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Maternal and fetal outcome of morbidly adherent placenta in a tertiary care institute: A retrospective one year study

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Abstract
Background: Morbidly adherent placenta, a grave complication of pregnancy is becoming an emerging cause of increased maternal morbidity and mortality. Objectives of present study are to evaluate the demographic profile, high risk factors, fetomaternal outcome in Morbidly adherent placenta (MAP).
Methods: It was a retrospective study at kam; attached Department of Obst. Gynae, KRH and J.A. Group of Hospitals, G.R.M.C. Gwalior from July 2015 to June 2016.
Results: In this study of 13 cases of morbidly adherent placenta of Department of Obst. Gynae, KRH and J.A. Group of Hospitals, G.R.M.C. Gwalior from July 2015 to June 2016 were studied, it was found that most of the cases belongs to 26 to 30 year age. 77% cases were unbooked and 23% cases were booked with regular ANC visit. 61.5% cases were already diagnosed case of placenta praevia. 100% cases had a history of previous LSCS. 80% cases were given BT intra operatively and postoperatively. 76% cases underwent caesarean hysterectomy, 100% cases were shifted to ICU, and there was one maternal death.
Conclusions: Caeserean section and placenta previa were significant risk factors in our study. Morbidly adherent placenta and its variants are associated with several adverse maternal and fetal outcome. Early antenatal diagnosis of morbidly adherent placenta, proper counselling of patients regarding associated risk is the management option to reduce maternal morbidity and mortality.

Keywords: Caesarean hysterectomy, Increta, Percreta, Placenta accrete.

Introduction
Morbidly adherent placenta (MAP) is an abnormal invasion of placental tissue (trophoblast) into outer or inner myometrium or through the serosa of the uterus (termed as accreta, increta, percreta respectively). Morbidly adherent placenta with its variant is one of the most fearedcomplications causing high morbidity and mortality in obstetrics. It is a potentially life threatening condition responsible for 7-10% of maternal mortality [1].
The marked increase in incidencehas been attributed to the increased rate of caesarean sections in recent years. Morbidly adherent placenta occurs when there is abnormally attachment of placental villi to the uterine wall with the absence of the normal intervening Decidua basilis and Nitabuch's layer.
The incidence of placenta accreta was approximately 1 in 4027 in 1970s, 1 in 2510 in the 1980s, 1 in 533 pregnancies in1982- 2002 and 1 in 210 in 2006 [2]. Marked increased in incidence of MAP is due to increased rate of caesarean sections. The two most important risk factors are an associated previa, a prior cesarean delivery, and more likely a combination of the two. Others risk factors are previous uterine surgery, previous dilatation and curettage, previous history of MRP previous myomectomy, Ashermann Syndrome (endometrial defects), submucous leio-myoma, advanced maternal age, multiparity etc) [3].
MAP is classified according to the degree of penetration of chorionic villi and by the area of placental involvement, into 3 types [4].

- Accrete (75%): the placenta is attached to the myometrium. Clinical consequences of placenta accreta are uterine perforation, massive hemorrhage at the time of placental separation, infection, hysterectomy and associated comorbidites as ureteral injury and fistula formation (5%), mortality (7.4%), postoperative infection (28%), transfusion (90%).
- Increta (17%): the placenta extends into the myometrium

- Percreta (7%): the placenta extends through the entire myometrium and uterine serosa Placenta percreta is a catastrophic event in which uterine rupture may occur as early as 9 and 14 wks

Diagnosis of MAP requires a higher degree of suspicion and medical imaging can be an effective diagnostic tool. For this Transvaginal sonography is now well established as the preferred method for the accurate localization of a low-lying placenta. Accuracy rates for TVS are high (sensitivity 87.5%, specificity 98.8%, positive predictive value 93), establishing TVS as the gold standard for the diagnosis of placenta [5, 6]. Proper Antenatal ultrasound can be used to establish the diagnosis and guide clinical management. Second and third trimester gray-scale sonographic characteristics include loss of continuity of the uterine wall, multiple vascular lacunae (irregular vascular spaces) within placenta, giving Swiss cheese appearance adjacent to the placental implantation site, lack of a hypoechoic border (myometrial zone) between the placenta and the myometrium, bulging of the placental/myometrial site into the bladder, and increased vasculature evident on color Doppler sonography [7].

Optimal management of women with placenta accreta involves early recognition of high risk women based on clinical risk factors, accurate preoperative diagnosis, detailed maternal counseling and meticulous planning at the time of delivery.

Objective

To evaluate the demographic profile, high risk factors, feto-maternal outcome in morbidly adherent placenta (MAP).

Material and Methods

This retrospective study was done in Department of Obst. Gynae, KRH and J.A. Group of Hospitals, G.R.M.C. Gwalior from July 2015 to June 2016.

Were viewed the medical records of all the women who were diagnosed to have invasive placenta. The data including age, parity, gestational age and previous case are an delivery, other surgical procedures were noted. Details of medical and obstetric history and information on the intraoperative and postoperative events were recorded. Diagnosis was made either at the time of caesarian section or during the antenatal period through scans.

Results

There were 8957 deliveries from July 2015 to June 2016, among these 13 women met the diagnostic criteria of MAP making an incidence of 0.14% over one year study period.

Table 1: Antenatal profile of patients.

