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Original Research Article

Stuck situations in morbidly adherent placenta: how to tackle?

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ABSTRACT

Background: Morbidly adherent placenta is associated with high maternal morbidity and mortality. Its increased prevalence seems to be proportional to the increasing number of caesarean sections. In this study the presentation and management of 32 cases was reviewed with morbidly adherent placenta and maternal and perinatal outcomes from 2014 to 2016, at the hospital.

Methods: Study type was retrospective. We reviewed clinical information from patients' case sheets regarding the risk factors, preparations prior to cesarean section, intraoperative and postoperative complications. Results were interpreted and conclusions were withdrawn.

Results: Among the 32 cases, 28 were diagnosed prenatally while 4 were diagnosed intraoperatively. Out of 28 patients, 5 patients were diagnosed early between 14 and 18 weeks of gestational age and other 23 were diagnosed during third trimester by ultrasonography. Caesarean hysterectomy was required in 28 cases. 4 were managed conservatively, out of which hysterectomy proved to be necessary in the postpartum period because of severe secondary postpartum hemorrhage in 2 cases. Average no of hospital stay is 10 days ranging from 8-18 days.

Conclusions: Prenatal diagnosis of morbidly adherent placenta is essential to plan for the better maternal and perinatal outcome. The decision to perform a cesarean hysterectomy or conservation of uterus (using balloon tamponade or putting haemostatic sutures) is based on the extent of infiltration, the patient's hemodynamic status, and her desire for future pregnancy. The risk of infection and severe hemorrhage remains high if conservative management is chosen and requires prolonged close monitoring postoperatively. Ideally all the cases should be electively planned and operated by senior surgeon and experienced assistants with senior anesthetist, urosurgeon and physician, with full backup of ICU and blood bank.

Keywords: Antepartum hemorrhage, Cesarean hysterectomy, Color doppler, Maternal mortality, Morbidly adherent placenta, Postpartum hemorrhage

INTRODUCTION

Morbidly adherent placenta occurs due to the imperfect development of netabuch's layer. Depending on the extent of adherence and invasion of the placenta, the condition is classified as placenta accreta (reaching the myometrium), placenta increta (into the myometrium) or placenta percreta (reaching up to serosa and beyond to

surrounding structures). It is often associated with placenta previa. When placenta previa was present, the risk of morbidly adherent placenta increased from 24% for a patient with one previous cesarean delivery to 67% for a patient with three or more cesarean deliveries.¹ Specifically, placenta percreta is associated with high maternal morbidity and as much as 7% maternal mortality.

The incidence of morbidly adherent placenta has increased manifolds and now estimated to occur with frequency of 1 per 2510 deliveries.² Antenatal diagnosis of morbidly adherent placenta can be made by a high degree of clinical suspicion coupled with color doppler ultrasound and sometimes with the help of other relevant investigations like cystoscopy and MRI. Prenatal diagnosis followed by optimal management at an appropriate tertiary care center is essential to limit the devastating maternal consequences and to decide the most appropriate surgical strategy: conservative management with the placenta left in situ after cesarean delivery, or hysterectomy, possibly associated with extensive pelvic surgery. The conservative approach exposes the woman to prolonged risks of hemorrhage and sepsis, whereas hysterectomy may prove extremely difficult to achieve when parametrial invasion is present.

METHODS

Tertiary care maternity unit performs 4000 deliveries annually and is the referral center for high-risk pregnancies from a network of maternity hospitals. This retrospective study included 32 cases of morbidly adherent placenta treated from 2013 to 2015.

Inclusion criteria

- Clinical information was obtained from the written case sheets.
- Details of obstetric history, maternal background, ultrasonographical findings, the course of delivery, subsequent complications and management were noted.
- Information regarding the risk factors of morbidly adherent placenta (previous history of curettage, number of previous cesarean section), gestational age of diagnosis, gestation age at which women was admitted and planning of cesarean section whether it was electively planned or shifted in emergency conditions.
- Information was also obtained regarding preparations prior to cesarean section, intraoperative and postoperative complications.

Exclusion criteria

- Placenta accreta without actual invasion into the myometrium confirmed by pathology was not included in the study.
- Results were statistically analysed and conclusions were withdrawn.

RESULTS

The demographic and clinical characteristics of the 32 women are reported in (Table 1). All of them presented risk factors for abnormal placental implantation like previous cesarean delivery, curettage or other uterine surgery (Table 2). Women with more than one prior

cesarean delivery had higher risk of morbidly adherent placenta. Prenatal diagnosis was made in 87% cases. Placenta previa with prior cesarean section was found to be the most important risk factor, however placenta previa without prior cesarean was also found in 4 cases. The infiltration of the surrounding tissues and/or vesicouterine fold was confirmed intraoperatively in 6 cases (Table 3).

Table 1: Demographic characteristics.

Characteristic	Value
Age (Mean)	26 (24-29)
Gravidity	3 (2-4)
Parity	2 (1-4)
Religion	
Hindu	10/32
Muslim	22/32

Table 2: Risk factors.

