Original Research Article

A study of morbidly adherent placenta and its effect on maternal and neonatal outcome

Shweta Rameshkumar[1], Shubhangi Mande[2*], Laxmi Rachakonda[3]

[1]Jr. Resident, [2]Associate Professor, [3]Professor, Department of OBGY, MGM Medical College and Research Center, Aurangabad, Maharashtra, INDIA.
Email: pramod.bhale@gmail.com

Abstract

Background: Morbidly Adherent Placenta (MAP) encompasses Placenta Accreta, Placenta Increta and Placenta Percreta, an obstetrical emergency and a condition of faulty placentation. Derivation of *accrete* comes from the Latin *ac* + *crescere* – 'to grow from adhesion or coalescence, to adhere or to become attached to' (Benirschke, 2012). Although this was once a rare phenomenon, it is becoming increasingly common. As subsequently discussed, it is closely linked to prior uterine surgery. Early antenatal diagnosis and an effective team approach is the key element for management of 'MAP' with effective maternal and neonatal outcome. **Aim:** A study of morbidly adherent placenta and its effect on maternal and neonatal outcome **Objectives:** To understand the Incidence of 'MAP', Evaluation of risk factors and its effect on of Maternal and Neonatal outcome. **Materials and Methods:** Study design: Retrospective study, Study period: January 2014 – September 2018. Place of study: Department of OBGY MGM medical college and research centre, Aurangabad **Study population:** All patients with morbidly adherent placenta within the study period **Results:** The percentage of patients with MAP has increased from 0.0004% in 2014 to 0.1% in 2018 attributed to the increasing incidence of caesarean deliveries / uterine surgeries. 90% of the patients had a previous history of LSCS. We had no maternal mortality and 70% of the cases had good neonatal outcome. **Conclusion: 'MAP'** is a serious obstetric emergency with a reported maternal mortality rate of 7-10%. Though most cases are detected antenatally which gives the obstetrician an opportunity to plan the course of pregnancy and termination, a few cases are detected at the time of delivery. Keeping a planned delivery as the goal, a backup plan should be developed for every patient, which includes following an institutional protocol for management of Antepartum haemorrhage.

Key Words: Antepartum Haemorrhage, Placenta Accreta, Morbidly Adherent Placenta, Placenta Accreta Syndromes, Internal Iliac Artery ligation.

***Address for Correspondence:**
Dr. Shubhangi Mande, Associate Professor, Department of OBGY, MGM Medical College and Research Center, Aurangabad, Maharashtra, INDIA.
Email: pramod.bhale@gmail.com

Received Date: 03/08/2018 Revised Date: 12/09/2018 Accepted Date: 10/10/2018
DOI: https://doi.org/10.26611/10128210

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 18 November 2018

INTRODUCTION

Morbidly Adherent Placenta (MAP) / Abnormal Placentation / Placenta Accreta Syndrome (PAS) encompasses Placenta Accreta, Placenta Increta and Placenta Percreta, is a condition of faulty placentation. These syndromes describe the abnormally implanted, invasive or adhered placenta. 'MAP' which was once a rare phenomenon, has now become a common complication of pregnancy mainly due to an increasing rate of caesarean deliveries. It is currently the most common indication for caesarean hysterectomy[1]. Placenta accreta was first described in 1937 by Irwing *et al* as failure of separation of the placenta from the uterine wall following delivery of the fetus, leading to the commonly used term 'morbidly adherent placenta'[2] Development of 'PAS' is complex and multifactorial. Normal placentation does not proceed beyond the inner third of the myometrium. However, an invasive placenta proliferates and invades local structures like a malignant tumor. Underlying mechanisms are poorly understood. Proposed

How to cite this article: Shweta Rameshkumar, Shubhangi Mande, Laxmi Rachakonda. A study of morbidly adherent placenta and its effect on maternal and neonatal outcome. *MedPulse – International Journal of Gynaecology.* November 2018; 8(2): 82-85. http://medpulse.in/Gynacology/index.php

theories include absence of decidua or basal plate, abnormal maternal vascular remodeling and excessive trophoblastic invasion[3] When the chorionic villi invade the entire myometrium, it is termed as placenta increta, and invasion of myometrium, serosa and adjacent organs like bladder is termed as placenta percreta.[3] The incidence of PAS has increased substantially from 0.8 per 1000 deliveries in the 1980s to 3 per 1000 deliveries in the past decade, attributed to a rising global caesarean section rate.[2] Antenatal diagnosis is the key element to improve maternal and perinatal outcome.

MATERIALS AND METHODS

Study design: Retrospective study; **Study period:** January 2014 – September 2018. (Period of 4 years); **Place of study:** Department of OBGY MGM medical college and research centre, Aurangabad; **Study population:** All patients with morbidly adherent placenta within the study period.

