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ORIGINAL ARTICLE

Fetomaternal Outcome in Morbidly Adherent Placenta

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ABSTRACT

Aim: To determine the fetomaternal outcome in morbidly adherent placenta
Study design: Cross-sectional study.
Place and duration of study: Department of Obstetrics & Gynecology, Liaquat University Hospital Hyderabad from 1st January 2022 to 30th June 2022.
Methodology: Forty five females of adherent placenta were enrolled. The consent was taken from every relevant patient having low lying placenta with previous scar/surgery the following details were collected. The operative events were recorded.
Results: The mean age was 30.77 years and mean gestational age was 34.15 weeks. Majority of the cases 53.3% had history of three previous C-sections, 64.4% cases had placenta accreta, 20% had placenta percreta and 15.6% had p Placenta increta. Antepartum haemorrhage was seen in 68.9% of the cases. 55.6% females underwent C-sections, 22.2% were admitted in ICU, rate of the hysterectomy was high, 46.7% one patient was died. Considering the fetal outcome, 22.2% of the cases had fetal growth retardation, pre-term birth rate was 66.7%, neonatal ICU admission rate was 31.1% of the cases, respiratory distress was seen in 6.7% of the cases, perinatal sepsis was in 11.1% of the cases and intra uterine death rate was 8.9% of the cases.
Conclusion: Morbidly adherent placenta was found to be a significant cause of adverse fetal and maternal outcome. It was frequently more prevalent among females who had previous history of scar.
Key words: Invasive placenta, Fetomaternal complications

INTRODUCTION

The aberrant adhesion of the placenta to the surrounding uterine wall, either completely or partly, is known as morbidly adherent placenta (MAP).[1] It is a potentially fatal pregnancy complication since it is associated with a high rate of morbidity and death due to the risk of major bleeding during birth[2]. The incidence is one in every two thousand five hundred deliveries, according to the American College of Obstetricians and Gynecologists[3,4]. The prevalence of MAP has increased globally, mostly as a result of the steady rise in C-section rates. Prior vaginal delivery is less probable than prior C-section to be associated with placenta previa (implantation of placenta in lower uterine segment)[5,6].

Predisposing factors for placenta accreta are uterine trauma due to hysterectomy, C-section, myomectomy, hysterectomy, dilation and curettage (D&C).[7] Women with placenta previa are more likely to have MAP if the placenta is previa and they were delivered by C-section[8]. Morbidly adherent placenta is associated with significant pregnancy complications such as life-threatening maternal hemorrhage, massive transfusion, peripartum hysterectomy and surgical trauma to adjacent organs, acute respiratory distress syndrome (ARDS), acute transfusion reactions, electrolyte imbalance, and renal failure[9,10].

Most patients with these serious obstetric disorders in Pakistan are not booked antenatally or are booked in small clinics or maternity homes, where antenatal diagnosis is not made, or the diagnosis is delayed until serious haemorrhage. These obstetric difficulties are not anticipated by general practitioners, midwives, and traditional birth attendants providing obstetric care in small clinics[11]. In addition, by the time these patients are transferred to tertiary care facilities, they have already significant blood loss that causes hemodynamic instability due to a lack of surgical skill and blood banking capabilities[12]. Despite massive replacement of blood products and intensive management, radical surgical operations performed in an emergency for a morbidly adherent placenta are associated with significant morbidity in such patient. Additionally, 24 hour interventional radiology services are not offered even in tertiary care public hospitals, depriving patients of a useful technique for the control and prevention of haemorrhage as well as uterine conservation in situations where it is most desirable. The reported prevalence for morbidly adherent placenta is 3%[13]. Because early evaluation and intervention can protect the mother and foetus from different life-threatening problems associated with morbidly adherent placenta, this study was conducted to examine the fetomaternal outcome among women with such conditions at tertiary care hospitals.