Risk factors	No. of patients (n = 32)	Percentage (100%)
Previous curettage	17	53.1
Previous manual placental delivery (documented)	4	12.5
Placenta previa with previous one LSCS	10	31.2
Placenta previa with more than one previous LSCS	18	56.2
Placenta previa without LSCS	4	12.5
Prenatal diagnosis	28	87.5
Parametrial, bladder and bowel invasion	6	18.7
Placental implantation		
Placenta previa (anterior)	26	81.2
Placenta previa type 4 (central)	2	6.2
placenta previa (posterior)	4	12.5

Table 3: Management of morbidly adherent placenta.

	Number (n = 32)	%
Elective cesarean section	20	62.5%
Emergency cesarean section	12	37.5%
PPH	32	100%
Conservative	4	12.5%
Caesarean hysterectomy	28	87.5%
Hysterectomy for secondary PPH	2	6.25%
Bladder resection and repair	6	18.7%
ICU admission	23	71.8%
Septicemia	2	6.25%
Mortality	5	15.6%

Table 4: Status of haemoglobin.

Anemia	Emergency (n = 12)	Percentage (100%)	Elective (n = 20)	Percentage (100%)
Mild	2	16.6%	18	90%
Moderate	8	66.6%	0	0%
Severe	2	16.6%	0	0%

All the cases had intrapartum/postpartum hemorrhage, out of which 4 cases were managed conservatively, with haemostatic sutures at placental bed followed by balloon tamponade. In total, 30 hysterectomies were performed: 28 during cesarean deliveries, and 2 were done 2 months after cesarean deliveries because of secondary postpartum hemorrhage. All patients received blood transfusions (mean 2 units) Hospital stay average duration is 10 days (8-18 days). ICU admission stay (average stay: 3 days) (Table 4).

Table 5: Mortality.

	No of patients (n = 5)	Percentage (100%)
Elective LSCS	1	20%
Emergency LSCS	4	80%

Anemia was more prevalent in emergency cesarean group (Table 5). Maternal mortality occurred in 5 cases due to irreversible hypovolemic shock due to massive intraoperative hemorrhage. 1 out of 5 cases (20%) mortality was in the elective group while 4 out of 5 cases (80%) was in the emergency group. These cases expired within 24 hours of surgery. Two cases went into septicemia but were managed.

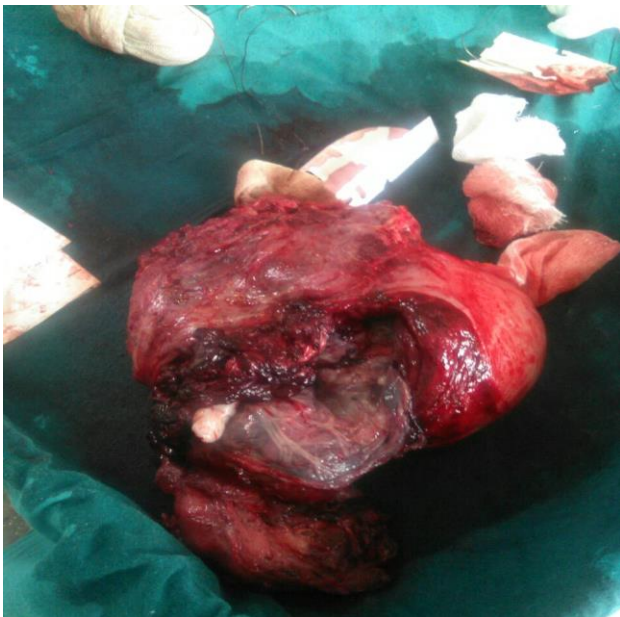


Figure 1: Hysterectomised specimen of uterus with adherent placenta.

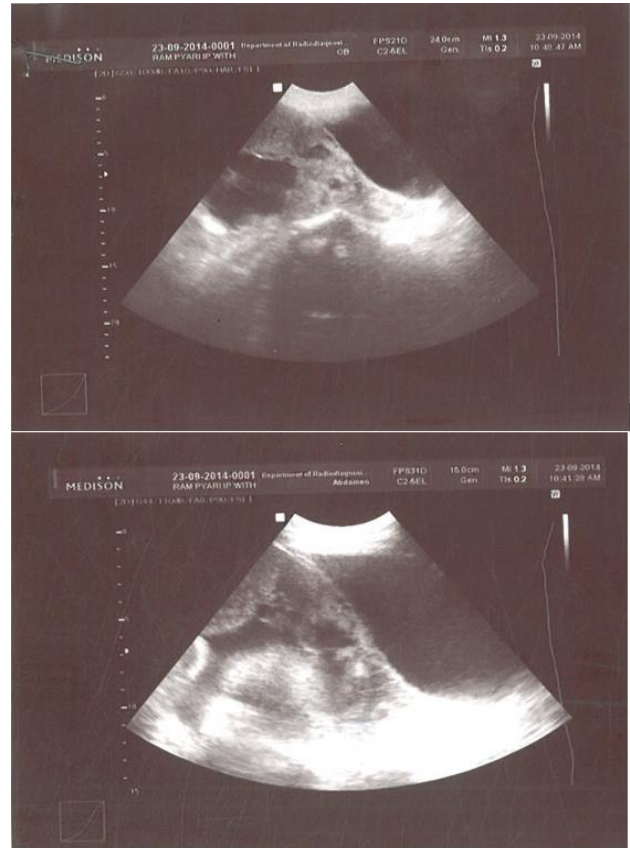


Figure 2: Ultrasonography showing morbidly adherent placenta.