RESULTS

Table 1: Incidence of MAP

	2014	2015	2016	2017	2018 (till September)
Normal deliveries	1511	1538	1478	1593	1297
Lscs	920	913	1012	1122	775
Total	**2431**	**2451**	**2490**	**2715**	**2072**
Morbidly Adherent placenta	1 (0.0004%)	0	2 (0.0008%)	4 (0.001%)	3 (0.144%)

Table 1: Shows the increasing incidence of morbidly adherent placenta over the time period of 2014-2018

Table 2: Association with Age: N=12

Age	Number	(%)
20-25years	4	33%
26-30years	4	33%
31-35years	3	25%
36-40years	1	8%

Table 2: Shows the mean age of presentation was 25 years

Table 3: Association with Gestational Age: N=12

Gestational age	Number	(%)
24-32wks	2	16%
32-37wks	6	50%
>37wks	4	33%

Most pregnancies were terminated between 32-37weeks gestational age (50%)

Table 4: Analysis of risk factors and outcome

Risk factors and outcome	1	2	3	4	5	6	7	8	9	10	11	12	%
Parity	+	+	primi	+	+	+	+	+	+	+	+	+	91%
Unbooked	-	-	+	+	-	-	+	+	+	-	-	+	50%
Prev 1 scar	-	-	-	-	+	+	+	+	-	-	-	+	50%
Prev 2 scars	-	+	-	-	-	-	-	-	-	+	-	-	20%
Prev 3 scars	-	-	-	+	-	-	-	-	+	-	+	-	30%
Prev MTP/DNC	+	-	-	-	+	+	-	+	-	-	-	+	50%
ANC diagnosis	+	+	-	+	+	+	-	-	-	+	+	+	66%
USG diagnosis	+	+	-	+	+	+	-	-	-	+	+	+	66%
MRI diagnosis	-	+	-	-	+	+	-	-	-	+	+	-	41%
LSCS (no MAP)	+	-	-	-	-	-	-	-	-	+	-	-	16%
Total obstetric hysterectomy	-	+	+	+	-	+	+	+	+	-	-	+	80%
Subtotal OH	-	-	-	-	+	-	-	-	-	-	+	-	20%
Internal iliac artery ligation	-	+	+	+	-	+	+	+	+	-	-	+	80%
ICU	-	+	+	+	+	+	+	+	+	-	+	+	100%
PCV	-	+	+	+	+	+	+	+	+	-	+	+	100%
FFP	-	+	+	+	+	+	+	+	+	-	+	+	100%
% associated factors	31%	62%	37%	62%	62%	68%	50%	56%	50%	37%	56%	68%	

80% of the patients diagnosed with morbidly adherent placenta had a previous history of lscs (8/10), and 40% had a previous history of MTP/DNC (4/10) thereby ascertaining a scarred uterus as a major risk factor for development of morbidly adherent placenta. We had one patient with morbidly adherent placenta who was a Primigravida, with no risk factors, which is a very rare occurrence. 50% of the patients were unbooked. 67% (8/12) of the cases were diagnosed in the antenatal period, 67% of the patients had a USG diagnosis of placenta accreta and 41% of the patients had an MRI diagnosis of placenta accreta. All patients of placenta accreta had associated placenta previa (100%) 80% of the patients of MAP had a total obstetric hysterectomy, 20% had a subtotal obstetric hysterectomy. Out of the 8 cases diagnosed with MAP, 2 patients had no evidence of MAP intraoperatively. 80% of the patients required internal iliac artery ligation. All the patients (100%) required ICU admission, with an average ICU stay of 3 days. All patients (100%) required blood product replacement to reduce complications

Table 5: Intra operative and HPR co-relation

Type of placenta	Intra operative findings (N=12)	(%)	Histopathology report (N=10)	(%)
Placenta previa (no MAP)	2	16%	-	
Placenta accrete	7	58%	9	90%
Placenta increta	1	8%	1	10%
Placenta percreta	2	16%	-	

2 out of 12 patients had no evidence of placenta accreta intraoperatively. Majority of the patients had placenta accreta intraoperatively (70%) and 90% of the histopathology reports were suggestive of placenta accrete.

Table 6: Neonatal outcome

Neonatal outcome	Number	(%)
Baby with mother	7	70%
Low birth weight	1	10%
Very low birth weight	1	10%
Neonatal mortality	1	10%

