Original Article

Morbidly Adherent Placenta in Patients with Placenta Previa and Feto-Maternal Outcomes

Huma Tahseen[1], Shabana Khokhar[2], Saima Qurban[3], Naveeda Khurshid[4], Munazza Tayyab[5], Nazia Muneer[6]

[1]Associate Professor of Obs & Gynae, Azra Naheed Medical college Lahore
[2,5]Associate Professor of Obs & Gynae, Rahbar Medical and Dental College RMDC Lahore
[3]Associate Professor of Obs & Gynae, Rashid Latif Medical college Lahore
[4]Assistant Professor of Obs & Gynae, Azra Naheed Medical college Lahore
[6]Punjab Rangers Teaching Hospital, Lahore

Correspondence: Dr Huma Tahseen
Associate Professor of Obs & Gynae
Azra Naheed Medical College Lahore
humatahseen@hotmail.com

Abstract

Objective: To determine the frequency of morbidly adherent placenta (MAP) in patients with placenta previa (PP), and feto-maternal outcomes at two health facilities.

Methodology: This retrospective descriptive study was done at the gynecology and OBS departments of Azra Naheed Medical College Lahore and Rahbar Medical and Dental College RMDC Lahore form July 2021 to June 2022. Pregnant women of all ages, races, and ethnicities who have been diagnosed with placenta previa by ultrasound were enrolled. The patient's complete medical and physical examination, including relevant tests such as ultrasound with colour doppler and MRI, were recorded to diagnose a morbidly adherent placenta. A morbidly adherent placenta was considered positive as per operative findings. Obstetric and perinatal outcomes were recorded via the study proforma. The data was analyzed using SPSS version 26.

Results: A total of 36 patients diagnosed with placenta previa were studied; their average age was 30.14+5.36 years and their mean gestational age was 34.85+3.27 weeks. Most of the cases 52.8% had placenta previa type IV. Out of 36 cases of placenta previa, 36.1% had a morbidly adherent placenta, (19.4% accreta, 13.9% increta, and 2.8% percreta). Antepartum haemorrhage (APH) occurred in 31.4% of patients, a cesarean hysterectomy was done in 40.0% of the cases, and no maternal mortality was found. According to the fetal outcomes, 48.6% of the neonates were underweight and the NICU admission rate was 25.7%.

Conclusion: Morbidly adherent placenta was found to be extremely common in patients with placenta previa and appears to be associated with poor feto-maternal outcomes.

Key words: Placenta previa, MAP, Hysterectomies.

Cte this article as: Tahseen H, Khokhar S, Qurban S, Khurshid N, Tayyab M, Muneer N. Morbidly Adherent Placenta in Patients with Placenta Previa and Feto-Maternal Outcomes. J Soc Obstet Gynaecol Pak. 2023; 13(2):69-72.

Introduction

Morbidly Adherent Placenta (MAP) is a pathological condition in which the placenta attaches to the uterus.[1] This occurs in about 1 in 500 pregnancies and increases the risk of serious complications, such as heavy bleeding after giving birth, the need for a hysterectomy, and admission to an intensive care unit. The highest risk for MAP is in patients who have placenta previa, especially those with a history of C-section delivery.[1,2] MAP occurs in 15% of all occurrences among women who have obstetrical bleeding and who eventually require blood transfusions.[3] However, such conditions have been linked with significant mortality and morbidity.[3] It is believed that the MAP generally develops in recurrent pregnancies, indicating the advanced age group and increased gravidity of women.[4,5] The exact causes of MAP are still unknown, but previous c-section deliveries, the advanced age of the women, and having multiple pregnancies are also considered risk factors.[4,6] Females who have had a history of two or more caesarean deliveries in the past and have placenta previa located in the anterior or central part of the uterus are 40% more likely to develop placenta accreta.[7]

Authorship Contribution: [1,5]Substantial contributions to the conception or design of the work, acquisition, [4,5]analysis, or interpretation of data for the work, [2,3]Drafting the work or revising it critically for important intellectual content, Final approval of the version to be published.