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MATERIALS AND METHODS

This study is a cross-sectional study conducted during from 1st January 2022 to 30th June 2022 in Obstetrics & Gynaecology at Liaquat University of Medical & Health Sciences Hospital Hyderabad. Permission from ethical committee was obtained. All the pregnant females of 18-45 years of age who are going to have a C-section due to strong suspicion of morbidly adherent placenta based on history and ultrasound were considered for this study. The consent was taken from every relevant patient having low lying placenta with previous scar/surgery the following details were collected regarding the Patient included in antenatal history as H/o APH, H/o blood transfusion and the investigations as hemoglobin, blood grouping and typing, coagulation profile. The operative events recorded were C-section- emergency/elective, estimated blood loss, procedures needed to control bleeding, the operative time, injury to bowel, bladder, ureter, caesarean hysterectomy, post-operative maternal morbidities (Acute tubular necrosis ATN, DIC), total blood and blood products transfused, ICU admission, total hospital stay whereas the neonatal outcome were recorded as term/preterm, birth weight, Apgar score, perinatal mortality. All Pregnant females having low lying placenta but not MAP, or with disseminated intravascular coagulation (DIC) or bleeding disorder and use of anticoagulants were excluded. The data was collected and all such maneuvers [history taking, clinical examinations, intervention and data collection] were performed by principal researcher under the supervision of senior obstetrician of ward having ≥05 years obstetric experience. The data was entered and analyzed through SPSS-25.

RESULTS

In this study total 45 females of adherent placenta were studied; their mean age was 30.77 years and mean gestational age was 34.15 weeks (Table 1). Most of the patients, 82.2% were from urban areas and remaining 17.8% were from rural areas, 64.4% patients had parity 1-3 and 33.4% had parity 4-6. Most of the females 82.2% were un-booked. Majority of the cases 53.3% had history of three previous C-sections, followed by 28.9% had history of two previous C-sections and 4.4% females had history of 4

previous C-sections. Out of all study participants 64.4% cases had placenta accreta, 20% had placenta percreta and 15.6% had p Placenta increta. In this study antepartum haemorrhage was seen in 68.9% of the study participants. In this study from all study participants, 77.8% underwent blood transfusion intra-operatively. Form all the females 22.2% were admitted in ICU. Rate of the hysterectomy was high as it was done among 46.7% of the females. Only one patient had developed DIC. As per mortality, maternal death was noted in one patient (Table 1).

Table 1: Maternal outcome in morbidly adherent placenta

Variable	Statistics
Age (Years)	30.77±3.39
Gestational age (Weeks)	34.15±2.78
Parity	
1-3	29(64.4%)
4-6	15(33.4%)
>6	01(02.2%)
Booking status	
Booked	08(17.8%)
Un-booked	37(82.2%)
History of previous C-sections	
Previous 1 c/s	06(13.3%)
Previous 2 c/s	13(28.9%)
Previous 3 c/s	24(53.3%)
Previous 4 c/s	02(04.4%)
Operative findings regarding morbidly adherent placenta	
Placenta accreta	29(64.4%)
Placenta percreta	09(20.0%)
Placenta increta	07(15.6%)
Antepartum haemorrhage	
Yes	31(68.9%)
No	14(31.1%)
Intraoperative blood transfusion	
Yes	35(77.8%)
No	10(22.2%)
ICU admission	
Yes	10(22.2%)
No	35(77.8%)
Hysterectomy	
Yes	21(46.7%)
No	24(53.3%)
DIC among morbidly adherent	
Yes	1(2.2%)
No	44(97.8%)
Maternal mortality in adherent placenta	
Yes	1(2.2%)
No	44(97.8%)

Table 2: Fetal outcome in morbidly adherent placenta

Variable	No. (%)
Fetal growth retardation	
Yes	10(22.2%)
No	35(77.8%)
Fetal pre-term birth	
Yes	30(66.7%)
No	15(33.3%)
Neonatal ICU admission	
Yes	14(31.1%)
No	31(68.9%)
Respiratory distress	
Yes	3(6.7%)
No	42(93.3%)
Perinatal sepsis	
Yes	5(11.1%)
No	40(88.9%)
Intra uterine death	
Yes	4(8.9%)
No	41(91.1%)

According to the fetal outcome, 22.2% of the cases had fetal growth retardation, pre-term birth rate was 66.7%, neonatal ICU admission rate was 31.1% of the cases, respiratory distress was seen in 6.7% of the cases, perinatal sepsis was in 11.1% of the cases and intra uterine death rate was 8.9% of cases (Table 2).

DISCUSSION

A placenta that is adhering to a previous caesarean scar is a dangerous condition that can lead to terrible problems. It has considerable impact on the mother, being associated with outcomes such as hemorrhage during and after delivery[14,15]. In this study mean age of the females was 30.77 years and mean gestational age was 34.15 weeks. Similarly, Mamluk et al[14] reported that the mean age of the patients was 29.34±5.58 years and mean gestational age was 37.08±1.38 weeks. However, on other hand Demirci et al[15] reported that the mean age of the female was 30.13±5.08 years

In the present study, most of the females 82.2% were un-booked. Inconsistently Wasim et al[16] reported that the one hundred thirty-one out of one hundred fifty-two (86.1%) of our patients were booked.