70% of the babies had good neonatal outcome

DISCUSSION

The incidence of placenta accreta is increasing over the years and is attributed more to the increasing number of caesarean deliveries over the past few decades. Researchers have reported the incidence of placenta accreta as 1 in 533 pregnancies from a period of 1982-2002 in comparison to previous reports that ranged from 1 in 4027 pregnancies in the 1970's.[4] Risk of 'MAP' is attributed most to those who have myometrial damage caused by a previous caesarean delivery or with previous history of suction evacuation / Dilatation and curettage.[4] Multiparty and advanced maternal age are also risk factors attributed to development of MAP. In our case study, 90% of the patients had a previous history of lSCS and 90% of the patients were multiparous. Similar to other studies mentioned in literature. In our study most patients (50%) were terminated between 32-37 weeks gestational age. We however had one patient of placenta accreta who was a Primigravida with no known risk factor. The reason could be attributed to placental implantation with abnormally firm adherence to myometrium because of partial or total absence of the decidua basalis and imperfect development of the fibrinoid or 'nitabuch layer'. If the decidual spongy layer is lacking, then the physiological line of cleavage is absent and some or all cotyledons are densely adherent.[11] In a study conducted by Arnadottir BT *et al*l in 2008, where in a 17yr old Primigravida delivered vaginally and upon subsequent ultrasound and MRI, placenta increta was confirmed. A conservative approach with injection methotrexate was initiated.[13] In another case study by kinoshita *et al*l in 1996, of a 30yr old Primigravida with no risk factors, had uterine rupture at 25 weeks gestation for which a supravaginal hysterectomy was performed and histopathological data showed placenta percreta[14] 80% of the cases in our study underwent a total obstetric hysterectomy while 20% underwent a subtotal obstetric hysterectomy. Termination of pregnancy in cases of morbidly adherent placenta must be individualized. The most important factor that determines outcome is antenatal diagnosis of 'MAP' by clinical suspicion, USG and MRI. In our study, 66% of the cases were diagnosed with MAP in the antenatal period while the remaining were diagnosed intraoperatively. 66% cases were diagnosed on Ultrasonography and 40% on MRI. The incidence of maternal mortality as quoted in literature is around 7-10%[9]. We had no cases of maternal mortality during the study period. In a study conducted by Ranjana *et al*l in 2017, the maternal mortality was 10%.[8] In our study we had a good neonatal outcome. About 70% (7/10) of the babies suffered no morbidity and were immediately shifted with the mother post obstetric hysterectomy, while we had a 10% neonatal mortality (1/10) incidence. In a study conducted by Richa *et al*l the perinatal mortality rate was 33%[12]

CONCLUSION

Placenta accreta is a potentially life threatening obstetric condition that requires a multidisciplinary approach for management. Early antenatal registration and regular antenatal visits is imperative to diagnose 'MAS' at the earliest, so as to minimize potential maternal or neonatal morbidity or mortality. Antenatal diagnosis gives the obstetrician an opportunity for electively timing the procedure at 37 weeks with a planned multidisciplinary management with a skilled obstetrician, anesthetist, neonatologist, blood bank team, and urologist thereby giving appreciable results. Morbidly adherent placenta should be suspected in every patient with previous history of LSCS associated with anterior low lying placenta. Confirmation of diagnosis by ultra sonography and MRI should be done, and an elective obstetric hysterectomy should be planned in cases with confirmed 'MAP', although management approach should be individualized in every patient.

REFERENCES

1. Dr Sujata Audimulapu, placenta accreta – no more a rare occurrence. International journal of science and research. March 2017. Volume 6. Issue 3.
2. Helena c Barles. Placenta accreta spectrum: review of pathology, molecular biology and biomarkers. Disease markers. Vol 2018.
3. H. Jacob saleh, placenta previa and accreta. The global library of women's medicine. January 2008.
4. ACOG, Placenta accreta. 2017
5. Jacques Balaya, placenta accreta and the risk of adverse maternal and neonatal outcome. December 2012
6. E Jauniaux, Placenta accreta spectrum, a need for more research on its aetiopathogenesis. February 2018. BJOG; an international journal of obstetrics and gynecology / vol 125, issue 11.
7. Michael A Belfort, Placenta Accreta, November 2010, vol 230, issue 5, page 430-439
8. Ranjana Desai, morbidly adherent placenta and its maternal and fetal outcome. International journal of reproduction, contraception, obstetrics and gynecology. May 2017. 1890-1893.
9. Pinas Carrilo A, Chandraharan E. Management of morbidly adherent placenta. Obstet Gynecology Reproductive med. 2016, 26 (10) : 283-290
10. Irving, C and Hertig, AT. A study of placenta accreta. surg gynecol Obstet, 1937 ; 64: 178-200
11. Williams' Obstetrics, 24th edition.
12. Richa Aggarwal, Morbidly adherent placenta : A critical Review, journal of Obstetrics and Gynaecology of india, feb 2012, 62(1):57-61
13. Arnadotir BT *et al*, case report of a 17yr old primipara with placenta increta treated with methotrexate. Laeknabladid. 2008 ; 94 (7-8), 549-552
14. Kinoshita T *et al*, spontaneous rupture of uterus due to placenta percreta at 25 weeks gestation, a case report. journal of obstetrics and gynecology research volume 22, issue 2 1996.

Source of Support: None Declared
Conflict of Interest: None Declared