

## Case report

# A rare case of morbidly adherent placenta in a young Primigravida with RH negative pregnancy managed with peripartum subtotal hysterectomy

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## ARTICLE INFO

## Keywords:

PPH  
Retained placenta  
Placenta Accreta  
Hysterectomy  
Primigravida

## ABSTRACT

**Introduction and importance:** Postpartum hemorrhage (PPH) can be defined as excessive bleeding (>500 ml) from the genital tract after the delivery of baby upto 6 weeks. PPH accounts for major cause of maternal mortality rate. Prevention and early intervention can prevent this complication of delivery. However condition like placenta accreta leads to retention of placenta and makes PPH inevitable.

**Case summary:** We present the case of massive postpartum hemorrhage secondary to Placenta accreta in young primigravida with RH negative pregnancy. Clinical findings and investigations were not significant during her admission. She delivered the baby via vaginal route but placenta was not expelled till 30 min. Due to failed manual removal of placenta patient was shifted to OT. Manual vacuum aspiration was done in OT setting and chunks of placenta along with blood clots were obtained. Uterine balloon tamponade was inserted. Due to persistent PV bleeding subtotal hysterectomy was carried out in line for placenta accreta.

**Discussion:** Placenta accreta being one of the life threatening obstetric condition, it should be diagnosed as early as possible and need prompt management so as to prevent maternal mortality. Due to increasing number of cesarean delivery the cases of placenta accreta has been rising but rarely in some cases can it present in young primigravida with Rh negative pregnancy.

**Conclusion:** In the cases of morbidly adherent placenta it is necessary for obstetrician to early identify such conditions and timely intervene to save the mother's life. Moreover Rh negative could be a hidden risk factor.

## 1. Introduction

Among the morbidly adherent group of placenta, placenta accreta is abnormally invasive placenta which can result in life threatening hemorrhage [1]. The basis of formation of placenta accreta can be well defined by partial or total absence of the decidua basalis and imperfect development of the fibrinoid or Nitabuch layer [2]. With the estimated prevalence of 1 in 2500 pregnancies placenta accreta is one of the cause behind post partum hemorrhage and increasing maternal mortality in lower middle income countries [3]. Moreover due to increasing rates of cesarean delivery the incidence of placenta accreta is also in upgoing trend [4]. Post partum hemorrhage is preventable by actively managing the third stage of labor and with timely intervention of any hemorrhage morbidity and mortality can be reduced. But in condition like placenta accreta retention of placenta is inevitable leading to PPH. Right decision at right time by surgeon can save mothers life. Due to associated high risk of multiple complications placenta accrete should be diagnosed as

early as possible in first trimester of pregnancy. Ultrasonography is the primary modality of diagnosis in antepartum period, color Doppler ultrasound and B-hcg levels can also help to differentiate it with other obstetrics condition [5–7].

Here we present the case of massive postpartum hemorrhage secondary to Placenta accreta in 22 year old primigravida managed with early subtotal hysterectomy. This case report has been reported in line with the SCARE Criteria [8].

## 2. Case presentation

A 22 year old Primigravida spontaneous conception, booked case with RH negative pregnancy presented to obstetrics outpatient department with chief complain of cessation of menstruation for 9 months and lower abdominal pain for 1 day. Her Gestation age at presentation was 38 weeks 3 day with no history of PV leaking, PV bleeding. Her 1st, 2nd and 3rd trimester were uneventful. On the initial physical examination,

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<https://doi.org/10.1016/j.ijscr.2023.109121>

Received 4 November 2023; Received in revised form 21 November 2023; Accepted 2 December 2023

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the vital signs were within normal limits. Obstetric examination showed a fundal height term size longitudinal lie, cephalic presentation with head 4/5th palpable and mild contraction. Fetal heart sound was 142 bpm and regular. Per vaginal examination findings were cervical Os:2 cm dilated, Cervix soft, central and 40% effaced. Head Station was at -2. Membrane and Show were present. Patient was admitted to Antenatal care ward with diagnosis of Primigravida at 38 weeks and 3 days of gestation in Latent phase of labour (LPOL) with Rh negative blood group. 3rd trimester USG showed Singleton live intrauterine pregnancy of 34 weeks 3 days of gestation. Cephalic presentation. Placenta attached left lateral. AFI (Amniotic fluid Index) = 11-12 cm, EFW (Estimated Fetal Weight): 2521 g.