Funding Source: none
Conflict of Interest: none

Received: Nov 22, 2022
Accepted: Mar 14, 2023

Furthermore, both placenta previa and MAP together lead to a higher rate of complications in contrast to alone placenta previa.[1,8] Additionally, classifying MAP into subtypes such as placenta accreta, increta, and percreta indicates a greater degree of invasion and a higher risk of health complications. Women with placenta previa are at a higher risk of developing MAP due to the abnormal location of the placenta in the uterus. However, placenta previa could be a common risk factor for the development of Morbidly Adherent Placenta (MAP). In Pakistan, a lack of education and understanding about the importance of prenatal care leads to many women with serious obstetric disorders not receiving proper care.[7] Many women are not booked for prenatal care or are booked at small clinics or maternity homes, where they are either not diagnosed before delivery or the diagnosis is delayed until they experience severe bleeding.[7] Ultrasonography (US) with colour Doppler is the primary method of imaging used for diagnosing placenta invasion.[9] However, the accuracy and consistency of previous research on morbidly adherent placenta (MAP) remain questionable due to the varying US criteria used in each study and the lack of interobserver variation in determining placental invasion.[9-11] Recently, it has been observed that the MAP has become a significant issue in cases of placenta previa, due to the rise in the number of caesarean deliveries.[12] However, this study only included women who had placenta previa, as this was considered a risk factor for morbidly adherent placenta (MAP), providing a better chance of finding cases of this disease.

Methodology

This retrospective descriptive study was done at the Obs & Gynae departments of *Azra Naheed Medical College,* Lahore and *Rahbar Medical* and Dental *College,* RMDC, Lahore, from July 2021 to June 2022. Data of pregnant women of all ages, races, and ethnicities who have been diagnosed with placenta previa by ultrasound were enrolled. Women who have been diagnosed with a placenta previa with a coexisting uterine anomaly such as a bicornuate uterus, a septate uterus, or a unicornuate uterus, women with pregnancy-related complications, such as hypertension, diabetes, or fetal anomalies, or who have a history of bleeding disorders or clotting disorders were excluded. Demographic information, including age, parity, gestational age at diagnosis, and previous obstetric history, was collected. The patient's complete medical and physical examination, including relevant tests such as ultrasound with colour doppler and MRI, were recorded to diagnose a morbidly adherent placenta. The appropriate mode of caesarean delivery, whether emergency lower segment caesarean section (EMLSCS) or elective lower segment caesarean section (ELLSCS), was documented based on medical indications. A morbidly adherent placenta was considered positive as per operative findings. Obstetric and perinatal outcomes, including mode of delivery, blood loss, and complications, were also collected and recorded via the study proforma. Data was collected using a study proforma and analyzed using SPSS version 26.

Results

A total of 36 patients diagnosed with placenta previa were included in the study. The mean age of these patients was 30.14±5.36 years, and their mean gestational age was 34.85±3.27 weeks. Out of all the cases, 52.8% underwent elective C-sections and 47.2% underwent emergency C-sections. Most of the cases 52.8% had placenta previa type IV, followed by type III in 30.6% of the women, and placenta previa type II in 16.7% of the cases. (Table I)

Out of all women with placenta previa, 36.1% had a morbidly adherent placenta, particularly 19.4% accreta, 13.9% increta, and 2.8% percreta. (Table II)

Table I: Demographic characteristics of the patients (n=36)

Variables		Statistics	
Age (mean +SD)		32.02±6.23 years	
Gestational age		33.91±3.59 weeks	
Type of C-sections	Elective	19	52.8%
	Emergency	17	47.2%
Degree of placenta previa	II	6	16.7%
	III	11	30.6%
	IV	19	52.8%
	Total	36	100.0%

Table II: Frequency of MAP in patients with placenta previa (n=36)

Variables			Statistics	
MAP	No		23	63.9%
	Yes	Accreta	07	19.4%
		Increta	05	13.9%
		Percreta	01	2.8%

As per the maternal complications, APH occurred in 31.4% of patients, cesarean hysterectomies were done in 40.0% of the cases, and no maternal mortality was found. According to the fetal outcomes, 48.6% of the neonates were underweight and NICU admission rate was 25.7%. (Table III)

Table III: Feto-maternal outcomes of the patients (n=36)

Variables			Statistics	
Maternal outcomes		APH	11	31.4%
		Cesarean hysterectomies	14	40.0%
		Mortality	--	--
Fetal outcomes	**Apgar score at birth**	3	11	31.4%
		5	2	5.7%
		6	16	45.7%
		7	4	11.4%
		8	2	5.7%
	Apgar score at 10 minutes	4	3	8.6%
		5	4	11.4%
		6	6	17.1%
		7	3	8.6%
		8	18	51.4%
		9	2	5.7%
	Low birth weight		17	48.6%
	NICU admission		09	25.7%