This study showed that majority of the cases (53.3%) had history of three previous C-sections, followed by 28.9% had history of two previous C-sections and 4.4% females had history of 4 previous C-sections. On other hand Nissa et al[17] also reported that C-section as a reason of scar in uterus was most common and statistically significant reason linked with all three types of morbidly adherent placenta (placenta accrete veram, placenta increta and placenta percreta). Okendrajit Singh et al[18] also reported that the prevalence rate of MAP in previous caesarean delivered females (34.37%) is higher than that of previously vaginal delivered females (22.03%).[19] Previous C-section delivery was found to be a significant risk factor for abnormal placentation with a prevalence of 78.88% over 28.12% in cases of prior vaginal delivery. A previous cesarean delivery has a 5.8 times higher risk of abnormal placentation in a subsequent pregnancy than a previous vaginal delivery.

In this study out of all study participants 64.4% cases had placenta *accreta, 20% had placenta percreta and* 15.6% had p*lacenta increta. Similarly,* Nissa et al[17] reported that placenta accretavera was 1.5%, placenta increta was 6.82% and placenta percreta was 1.5%. In another study of Mamluk et al[14] reported 16 patients (6.5%) had accreta-type morbidly adhesive placentas, 10 had increta-type morbidly adherent placentas, and 9 had percreta-type morbidly adherent placentas. Other research has shown that uterine operations, prior caesarean sections, IVF pregnancies, and advancing mother age are risk factors associated with abnormal placental adhesion. Avoidance of these risk factors will certainly reduce morbidly adherent placenta.[18,20]

Most of the females 82.2% were from urban areas and remaining 17.8% were from rural areas, 64.4% females had parity, 1-3 and 33.4% had parity, 4-6. Most of the females 82.2% were un-booked. Majority of the cases 53.3% had history of three previous C-sections, followed by 28.9% had history of two previous C-sections and 4.4% females had history of 4 previous C-sections. Similarly Paneerselvam et al[19] reported that the twelve (66.66%) out of eighteen women had prior one C-section, 2(11.11%) women had prior 2 C-section and 2(11.11%) women had prior 3 C-section.

In this study antepartum Haemorrhage was seen in 68.9% of the study participants, 22.2% underwent blood transfusion intra-operatively, 22.2% were admitted in ICU, rate of the hysterectomy was high as it was done among 46.7% of the females, only one female had developed DIC and only one female was died. On other hand Wasim T et al[16] showed that patients with MAP had significantly higher rates of maternal morbidity, including postpartum haemorrhage>2000ml, caesarean hysterectomy, number of blood transfusions, bladder injury, and requirement for ICU stay ($p<0.0001$). On other hands Rajoriya M et al[21]a planned birth has been linked to shorter operating times, a decreased frequency of transfusions, complications and intensive care unit hospitalisations, as well as only one maternal mortality was seen,

in patients with placenta previa and a suspected accreta who needed peripartum hysterectomy.

In this study according to the fetal outcome, 22.2% of the cases had fetal growth retardation, pre-term birth rate was 66.7%, neonatal ICU admission rate was 31.1% of the cases, respiratory distress was seen in 6.7% of the cases, perinatal sepsis was in 11.1% of the cases and intra uterine death rate was 8.9% of the cases. Whereas Wasim et al[16] reported that fetal outcome was good in both groups as gestational age at delivery was 36 weeks or more, birth weight ≥2.5 kg and >6 APGAR score ($p<0.05$). Two neonatal deaths were due to prematurity in MAP and one due to placenta previa. Rajoriya et al[21] reported that 69.2 % of the newborns were preterm with an average birth weight low birth weight. Since major blood loss is the greatest risk of accreta treatment, it is usually best to avoid as much blood loss as possible. By doing so, maternal morbidity and death will be decreased.

CONCLUSION

Morbidly adherent placenta was found to be a significant cause of adverse fetal and maternal outcome. It was frequently more prevalent among Females who had previous history of scar. Maternal mortality can be decreased by providing regular antenatal care, adequate blood transfusion arrangements, and a multidisciplinary approach. To reduce feto-maternal morbidity and death, a firm plan should be created for a planned delivery by a team of qualified placenta accreta specialists in tertiary care hospitals that have the resources to manage morbidly attached placenta.