She delivered term female by vaginal route and then Controlled cord traction (CCT) was done but placenta was not expelled even within 30 min of the delivery of the baby. On CCT, cord separated but placenta was not expelled. Manual removal of placenta was tried in labor room but failed hence diagnosis of retained placenta was made. Patient was shifted to operation theatre and manual removal of placenta with manual vacuum aspiration was done under spinal anesthesia for retained placenta. Chunks of placental tissue evacuated. Bleeding was present, uterine balloon tamponade was inserted with 260 ml distilled water and vaginal packing with 3 gauze pieces after repairing of episiotomy wound. Carboprost two doses was given in operation theatre. Then patient was shifted to intensive care unit (ICU) for observation and vitals monitoring but per vaginal bleeding was still persistent then patient was shifted to operation theatre again in the same day. Manual vacuum aspiration was done again. Placental tissue with clots was evacuated. Bleeding was persistent and hence diagnosis of placenta accreta was made and peripartum subtotal hysterectomy was done on same day under General anesthesia for placenta accreta with massive primary postpartum hemorrhage. Total blood loss was 2000 ml. On cut section of uterus, placenta was adherent to fundus of uterus measuring 7 × 7 cm. [Fig. 1]. Post operatively, patient was managed with Intravenous fluids, Injection Noradrenaline, antibiotic, analgesics (Injection Pethidine, Injection Phenargan, Injection Fentanyl). Furthermore 2 pints of whole blood and 1 pint of PCV was transfused. IV iron sucrose 3 doses was also given. Histopathology confirmed the diagnosis of placenta accreta [Figs. 2–3]. Patient was discharged on 8th Postoperative day. On subsequent monthly follow ups patient was in good health.

### 3. Discussion

PPH can be defined as excessive bleeding (>500 ml) from the genital tract after the delivery of baby upto 6 weeks. Quantitatively it can be defined as blood loss of >500 ml in vaginal delivery and >1000 ml in cesarean delivery. Where as clinically blood loss causing hemodynamic instability (tachycardia, hypotension, features of shock) is also considered as PPH. There are many cause of PPH among which atony of uterus, trauma to genital parts, retained tissue and coagulopathies are most common. Retained tissue and invasive placenta compromises 10 % of total cause of PPH [9]. Retained tissue (i.e., placenta, placental fragments, or blood clots) prevents the uterus from contracting enough to achieve optimal tone. Separation of the placenta from the uterine interface is hallmarked by three cardinal signs, including a gush of blood at the vagina, lengthening of the umbilical cord, and a globular shaped uterine fundus on palpation [10]. When there is failure to deliver placenta after 30 min of delivery of baby then the condition is defined as retained placenta. Causes of retained placenta includes uterine atony, trapped placenta and morbidly adherent placenta (Placenta increta, placenta percreta, placenta accreta). Superficial invasions are defined as placenta accreta. The placental villi are attached to, but do not invade the myometrium. In placenta increta, the villi extend into the myometrium. In placenta percreta, invasions extend beyond the uterine serosa. All the three degrees of abnormal placental adherence are often described collectively as 'placenta accreta' [11]. The main cause of placenta accreta is uterine scar secondary to cesarean delivery, uterine

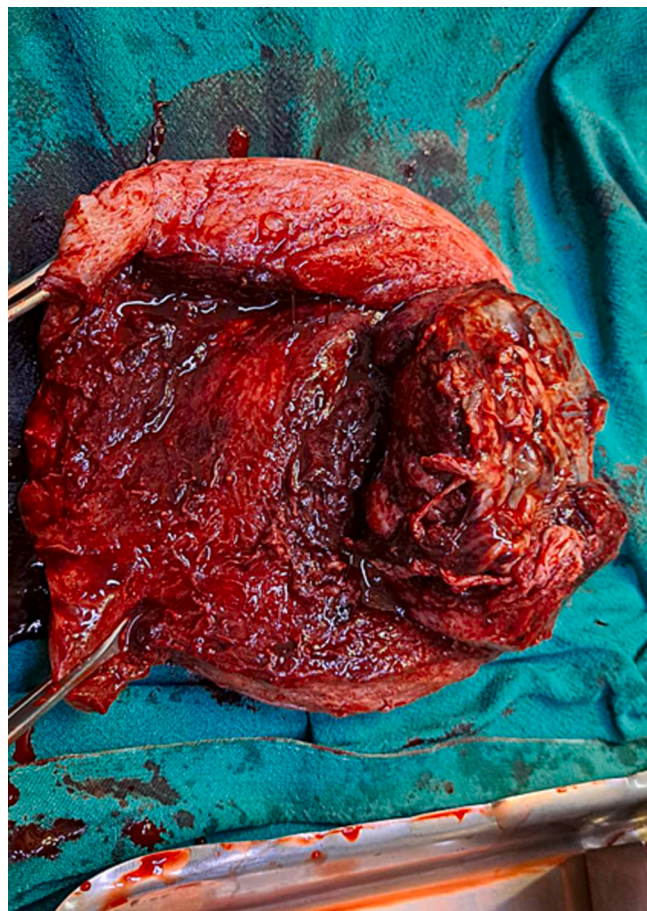


Fig. 1. Cut section of uterus showing placenta attached to uterine fundus.

