Original Article

Maternal Outcome in Morbidly Adherent Placenta in Obstetrics Patients

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Abstract

Objective: To determine the frequency and maternal outcome in morbidly adherent placenta in obstetrics patients.
Study design: Descriptive, cross-sectional study.
Setting and duration: Department of Obstetrics & Gynecology, Liaquat University Hospital Hyderabad, from October 2014 to March 2015.
Methodology: A total of 195 women with low lying placenta partially or completely covering the internal os were selected for this study. After taking detailed history then patients were subject to relevant investigations includes ultrasound pelvis, color flow doppler, and MRI if doppler is inconclusive.
Results: The mean age was 30.77±2.42 years and average gestational age was 34.64±2.53 weeks. There were 60.51% type IV placenta praevia and 39.49% type III placenta praevia. The frequency of morbidly adherent placenta in Obstetrics patients was observed in 89.74%. Regarding the maternal outcome of the morbidly adherent placenta, 63.1% of the patients had an obstetric hysterectomy, 11.3% required bladder repair, 40.5% shifted to ICU, 85.1% women need multiple transfusion and maternal mortality was observed in 17.4% patients.
Conclusion: The results of our study show that morbidity adherent placenta is a frequent problem associated with the previous caesarean section and placenta praevia. The most frequent maternal outcome of morbidly adherent placenta aremultiple transfusions and obstetric hysterectomy. To reduce the related morbidity and mortality, a national guideline should be developed regarding the organization of obstetric care, and timing of ultrasound doppler examination and management interventions in such cases.
Key words: Adherent placenta, Obstetric hysterectomy, Bladder repair.

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Introduction

Morbidly adherent placenta (MAP) is delineated as the pathological adherence whichever in whole or in part of the placenta to the uterine wall.[1] MAP occurs whenever there is the pathological attachment of placental villi to the uterine wall with the lack of the intervening decidua basalis and Nitabuch's layer.[2]As per American College of Obstetrics and Gynecology the annual incidence is 1:2500 per delivery and 1 in 800 deliveries in the United Kingdom. Recently increased incidence has been attributed to the amplified rate of caesarean sections in the recent past.[2]

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There are three variants of this condition, which are classified depending on the extent of adherence and invasion of the placenta, first one as placenta acretea which reaching the myometrium in 75%, secondly placenta increta which extend into the myometrium in 17%, and last one is placenta percreta, that extend through entire myomatrium& bladder serosa in 7%.[2]Approximate 75% of placenta percreta are linked with placenta praevia.[4] About 25% of women with placenta praevia and one previous caesarean delivery have a probability of MAP, whereas almost 50% with placenta praevia and two prior caesarean deliveries have a possibility of MAP.[5]

Morbidly adherent placenta remains the greatest challenge in modern obstetrics[6], due to associated maternal risk such as hemorrhage, blood transfusion, DIC, obstetric hysterectomy, injury to bladder/bowel, ARDS, renal failure, ICU care, infections, and death.[7] In a study of morbidly adherent placenta 85% of the patients have an obstetric hysterectomy, 50% patients shifted to ICU, 30% of the patients need multiple blood transfusions, need of bladder repair in 15% patients, maternal mortality observed in 30% patients.[8]

During antenatal period, such women should be identified carefully, radiological imaging can be an effective diagnostic tool. Ultrasound has 80% sensitivity with 95% specificity.[9,10] The complications of the morbidly adherent placenta are so severe that it requires a multidisciplinary approach to reduce maternal morbidity and mortality. Liaquat University Hospital Hyderabad is one of the largest tertiary care hospitals which receive large no of referred patients from different health facilities with previous caesarean section /placenta previa diagnosed on ultrasound scan. This study may not only help us to analyze the maternal outcome but to identify and take steps in management to reduce its related morbidity and mortality.

Methodology

This was a descriptive, cross-sectional study carried out in the Department of Obstetrics & Gynecology, Liaquat University Hospital Hyderabad, from October 2014 to March 2015. Over the 6 months, 195 patients were enrolled by non-probability consecutive technique. The sample size of 195 patients was calculated using WHO software for sample size estimation.

All pregnant women of age between 20-35 years with gestational age more than 28 weeks by ultrasound scan/ with low lying placenta partially or completely covering the internal os were included in the study. Pregnant women with normally sited placenta delivering vaginally or by caesarean section were excluded from this study. Pregnant women with causes of the acute abdomen include acute appendicitis, ruptured abdominal aneurysm, peritonitis, pancreatitis, cholecystitis, ruptured spleen or ruptured ovarian cyst were excluded. Pregnancy with any renal disorder, with renal or ureteric stones, cystitis and urethritis were also excluded.

Confounding variables and biasnesswas controlled by strictly following the inclusion and exclusion criteria. An approval from ethical and review committee was taken before the commencement of the study.

Statistical analysis: Data analyses were conducted by using Statistical Package for Social Science (SPSS) software version 21. The mean and standard deviation was calculated for a quantitative variable is age, gestational period. Frequency and percentages were computed for qualitative variables like multiple blood transfusions, bladder repair, patients shifted to ICU, cesarean hysterectomy and death. Stratification with respect to age, parity and gestational age was done. Post stratification chi-square test was applied. $P \leq 0.05$ was taken as significant.

Results

A total of 195 women with low lying placenta partially or completely covering the internal os were selected for this study. The mean age of the women was 30.77±2.42 years and average gestational age of the women was 34.64±2.53 weeks. There were 60.51% type IV placenta praevia and 39.49% type III placenta praevia.

