] This is most likely due to the increasing rates of lower segment caesarean section (LSCS), which is a significant risk factor for PAS in subsequent pregnancies. Over the last 40 years, LSCS rates have risen globally from less than 10% to over 30%, and at the same time, a 10-fold increase in the incidence of PAS has been reported.[5]

Various theories have been conducted to explain how and why PAS occurs. The main theory states that aberrant deep trophoblast infiltration occurs because of a failure in normal decidualization at the location of a uterine scar caused by an iatrogenic defect of the endometrium–myometrial interface. Conditions like, uterine curettage, manual removal of placenta, endometritis,[6] advancing maternal age over 35 years, Asherman's syndrome and smoking are more likely to result in abnormally adherent placentation (accreta).[7]

So, here we present a case series of the PAS, where the patient presented with features of the morbidly adherent placenta.

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2. Case Series

2.1. Case 1

A 26 years old G3P2L2 with 35 weeks of gestation with previous two LSCS with Dichorionic Diamniotic twin with grade IV placenta previa presented with bleeding per vagina and hypovolaemic shock. Patient was resuscitated and shifted for emergency LSCS with adequate blood and blood products (2PRBC:2FFPs:2RPD). Intra-operatively, placenta was adherent to the lower segment and could not be separated completely, there was continuous bleeding from incompletely separated placenta. The conservative medical and surgical methods failed to control the hemorrhage and manage the complications associated with the placenta accreta spectrum (PAS), thereby necessitating a more aggressive approach. Given the continued risk of severe blood loss and maternal instability, the decision for a hysterectomy was taken as a life-saving procedure to ensure complete removal of the placenta and achieve effective hemostasis. This intervention was critical to prevent further blood loss and to stabilize the patient's condition. Postoperatively, she was transferred to the obstetric intensive care unit (ICU) where she received ventilatory and inotropic support for three days. She was in obstetric ICU for 10 days. During hospital stay, she had developed parotitis on day two, subacute intestinal obstruction and ascites secondary to hypoalbuminemia which was managed conservatively and was discharged on 18th postoperative day and advised for fortnightly follow up.

2.2. Case 2

A 32-year-old G4P1L1E1A1 with 36 weeks period of gestation with previous LSCS with type III placenta previa was admitted for elective LSCS in view of previous LSCS with placenta previa. Pre-operative magnetic resonance imaging (MRI) pelvis showed features suggestive of placenta increta (**Figure 1**, **Figure 2**). Intra-operatively, bladder adhesion on to lower uterine segment seen with high vascularity. A live male baby was delivered by incision on upper uterine segment. Post extraction full thickness bladder injury and placenta percreta was noted, peripartum hysterectomy and bladder repair was made with supra pubic cystostomy. Patient was shifted to obstetric ICU with inotropic support for four days with four units of whole blood transfused. Supra pubic catheter (SPC) was removed on postoperative day 10 and per-urethral catheter (PUC) on 21 post-operative day with uneventful post-operative period.

2.3. Case 3

A 40 year old female G3P1L1A1 with term gestation with grade III placenta previa with previous one LSCS presented to labour room with complaints of pain abdomen and absent foetal movements one day prior to admission. Emergency scan was done and viability of fetus was confirmed. With adequate blood and blood products (PRBC:FFPs:RPD 4:4:4 ratio) patient was taken for elective LSCS anticipating all the probable complications. Intraoperatively bladder was seen adherent to lower segment which was gently separated, placenta could not be separated completely and there was torrential bleeding from incompletely separated placenta and its bed and subtotal hysterectomy was performed. Patient was shifted to Obstetric ICU and was on inotropic support for four days with adequate blood transfusion. Patient was discharged on tenth postoperative day.