Discussion

Placenta previa is a significant pregnancy complication in which the placenta attaches to the bottom of the uterus and may partially or completely cover the cervix. Moreover, placenta previa is of particular concern as it is linked to a greater risk of a MAP, and this combination can result in more severe health problems and death for both the mother and the fetus. This study was done to assess the frequency of a morbidly adherent placenta in cases having placenta previa and maternal and fetal outcomes. Overall, 36 patients who were identified as having placenta previa were studied, and out of these, 40.0% of the women had a morbidly adherent placenta. Consistently, Abdel-Hamid AS et al[13] also reported a similar pattern, where out of 100 cases of placenta previa, 45 were found to have a morbidly adherent placenta. Likewise, Markley JC et al1 found comparable results. Haidar ZA et al[14] also reported 23 cases of morbidly adherent placentas out of 50 women in their study, and 12 of those cases (52.2%) had severe MAP. However, these studies only focused on diagnostic accuracy and did not provide any information about clinical outcomes. The prevalence of placenta previa in developing countries varies depending on the specific country and population. However, it is generally considered to be higher in these countries compared to developed countries. Factors that may contribute to the higher rates in developing countries include poor nutritional status, insufficient access to appropriate prenatal care, and high rates of maternal anemia.

In this study, the mean age of these patients was 30.14±5.36 years, the mean gestational age was 34.85±3.27 weeks, and out of all the cases, 51.4% underwent elective C-sections and 48.6% underwent emergency C-sections. However, these findings were consistent with other studies.[15,16]

In this study, most of the cases 52.8% had placenta previa type IV, followed by type III in 30.6% of the women, and placenta previa type II in 16.7% of the cases. Consistently, Maqsud M et al[17] reported that the majority, 41.7%, had grade IV placenta previa, followed by 25.8% who had grade II, 20.8% who had grade III, and 11.7% who had grade I. In the line of this study, Perveen S et al[18] also reported that the placenta previa type II was found in 18% of the patients, type III was found in 28% of the cases, and type 4 was in 40% of the cases.

In this study, as per the maternal complications, APH occurred in 31.4% of patients, cesarean hysterectomies were done in 40.0% of the cases, placenta accrete with developed in 25.7% of the cases, and adherent placenta were observed in 14.3% of patients, while according to the fetal outcomes, 48.6% of the neonate were underweight and frequency of NICU admission was 25.7%. These findings were in close with study by Perveen S et al.[18]

In this study, adverse feto-maternal outcomes and cesarean hysterectomies were markedly higher among patients with placenta previa and MAL. These findings were also supported by Sultana R et al[19] as among women with placenta previa who had adherence, there were significantly higher rates of peripartum hysterectomies, surgical complications, and ICU admission compared to women with placenta previa without adherence.[19] On the other hand Afzal S et al[20] also observed close findings. Although Wasim T et al[21] also reported that the women having placenta previa with adherence had significantly more maternal morbidity, including higher rates of postpartum hemorrhage greater than 2000ml, caesarean hysterectomies, urinary bladder injuries, multiple transfusions and ICU admission. The negative impact of placenta previa and MAP can be greatly reduced if detected during prenatal care. Placenta previa, a condition where the placenta implants in the lower uterine segment, has been identified as a risk factor for morbidly adherent placenta (MAP). This is because in cases of placenta previa, the placenta is more likely to invade and adhere to the lower uterine segment, leading

to MAP. Additionally, previous caesarean delivery, advanced maternal age, multiparity, and a history of curettage or other uterine surgeries have also been identified as risk factors for MAP. These risk factors can lead to structural abnormalities in the uterus or a weakened uterine wall, which can facilitate the invasion of the placenta into the uterine wall. It is important for healthcare providers to be aware of these risk factors and monitor patients closely to diagnose and manage MAP in a timely manner to prevent adverse outcomes.

Conclusion

In conclusion, morbidly adherent placenta observed to be frequently high among patients with placenta previa, and such condition was significantly linked to adverse feto-maternal outcomes. Therefore, healthcare providers should carefully monitor patients with placenta previa for the development of a morbidly adherent placenta and take appropriate measures to manage this condition to prevent adverse fetal and maternal outcomes.

Due to the several study's limitations, specifically the small sample size that may not accurately reflect other factors and the uncertain pathophysiology of morbidly adherent placenta, the findings cannot be immediately applied in practice. Instead, comprehensive studies are recommended.