Antenatal profile	No. of Patient
No. of patients with previous Caesarean section	13 (100%)
No. of Patients with diagnosed MAP in USG	4 (30.76%)
No. of Patients with placenta praevia	8(61.53%)

Table 2: Demographic parameters of women

Parameters		Number	Percentage
Age (yrs)	21-25	2	15.38
	26-30	8	61.5
	>30	3	23.07
Parity	Primigravida	0	0
	Multigravida	9	69.23
	Grand multipara	4	30.7
Booking status	Booked	3	23
	Unbooked	10	77

Table 3: Distribution according to risk factors

Risk factors	Number
Previous 1 C/S	2
Previous 2 C/S	8
Previous 3 C/S	2
Previous C/S with curettage	1
Placenta previa	8

Table 4: Morbidity associated with MAP.

Morbidity	No. of Patient
Hysterectomy	10 (76.9%)
Internal iliac artery ligation	1 (7.6%)
Intrauterine packing followed by B-lynch Suture	2 (15.3%)
ICU transfer	13(100%)
Fever	5 (38.4%)
Bladder repair	1 (7.6%)
Prolonged catheterisation	7 (53.8%)
Mortality (shock)	1 (7.6%)

Table 5: Neonatal Outcome

1.	Average gestational age	35.2 week
2.	Preterm	69.2%
3.	AverageBirthweight	2.2Kg.
4.	.PerinatalMortality	38.4%.
5.	NICUAdmission	69.2 %

Table 6: Average blood loss and blood transfusion

1	**Average blood loss**	**1.8**
2	Average blood transfusion	
	Packed cell	4 units
	FFP	2 units

Discussion

Keeping a probable diagnosis of MAP helps in saving maternal live. This helps in counseling and monitoring of high risk patients for MAP on the basis of history and USG. Both gray scale ultrasound and color Doppler examination are highly accurate in predicting the radiological patterns of placenta accrete [8].

Clinical suspicion should be raised in all women with vaginal bleeding after 20 weeks of gestation. The definitive diagnosis of most low-lying placentas is now achieved with ultrasound imaging. The UK National Screening Committee supports practice of identifying at the routine 20-week antenatal screening ultrasound scan of women whose placenta encroaches on the cervical os. and referral of those with previous caesarean, to tertiary centre will lead to timely diagnosis [9].

Frequency of MAP in our study group was 1/689 i.e 0.14%. The incidence in Richa *et al.* [10] study was 0.04% and Leena *et al.* [11] was 0.05%. 13 patients out of 13 patients i.e 100% were previous caesarean section ranging from 1 to 3. Placenta previa was found in 8 cases (61.5%) and all were previous cesarean section. These findings correlating with observation of Shobha S. Nair [12] in which incidence of placenta previa was 88.24% and previous CS was 76.47%. It establishes that MAP is directly related with frequency of caesarean section. Every effort should be made to reduce percent of primary caesarean section so that morbidity and mortality related to MAP can be reduced. If cesarean rates continue to increase, the annual incidence of placenta previa, placenta accreta, and maternal death will also rise substantially [13].

Women with major placenta praevia who have previously bled should be admitted and managed as in patients from 34 weeks of gestation and delivery by 36 week or earlier if bleeding occur at

well-equipped tertiary centres with good NICU backup, blood bank facility, interventional radiologist at time of delivery [14].

76% women in our study group had to undergo caesarean hysterectomy, all were emergency hysterectomy however Seago *et al*. demonstrated that planned cesarean hysterectomy in selected patients allows the surgical team to be prepared for complications to prevent morbidities with no demonstrable increase in intraoperative and postoperative complications, when compared with women who undergo hysterectomy within 6 months of cesarean delivery [15]. Robinson *et al*. BK too cites that there is a great benefit of planned as opposed to emergent peripartum hysterectomy [16]. In mothers with placenta previa and a suspected accreta who required peripartum hysterectomy, a scheduled delivery has been associated with shorter operative times and lower frequency of transfusions, complications, and intensive care unit admissions.

The main newborn complication was prematurity and the average gestational age in our study was 35.2 weeks. 69.2 % of the newborns were preterm with an average birth weight low birth weight <2500gm, i.e. 2.2 kg. The perinatal mortality was 38.4% So there are potential risk factors and outcomes of pregnancies in patients with incidence of placenta praevia.

Due to massive blood loss in our study group 80% cases were given Blood transfusion i.e. 4 units of whole blood and 50% were given i.e. 2units of fresh frozen plasma (FFP). Average blood loss during surgery was 1.8 liters.

In our study, one maternal death was seen. She was a case of previous 2 CS with bleeding P/V intraoperatively placenta percreta with bladder involvement was found. Maternal mortality in our study was 7.6 %, which is comparable to the rate of 7-10 % as quoted in literature [17]. The biggest risk with accretas is severe bleeding because the placenta cannot detach properly at birth. In the short term, this can require multiple blood transfusions, cause a life-threatening blood clotting crisis, or necessitate a hysterectomy. In the long term, it can cause postpartum anemia, difficulty breastfeeding, or even Sheehan's Syndrome (damage to the mother's pituitary gland, resulting in long-term health problems). Since major blood loss is the biggest risk of an accreta treatment of accretas usually revolves around trying to proactively prevent as much blood loss as possible. Correction of anaemia prior to expected blood loss. Blood bank preparations include arrangement of cross matched blood and component therapy. It will help to reduce maternal morbidity and mortality.

Conclusion

Caeserean section and placenta previa were significant risk factors in our study. Morbidly adherent placenta and its variants are associated with several adverse maternal and fetal outcome. Early antenatal diagnosis of morbidly adherent placenta, proper counselling of patients regarding associated risk is the management option to reduce maternal morbidity and mortality.

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