Conflict of interest: Nil

REFERENCES

1. Panaiotova J, Tokunaka M, Krajewska K, Zosmer N, Nicolaides KH. Screening for morbidly adherent placenta in early pregnancy. Ultrasound Obstet Gynecol 2019;53(1):101-6.
2. Shamshirsaz AA, Fox KA, Erfani H, Clark SL, Salmanian B, Baker BW, et al. Multidisciplinary team learning in the management of the morbidly adherent placenta: outcome improvements over time. Am J Obs Gynae 2017;216(6):612-7.
3. Desai R, Jodha B, Garg R. Morbidly adherent placenta and it's maternal and fetal outcome. Int J Reprod Contracept Obstet Gynecol 2017; 6(5):1890.
4. Bhide A, Sebire N, Abuhamad A, Acharya G, Silver R. Morbidly adherent placenta: the need for standardization. Ultrasound Obstet Gynecol 2017; 49(5):559-63.
5. Podwika S, Wang C, Zuber M, Cortez B, Chisholm C, Dudley DJ. Multidisciplinary Management of Morbidly Adherent Placenta Reduces Blood Loss. Obs Gynecol 2019;133:160S-5.
6. Collins SL, Chantraine F, Morgan TK, Jauniaux E. Abnormally adherent and invasive placenta: a spectrum disorder in need of a name. Ultrasound Obstet Gynecol 2018;51(2):165.
7. Rac MW, Ballas J, Salmanian B, Fox K, Shamshirsaz AA, Lee W, et al. Ultrasound findings of atypical morbidly adherent placenta. Am J Obs Gynae 2018;218(1):S284.
8. Shamshirsaz AA, Fox KA, Erfani H, Clark SL, Shamshirsaz AA, Nassr AA, et al. Outcomes of planned compared with urgent deliveries using a multidisciplinary team approach for morbidly adherent placenta. Obs Gynecol 2018; 131(2): 234-41.
9. Gupta S, Jain NP, Singla SK, Juneja SK, Aggarwal R, Khanna L. Clinical Profile of Morbidly Adherent Placenta. Natl J Integr Res Med 2017;8(3):22-5.
10. Rac MW, Moschos E, Wells CE, McIntire DD, Dashe JS, Twickler DM. Sonographic findings of morbidly adherent placenta in the first trimester. J Ultrasound Med 2016;35(2):263-9.
11. Aziz S, Ather R. Morbidly Adherent Placenta: Can We Limit the Aftermath?. J CollPhy Sur Pak 2011;21(9):556-8.
12. NazMemon S, Majeed AI. Diagnostic Role of Doppler Ultrasound in Morbidly Adherent Placenta (MAP): an Obstetrical Emergency. J Soc Obstet Gynaecol Pak 2016;6(4):165-70.
13. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, et al. Maternal morbidity linked with multiple repeat cesarean deliveries. National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Obstet Gynecol 2006;107:1226–32.
14. Mamluk K, Wajid R, Janjua M, Jawwad Z, Zahra S, Bashir S. Frequency of morbidly adherent placenta and linked complications in patients with previous cesarean sections. JMHS 2020;14;3;515-7.
15. Demirci O, Tuğrul AS, Yılmaz E, Tosun Ö, Demirci E, Eren YS. Emergency peripartum hysterectomy in a tertiary obstetric center: nine years evaluation. J Obstet Gynaecol Res 2011; 37(8):1054.
16. Wasim T, Bushra N, Riaz S, Iqbal HI. Fetomaternal outcome in patients with placenta previa. Pak J Med Sci 2020;36(5):952-7.
17. Nissa F, Dars S, Awan S, Mumtaz F. Frequency of morbidly adherent placenta in previous scar. J LiaquatUni Med Health Sci 2019;18(02):94-8.
18. Okendrajit Singh O, Pukhrambam GD, Bidya Devi A, et al. Abnormal placentation following previous C-section delivery- a ten years study in peripartum hysterectomy cases. J Evid Based Med Healthc 2020; 7(4), 168-72.
19. Paneerselvam A, Sundaram A. Fetomaternal outcome in morbidly adherent placenta in a tertiary referral hospital. Int J Reprod Contraception Obstet Gynecol 2018; 7(11): 4540-5.
20. Wajid R, Hanif A, Bashir S. Treatment outcome of morbidly adherent placenta: an experience at tertiary care hospital. Annals 2017;23(1):23-8.
21. Rajoriya M, Dubey S, Gandhi P, Agarwal S. Maternal and fetal outcome of morbidly adherent placenta in a tertiary care institute: a retrospective one year study. Int J Clin Obstet Gynaecol 2020; 4(4): 290-2