References

1. Markley JC, Farber MK, Perlman NC, Carusi DA. Neuraxial anesthesia during cesarean delivery for placenta previa with suspected morbidly adherent placenta: a retrospective analysis. Anesthesia & Analgesia. 2018 Oct 1;127(4):930-8.
2. Balayla J, Bondarenko HD. Placenta accreta and the risk of adverse maternal and neonatal outcomes. J Perinat Med. 2013;41:141–149.
3. Fujisaki M, Furukawa S, Maki Y, Oohashi M, Sameshima H. Maternal morbidity in women with placenta previa managed with prediction of morbidly adherent placenta by ultrasonography. Journal of pregnancy. 2017 Apr 24;2017.
4. Chaudhari HK, Shah PK, D'Souza N. Morbidly adherent placenta: its management and maternal and perinatal outcome. The Journal of Obstetrics and Gynecology of India. 2017 Feb;67:42-7.
5. Aggarwal R, Suneja A, Vaid NB, et al. Morbidly adherent placenta: a critical review. *J Obstet Gynaecol India.* 2012;62(1):57–61.
6. Wu S, Kocherginsky MHJ. Abnormal placentation: twenty-year analysis. *Am J Obs Gynecol.* 2005;192(5):1458–1461
7. Aziz S, Ather R. Morbidly adherent placenta: Can we limit the aftermath. J Coll Physicians Surg Pak. 2011 Sep 1;21(9):556-8.
8. Wright JD, Pri-Paz S, Herzog TJ, et al. Predictors of massive blood loss in women with placenta accreta. Am J Obstet Gynecol. 2011;205:38.e1–6.
9. Agarwal S, Agarwal A, Chandak S. Role of placenta accreta index in prediction of morbidly adherent placenta: A reliability study. Ultrasound. 2021 May;29(2):92-9.
10. Cali G, Giambanco L, Puccio G, et al. Morbidly adherent placenta: evaluation of ultrasound diagnostic criteria and differentiation of placenta accreta from placenta percreta. *Ultrasound Obstet Gynecol* 2013; 41: 406–412.
11. Rac MW, Dashe JS, Wells CE, et al. Ultrasound predictors of placental invasion: the Placenta Accreta Index. *Am J Obstet Gynecol* 2015; 212: 343.e1–7
12. Wasim T, Bushra N, Riaz S, Iqbal HI. Fetomaternal outcome in patients with placenta previa. Pakistan Journal of Medical Sciences. 2020 Jul;36(5):952.
13. Abdel-Hamid AS, Aly MS, Ghaly SZ, Elshourbagy MM. Detecting accuracy of three dimensional power Doppler (3DPD) vascular indices for prenatal diagnosis of morbidly adherent placenta in patients with placenta previa. Open Journal of Obstetrics and Gynecology. 2019 Dec 25;10(1):49-64.
14. Haidar ZA, Papanna R, Sibai BM, Tatevian N, Viteri OA, Vowels PC, Blackwell SC, Moise Jr KJ. Can 3-dimensional power Doppler indices improve the prenatal diagnosis of a potentially morbidly adherent placenta in patients with placenta previa?. American Journal of Obstetrics and Gynecology. 2017 Aug 1;217(2):202-e1.
15. Alhubaishi F, Mahmood N. Prevalence and Fetomaternal Outcome of Placenta Previa at Salmaniya Medical Complex, Bahrain. Cureus. 2022 Aug 11;14(8).
16. Salim NA, Satti I. Risk factors of placenta previa with maternal and neonatal outcome at Dongola/Sudan. Journal of Family Medicine and Primary Care. 2021 Mar;10(3):1215
17. Maqsud M, Aiman Z, Ayub N, Tufail N, Waris N, Jabeen F. Placenta Previa and its Effects on Feto-Maternal Health at a Tertiary Care Hospital. J Soc Obstet Gynaecol Pak. 2020;10(1):30-34
18. Perveen S, Hasnain AZ. Scarred uterus; frequency of placenta praevia. Professional Med J Jun 2012;19(3): 000-000
19. Sultana R. Foeto-Maternal Outcome in Women with Placenta Praevia and Morbidly Adherent Placenta Praevia. Ann Pak Inst Med Sci. 2022; 18(3):212-217
20. Afzal S, Akram R, Fatima T, Aslam M, Zafar A, Iqbal S. Fetomaternal Outcome with Placenta Previa and Morbidly Adherent Placenta, A Cross Sectional Study.
21. Wasim T, Bushra N, Riaz S, Iqbal HI. Fetomaternal outcome in patients with placenta previa. Pakistan Journal of Medical Sciences. 2020 Jul;36(5):952.