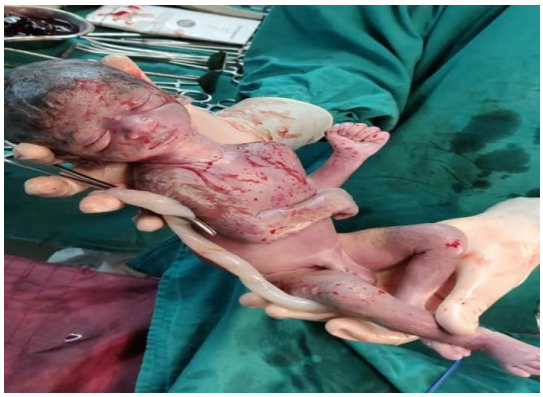

Figure 1: Fetal demise

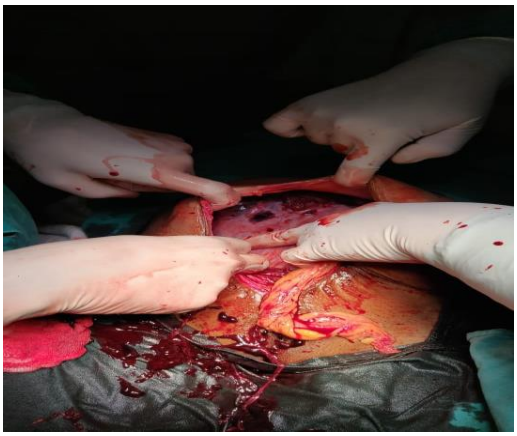

Figure 2: Uterine rupture

2.4. Case 4

A 34 years old G3P1L1A1 with term gestation with previous one LSCS with bleeding per vagina was admitted. Emergency ultrasound showed central placenta previa with placental lakes. She was posted for emergency LSCS with adequate blood arranged. Intraoperatively anterior low-lying placenta was seen and baby was extracted by bisecting the placenta. Placenta was found morbidly adherent and could not be separated completely. There was massive PPH deteriorating the vitals of the patient. Resuscitative measures started which included inotropes, blood transfusion and IV fluids. Simultaneously haemostatic measures were taken which included bilateral uterine artery ligation and lower segment compressive sutures. Decision to save the uterus was made leaving behind a chunk of morbidly adherent placenta. Post-operatively, she was shifted to obstetric ICU. Ultrasonography pelvis done after 48 hours showed retained placental tissue of 45x38 mm. Patient received two cycles of

Inj. Methotrexate 50 mg IM on Day one, three, five and Inj. Leucovorin on Day two, four, six after doing baseline complete blood count, liver function test and beta-Human chorionic gonadotropin (HCG) levels. Serial USG showed decrease in the size of the placental tissue and decrease in beta-HCG levels. Patient had no postoperative complications and was discharged on day 15.

2.5. Case 5

A 32 years G6P4L3D1A1 with term gestation with previous two LSCS with grade IV placenta previa with severe oligohydramnios was admitted for elective LSCS with adequate blood arranged. Intra-operatively placenta was adherent to bladder with neovascularization, placenta was removed in bits. Patient had atonic postpartum haemorrage and placenta bed bleeding which could not be controlled with medical management and conservative surgery. So, the decision for peripartum hysterectomy was taken. Bladder was injured at the dome and was repaired. SPC and PUC was placed. Patient was shifted to ICU and was on inotropic and ventilator support for four days. Patient was transfused with nine pints whole blood, four pints Random donor platelets and two pints Single donor platelets. Patient had no post-operative complications and discharged on POD 10.

2.6. Case 6

A 28-year-old G5P3L3A1 with 28 weeks of gestational age with previous one LSCS came to labour room with sudden onset of pain abdomen and bleeding per vagina, one hour prior to admission with decreased foetal movements with features suggestive of hypovolemic shock. Emergency scan revealed hemoperitoneum with intrauterine foetal demise. Per abdominal examination revealed uterus of 26-28 weeks size, tense and tender, guarding was present with absent foetal heart sounds. Per speculum examination revealed active bleeding with cervical os closed. Patient was posted for emergency laparotomy, in view of intrauterine fetal death (IUD) (**Figure 3**) with previous LSCS, hemoperitoneum with hypovolemic shock. Intra-operatively, 1000ml of blood with 600gms of clots was noted in abdomen, perforation of the placenta was seen at the fundal region, with protrusion and active bleeding. Previous caesarean scar was intact. On table decision for peripartum hysterectomy was taken after obtaining consent from attenders. Hysterotomy followed by peripartum hysterectomy was done. The specimen was sent for histopathology reporting (HPR) which revealed features suggestive of placenta accreta.

