Original Article

Role of Timed Hysterectomy in Lowering Morbidity and Mortality of Morbidly Adherent Placenta

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ABSTRACT

OBJECTIVE: To describe the method of reducing morbidity and mortality among women with morbidly adherent placenta who ended up in hysterectomy.

METHODOLOGY: This retrospective descriptive case series study included twenty pregnant women with morbidly adherent placenta who needed hysterectomy and managed by team approach at Gynae unit I, Liaquat University of Medical and Health Sciences hospital Hyderabad from January 2019 to February 2020. Data was collected with respect to age, parity, gestational age, booking status, number of previous caesarean section, clinical presentation, time of diagnosis and maternal outcomes. Analysis was through SPSS program version 21. Frequency, percentages, means ± standard deviation was calculated for various variables.

RESULTS: The frequency of morbidly adherent placenta (MAP) was found in 1 in 308 births. The mean age was 29.55±4.62years. The mean parity and gestational age was3.1±1.58 and 33.2±5.02 weeks respectively. All had one or more than one previous cesarean section with 90% had associated placenta previa. Half of the cases presented with ante partum hemorrhage, and had placenta accrete. Emergency surgery was required in 65% of the cases. Hypovolemic shock (45%), bladder injury (20%) was observed as main complications. Mean blood loss was 1.72±0.75 liters; mean blood transfusion of 3.6±1.31 units with mean hospital stay of 7.70±4.47 days, there was 1mortality (5%) in the study.

CONCLUSION: Preoperative confirmed diagnosis, anticipation of high-volume blood transfusion, early recourse to hysterectomy by senior obstetrician, adapting team approach are methods of reducing morbidity and mortality in MAP.

KEYWORDS: Previous cesarean section, placenta Previa, morbidly adherent placenta, hysterectomy, blood Transfusion, maternal outcome

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INTRODUCTION

Morbidly adherent placenta (MAP) is one of the life-threatening and most feared obstetrical complication causing high maternal morbidity and mortality being currently recognized as one of the leading causes of obstetric hysterectomy[1].

MAP grows deep into wall of uterus and cannot be separated. It occurs as a consequence of partial or complete absence of decidua basilis and defective formation of the nitabuch fibrinoid layer which limit the penetration of trophoblastic villi, thereby allowing placental invasion into substance of uterus. There are three grades of this type of abnormal attachment.

I. Placenta Accreta: (82%)- villi are attached to the myometrium,
II. Placenta Increta (12%) villi invade within myometrium
III. Placenta Percreta (6%) villi fully penetrate the myometrium and may breach the serosa and invade the surrounding structure usually bladder[2].

The incidence is on rise with 10-fold over increase in the past 50 years and seems parallel the increasing caesarean delivery rate. Estimated was as 1 in 2500 in 1980 to 1 in 533 deliveries in 2012[3].

There are multiple risk factors that can lead its development and among them the most recognized risk factors is the combination of placenta previa with prior cesarean delivery. In such cases the risk of adherent placenta has been reported to increase from 3% with previous 1 cesarean section to as high as 67% after fifth or more caesarean[4].

Clinical presentation of MAP in antenatal period varies from asymptomatic to antepartum haemorrhage, whereas during intra partum period there can be retained placenta associated with uterine rupture and intractable postpartum haemorrhage, while attempting to deliver placenta. The condition demands massive blood and blood products transfusion to manage hemorrhage and disseminated intravascular coagulation (DIC). Obstetrical hysterectomy in such cases may be often technically difficult due to previous scars obliterating uterovesical pouch and with dense adhesions of lower uterine segment to bladder base. Such critical patients then become a potential candidate for surgical injury to bladder, anesthesia complication, need for intensive care (ICU) and

mechanical ventilation. More over in post-operative period risks include re exploration due to repeated hemorrhage, renal failure, postoperative infection, thromboembolism and maternal mortality as high as 7-10% [5-8].

The spectrum of complications increases when such cases dealt in emergency without proper planning and multidisciplinary liaison. The rate of success depends upon antenatal assessment, optimizing health, preoperative preparation and team management at surgery.

Liaquat University Hospital is one of the largest tertiary care hospitals which receive large number of patients from different health care facilities with previous caesarean section and placenta praevia. The current study was focused on importance of antenatal confirmed diagnosis so that optimal arrangement can timely be planned for best maternal outcome.

METHODOLOGY

This retrospective descriptive case series study was conducted at Gynae Unit 1-Liaquat University of Medical and Health Sciences Hospital Hyderabad from January 2019 to February 2020. The data was collected from hospital record.

All pregnant woman irrespective of age, gravidity, parity with gestational age >20 weeks (on early dating scan or last menstrual period) and previous history of caesarean section and low lying placenta/ praevia who were diagnosed with MAP by antenatal imaging (Ultrasound or Doppler) or on the basis of surgical findings at the time of operation where it was found impossible to remove partial or complete removal of the placenta from its bed, or there was deep encroachment of placenta to serosa and urinary bladder, these cases were then underwent hysterectomy.