DISCUSSION

The frequency of placenta increta and percreta is increasing in direct relationship to the higher number of cesarean deliveries and other types of uterine surgery. The real prevalence of morbidly adherent placenta cannot be determined with certainty. Figure 1 shows hysterectomised specimen of uterus with adherent placenta. Prenatal diagnosis is possible but requires thorough examination by an experienced radiologist, who actively looks for this pathology in a patient with an anterior low-lying or previa placenta and a history of cesarean delivery or postpartum curettage. Figure 2 shows ultrasonography picture of morbidly adherent placenta. This prenatal detection should provide accurate information. Therefore, ultrasonography with addition of doppler color flow mapping is the first line investigation for suspected placental invasion of the myometrium. The most troubling ultrasound signs of placenta percreta are the absence of retroplacental myometrium, intraplacental

basal hypoechogenic lacunae giving the placenta swiss cheese or moth eaten appearance.¹ Hypervascularity of the uterine serosa-bladder wall interface had the highest positive and negative predictive values for placenta percreta.³ In the context of previous cesarean delivery and previa, anterior placentation, those three ultrasound signs are actively sought, which might account for the high percentage of prenatal diagnoses.³ MR imaging is considered when results are inconclusive or there is posterior previa.⁴ Clinical approach involves planning deliveries of placenta percreta at 36 weeks gestational age to prevent maternal morbidity due to the spontaneous onset of labor and delivery. The patient can then be fully informed of her therapeutic options and their potential consequences and be optimally prepared for delivery by an experienced team. Multidisciplinary team consisting of obstetricians, urologist, anesthesiologist, physician, transfusion expert is useful in the management of this challenging condition. An unscheduled emergency delivery in such cases would also markedly increase neonatal risks and morbidity. This strategy is supported by the findings of Warshak et al, who showed less maternal blood loss but increased risk of prematurity, admission to neonatology units, and prolonged hospital stay when delivery was planned at 34-35 weeks' gestation.⁵ Furthermore, O'Brien et al, showed that, beyond 36 weeks of gestation, the risk of spontaneous bleeding and emergency delivery increased.⁶ The optimal time of delivery depends on several factors, e.g., placental location, cervical length, bleeding episodes, history of preterm delivery. Individual planning and management is recommended to determine the optimal week of delivery for every patient. No recommendation can be made about the optimal gestational age of delivery, because the potential maternal benefits of earlier scheduled delivery must be weighed against the consequence of premature birth on a case-by-case basis.⁷ Forced manual removal of a deeply infiltrating placenta must be avoided to prevent uncontrolled massive hemorrhage. The cesarean hysterectomy is generally considered the standard treatment for placenta accreta. The hysterectomy is performed after cesarean delivery of the fetus and there is normally no attempt to detach the placenta.^{3,8} Conservative treatment may be applied for some women who want to be able to have more children. In this approach, the placenta adhering either partially or totally to the myometrium is left in situ, either after the failure of a prudent manual attempt at placental removal or no attempt at all.³ Its advantage is the potential preservation of a functional uterus that may allow subsequent uneventful pregnancies.^{9,10} It nevertheless remains controversial for it may expose the patient to the risk of intraabdominal infection and especially major bleeding.³

CONCLUSION

Prenatal identification of placenta accreta is essential for planning delivery but also for counseling women about the possibilities of management of placenta accreta.

Prenatal diagnosis does not necessarily avoid hysterectomy but can ensure reduction of maternal risks. A decision between radical and conservative strategies for placenta increta and percreta must be made based on the degree of placental infiltration (whether it goes beyond the perimetrium and into adjacent organs) and other variables: the patient's hemodynamic status and her desire to remain fertile. Two unit of blood should be arranged with extra backup of blood from blood bank which was preoperatively cross matched. Availability of ICU facility with prior booking of bed should be done. Extra set of instruments counted pre-operatively should be arranged on separate trolley. Input output charting should be done intraoperatively. In authors opinion, cesarean hysterectomy when the perimetrium is intact remains the best therapeutic option to treat placenta increta and percreta. If, however, placental invasion largely exceeds the perimetrium and/or the patient wishes to remain fertile, management of the placenta in situ is indicated, with full knowledge of the risks of major hemorrhage and severe infection.

This study concludes that primary cesarean section should be done only when it is truly indicated. Liberal caesarean section should be avoided. Morbidly adherent placenta should always be electively planned with all preparations done. Every hospital should have a checklist, which should be followed prior to posting a case of morbidly adherent placenta in operation theatre.

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