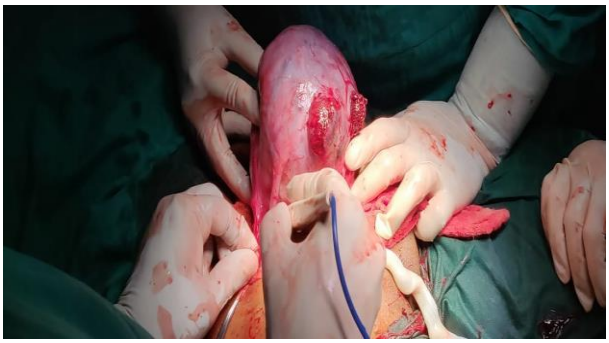

Figure 3: Placenta percreta

3. Discussion

Morbidly adherent placenta is not a rare association in women with a previous caesarean section. An increasing number of caesarean deliveries exponentially increase risk of placenta accrete.[8-12] Over the last decades, adherent placenta has become increasing common indication for peripartum hysterectomy, rising 5.4% to 46.5% and its primarily because of rise in caesarean delivery rates. In the literature, only two cases of primigravida with placenta accreta have been reported.[13]

The risk of placenta accreta in women with placenta previa is 3%, 11%, 40%, 61%, and 67% with increasing numbers of previous LSCS, respectively.[13] Women who had one previous caesarean delivery the rate of PAS has risen from 0.3%. PAS occurs in among 3% of women diagnosed with placenta previa and with no prior caesarean delivery about 3% developed PAS.[14]

Earl et al., reported that its the absence of decidua that is of great importance in pathogenesis, and it is unlikely that overactive trophoblastic invasion plays a major role.[14] Garmi et al demonstrated that in vitro an induced sheep decidual incision, imitating the in vivo process that is caesarean section increased the invasive potential of the trophoblastic cells.[15]

Recent studies on the role of in vitro fertilization (IVF) as a risk factor for PAS have shown that hormonal milieu at the time of implantation and placentation resulting from IVF may enhance trophoblastic invasion casing PAS.[16] Lower serum estradiol levels and a thinner decidualized endometrium may result in abnormal trophoblastic growth, leading to PAS.[17]

Ultrasound findings in later pregnancy are loss of interface between bladder wall and uterus, loss of retro placental hypoechoic clear zone, on color Doppler imaging increased vascularity of the interface between the bladder wall and uterine serosa and presence of placental lacunae (vascular spaces).[18]

Diagnosis by ultrasound in first trimester is made by localizing a low-lying gestational sac at the uterine scar and

its association with thinning of myometrium in the area of scar where sac is attached.[19]

Patients with PAS usually require peripartum hysterectomy or with longer hospital stays.[20] One of the cornerstones of the management of PAS is to avoid attempting to remove the placenta, either in a conservative or radical approach. Also, it is essential to time the delivery, as early elective LSCS 34-38 weeks may reduce the risk of bleeding.[21] A multidisciplinary approach for each case diagnosed with placental abnormalities involves a team of skilled obstetricians, anesthesiologists, neonatologists, and urologists when necessary, along with access to a blood bank equipped with whole blood and other blood products.[22]

In certain situations, conservative treatment should only be explored if the patient is willing to take the risks involved with conservative care, has a strong desire to maintain her fertility, and is hemodynamically stable with a normal coagulation profile. Methotrexate efficacy in treatment of post-partum management in cases of placenta accreta is not been proven, even though it has been used in a few cases.[22]

The best course of action is likely a caesarean hysterectomy; conservative management should only be employed in extremely rare circumstances and in locations with access to such facilities.[22]

4. Conclusion

The incidence of placenta accreta is rising in recent times, primarily due to the increased rate of caesarean deliveries, especially those performed upon maternal request. It is crucial to consider not only the morbidity associated with the initial caesarean section but also the potential risks in subsequent pregnancies.

Thus, the women planning large families should consider the risks of repeat caesarean delivery when contemplating elective caesarean delivery. The counselling of women with placenta previa and prior caesarean deliveries regarding their risks of abnormal placentation with subsequent morbidities associated with same should be considered.

By fostering awareness and advancing research, we pave the way for improved outcomes, ensuring a safe journey for both mother and child facing the complexities of placenta accreta spectrum.

5. Source of Funding

None.

6. Conflict of Interest

None.

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