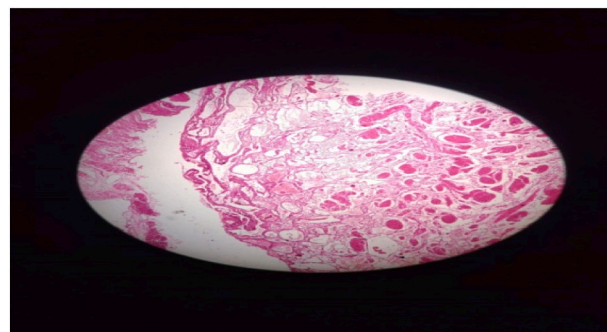


Fig. 2. Endomyo-placental junction showing adherent villi without layer of Decidua.

surgery and vigorous uterine curettage. In the absence of endometrial reepithelialization of the scar area the trophoblast and villous tissue can invade deeply within the myometrium, including its circulation, and reach the surrounding pelvic organs [12]. However the exact pathogenesis of placenta accreta is unknown. A proposed hypothesis includes a mal.

development of decidua, excessive trophoblastic invasion, or a combination of both. Defective decidualization, abnormal maternal vascular remodeling, excessive trophoblastic invasion, or combinations thereof are considered to be the consequences of previous instrumentation [13]. Due to associated high morbidity and mortality prenatal diagnosis of placenta accreta can change the consequences. Obstetric ultrasound scan can diagnose the placenta accreta in antenatal visit.



**Fig. 3.** Intramural mass with interlacing smooth muscles with areas of hyalinization.

Several US features have been documented to be associated with a higher risk of placenta accreta, including the presence of placental lacunae (irregular vascular spaces resulting in a “Swiss cheese” appearance), retroplacental myometrial thickness (<1 mm), loss of the normal hypochoic retroplacental zone, and anomalies of the bladder-myometrium interface [14]. The largest prospective study of gray scale ultrasound was done by Comstock et al. for the diagnosis of abnormal placentation [14]. Over 163,000 patients were scanned over a 12 year period and 2002 had dual risk factors of placenta previa and a prior cesarean delivery. 33 of these patients had ultrasound findings suspicious for a placenta accreta. The sensitivity of ultrasound was 100 %, with the presence of placental lacunae having the highest sensitivity (93 %). Eight 6 % of patients had abnormal findings between 15 and 20 weeks, which suggests that the diagnosis can be made at the routine anatomic scan [14]. Apart from ultrasound MRI can also be used to diagnose placenta accreta in high risk patient. Three MRI findings have been found abnormal placentation: 1. Abnormal Uterine bulging, 2. Heterogeneity of signal intensity within the body of the placenta, 3. Presence of dark intraplacental bands on T2 weighted images [15]. Study done by Riteau et al. concludes ultrasound imaging is the mainstay of screening for placenta accreta where as MRI appears to be complementary to ultrasonography, especially when there are few ultrasound signs [16]. A case of placenta percreta in a primigravida has been reported by Ansar et al., which presented with ruptured uterus at 17 weeks of gestation. It was managed surgically, but uterus could be conserved [17]. Kinoshita et al. from Japan, reported a case of spontaneous rupture of the uterus due to placenta percreta in a primigravida [18]. A case of placenta increta in a primigravida was reported by Arnadottir et al. that resulted in the delivery of a healthy infant with successful conservative management with methotrexate [19]. Another case of placenta percreta in a primigravida with no risk factors was reported by Rajkumar et al., a cesarean hysterectomy was done in view of massive hemorrhage [20]. Along with primigravida Rh negative pregnancy could also be associated with morbidly adherent placenta but the reporting in medical literature is scarce. Other possible causes that could result in placenta accrete are other types of uterine surgery, such as myomectomy, uterine curettage, hysteroscopic surgery, prior endometrial ablation, uterine embolization, and pelvic irradiation [21]. After the diagnosis of placenta accreta in antenatal period, planning to deliver the baby safely via c-section followed by hysterectomy is done. Counselling prior to surgery regarding blood transfusion and need of ICU in case of life threatening bleeding is to be done. Apart of placenta accreta other cases of retained placenta is treated by manual removal of placenta whereas retention can prevented by actively managing third stage of labor along with control cord traction. Early diagnosis of morbidly adherent placenta and retained placenta can prevent Post Partum Hemorrhage which is a life threatening condition.

#### 4. Conclusion

Post partum hemorrhage is one of the leading cause of maternal mortality. Retained tissue is one of the cause of PPH. Retention occurs due to various reason among which morbidly adherent placenta (Placenta accreta spectrum) is one of them. Placenta accreta occurs in patient with risk factors like prior uterine surgery, uterine curettage and endometrium ablation. Antenatal USG and MRI helps in diagnosis of the condition in patient with high risk. C-section followed by hysterectomy and management of PPH can save life of a mother with this morbid condition. Moreover special care should also be carried out so as to not miss radiologically such morbidly adherent placenta cases which can help to properly plan the further patient management.

#### Ethical approval

It is exempted at my institution KIST Medical college and teaching hospital. We don't need to take approval from ethical committee for case report.

#### Funding

This case report hasn't been funded by any person or any institutions.

#### CRediT authorship contribution statement

Conceptualization: Meenu Maharjan  
 Manuscript review: Meenu maharjan, Pratima shrestha  
 Writing original draft: Meenu maharjan, Pratima Shrestha, Sagun Ghimire  
 Patient management: Meenu maharjan, Pratima Shrestha  
 All authors were involved in reviewing, editing, supervision and in preparing the final manuscript.

#### Guarantor

Sagun Ghimire.

#### Informed consent

Written informed consent was obtained from the patient's parents for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

#### Declaration of competing interest

There is no any conflicts of interest with this article.

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