The frequency of morbidly adherent placenta in obstetrics patients was observed in 89.74% (175/195) women. Regarding the maternal outcome of morbidly adherent placenta, 63.1% of the patients had obstetric hysterectomy, 11.3% required bladder repair, 40.5% shifted to ICU, 85.1% women need multiple transfusion and maternal mortality was observed in 17.4% patients as shown in table I.

Stratification analysis with respect to age, gestational age and parity was performed but significant effect of not observed in rate of morbidly adherent placenta in obstetrics patients. Similarly rate of obstetrical hysterectomy, bladder repair was significantly high in 31 to 35 years of age cases; while multiple blood transfusions need of ICU care and maternal death was not statistically significant difference. The maternal outcome of morbidly adherent placenta was also observed with respect to gestational age and parity but no significant difference was observed except maternal death was significantly high in those women who had 5 to 9 parity (p=0.01).

Table I: Maternal outcome of morbidly adherent placenta

Outcomes	Percentages
Blood transfusion	85.1%
obstetric hysterectomy	63.1%
Shifted to ICU	40.5%
Maternal mortality	17.4%
Bladder repair	11.3%

Discussion

Morbidly adherent placenta (MAP) is defined as the pathological adherence whichever in whole or in part of the placenta to the uterine wall.[1]Morbidly adherent placenta is a potentially life threatening obstetrical emergency with grave complications, as there is considerable morbidity and mortality associated with this condition due to its potential severe hemorrhage at the time of delivery.[11,12] The occurrence of placenta accreta in the published literature is variable between 0.001 and 0.9 % of deliveries. This variation could be due to the variable definition adopted for accreta (clinical or histopathological diagnosis) and the population studied. Nonetheless, incidence increased dramatically over the last three decades corresponding to the increase in cesarean sections rate.[1] Pregnant women with ≥ 2 prior caesarean sections and with anterior or central placenta praevia are at ~40% increased at a risk for placenta accreta.[13] A total of 195 women with low lying placenta partially or completely covering the internal os were selected for this study. Frequency of morbidly adherent placenta in obstetrics patients was observed in 89.74% (175/195) women.

There are certain risk factors identified for placenta accreta that include placenta praevia with or without previous caesarean section and additionally prior uterine surgery. Clark et al, determined an increased prevalence of placenta praevia after caesarean deliveries from 0.26% in females with a normal uterus to 0.65% after one and up to 10% after ≥ 4 caesarean deliveries.[14] Overall 75% of morbidly adherent placenta are associated with placenta praevia.[13] In our study out of 195 cases, there were 60.51% type IV placenta praevia and 39.49% type III placenta praevia.

Morbidly adherent placenta is associated with a maternal mortality reportedly as high as 10% and significant maternal morbidity, including massive hemorrhage, DIC, hysterectomy, bladder and ureteric trauma, ARDS and acute tubular necrosis.[15] In another study the maternal mortality reported is 20% and perinatal mortality of 30%.[16] In one meta-analysis of 54 cases of placenta percreta, there were 39 urologic complications including laceration of the bladder in 26%, urinary fistula in 13%, gross hematuria in 9%, a ureteral transaction in 6% and lastly small capacity bladder in 4%. Partial cystectomy was needed in 24 patients (44%). There were 3 maternal deaths (5.6%) and 14 fetal deaths (25.9%).[17] In this study of 195 women maternal outcome of morbidly adherent placenta, 63.1% of the patients had obstetric hysterectomy, 11.3% required bladder repair, 40.5% shifted to ICU, 85.1% women need multiple transfusion. Similarly, in one recent study from Taiwan, the author concluded low success rate for uterine preservation and a high maternal complication rate.[18] Shamshirsaz et al., from Houston concluded that by a specific multidisciplinary team approach an improved maternal outcome can be achieved, particularly in cases with more aggressive placental invasion (increta or percreta). [19]

In Pakistan, due to illiteracy, financial constraints, lack of timely consultations and failure to recognize the need for antenatal care, many patients with these solemn obstetric disorders are usually not antenatally booked or booked at small clinics/maternity homes where usually they are not diagnosed antenatally or diagnosis is much delayed until they suffer serious life-threatening hemorrhage. Midwives, general practitioners and birth attendants

offering obstetric services at small setups fail to diagnose and even anticipate these threatened obstetric complications.

A strict policy of ultrasound for placental localization should be in the antenatal visit as early as in 20 weeks to identify placenta praevia and early referral of those with previouscaesarean to the tertiary center will lead to appropriate timely diagnosis with imaging techniques. Considering the high morbidity and mortality linked with morbidly adherent placenta, a multidisciplinary approach is highly recommended.

The interventional radiologist, anesthetist, hematologist, neonatologist and an experienced consultant obstetrician play a critical role. Particular considerations should be given to the management of massive hemorrhage, including availability and judicious usage of pack red cells, platelets, fresh frozen plasma or cryoprecipitate transfusions.

Conclusion

The results of our study show that morbidity adherent placenta is a frequent problem associated with the previous caesarean section and placenta praevia. The most frequent maternal outcome of the morbidly adherent placenta are multiple transfusions and obstetric hysterectomy. To reduce the related morbidity and mortality, a national guideline should be developed regarding the organization of obstetric care, and timing of ultrasound Doppler examination and management interventions in such cases.

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