Pregnant woman with normally sited placenta, with placenta praevia, placental abruption and with other comorbid were excluded.

An approval from Ethical and Review Committee was taken. Verbal consent was obtained from female enrolled in study or from their attendants.

Data was analyzed with respect to age, parity, booking status, gestational age, any previous surgery, clinical presentation, time of diagnosis, timing of surgery (elective or emergency) and various maternal outcomes. (Shock, blood transfusion, blood Loss, ICU admission, DIC, bladder Injury, hospital Stay, post-operative fever, re exploration and maternal death). Hysterectomy performed by senior obstetrician in all cases.

The data was entered and analyzed by using statistical package for social sciences (SPSS) software version 21. Mean and standard deviation were calculated for quantitative variables, frequency and percentages were for qualitative variables.

RESULTS

During the study period twenty (20) patients under went hysterectomy for morbidly adherent placenta.

Mean age of women was 29.55±4.62 years. The mean parity was 3.1±1.58 and gestational age was 33.2±5.02 weeks, 80% (16) were un-booked. All had previous deliveries by cesarean section (C/S). Seven (35%) had1 previous cesarean section, five (25%) had 2 previous cesarean section, three (15%) had 3 Previous cesarean section, three (15%) had 4 Previous cesarean section and 2(10%) with both CS and dilatation and curettage (D&C). Coexistent placenta praevia was diagnosed in 90% (18) of the patients. (Table-I)

Diagnosis of adherent placenta was made preoperatively by ultrasound and color Doppler in15 (75%), intraoperative in 3 (15%). Placenta accerta was found in 10 (50%) placenta increta in 5 (25%) and placenta percreta in 5 (25%). Only 7 (35%) patients were taken up for surgery electively, all others were operated on emergency basis. (Table-II)

Hypovolemic shock developed in 9 (45%), bladder injury in 4 (20%), ICU transfer, disseminated intravascular coagulation, reoperation each in one patient (5%), maternal death due to MAP was 5%.

Mean Blood loss in patients with MAP was 1.72±0.75 liters, with mean blood units' transfusion of 3.6±1.31 units, and mean Fresh Frozen Plasma Transfusion of 5.2±4.15 units and mean hospital stay was 7.70±4.47 days. (Table-III)

TABLE I: DEMOGRAPHIC CHARACTERISTICS OF PATIENTS WITH MAP ENDED IN HYSTERECTOMY

Variables	N= (%)
Mean Age (year)	29.55±4.62 (22-40)
Mean Parity	3.1±1.58 (1-6)
Gestational Age (weeks)	33.2±5.02 (22-41)
Booked	4 (20%)
Unbooked	16 (80%)
Surgery	
Previous 1 Caesarean Section	7 (35%)
Previous 2 Caesarean Section	5 (25%)
Previous 3 Caesarean Section	3 (15%)
Previous 4 Caesarean Section	3 (15%)
Previous C/S + curettage (both C/S & DEC)	2 (10%)
Placenta Praevia	18 (90%)

TABLE-II: DIAGNOSIS, PRESENTATION, MAP TYPES AND SURGERY

Time of Diagnosis	No of patients	Percentage
Preoperative	15	75
Intraoperative	3	15
Post delivery	2	10
Clinical presentation		
Antepartum haemorrhage (APH)	10	50
Elective Surgery	7	35
Retained Placenta	2	10
Labor Pain	1	5
Types of MAP		
Accreta	10	50
Increta	5	25
Percreta	5	25
Procedure		
Emergency	13	65
Elective	7	35

TABLE III: MATERNAL OUTCOME (n=20)

Variables	Number	Percentage
Shock	9	45
Bladder Injury	4	20
ICU Transfer	1	5
Disseminated intravascular coagulation	1	5
Reoperation	1	5
Post-Operative Fever	3	15
Death	1	5
Blood Loss (Mean ± SD)	1.72±0.75 (1-4 Liters)	
Blood Transfusion (Mean ± SD)	3.6±1.31 (2-6 Units)	
Fresh Frozen Plasma Transfusion (Mean ± SD)	5.2±4.15 (2-19) (Units)	
Hospital Stay (Mean ± SD)	7.70±4.47 (1-22) (Days)	

DISCUSSION

The current study found the frequency of MAP as 1 in 308 as total number of deliveries during study period were 6168, among them twenty women were diagnosed with MAP who ended up in hysterectomy. Worldwide researchers have reported incidence from 1 in 2699, 1in 481 to 1 in 381 [5,6,9]. The increasing incidence in our study is scary to alarm the obstetrician about this grave complication to be anticipated while dealing scared uterus and placenta praevia. The high frequency may be due to more referrals of such cases in this tertiary care hospital never the less rising trend of caesarean deliveries has led to rising number of MAP.

Mean age and parity appears to be similar as in many other studies with a minor difference, and does not appear to directly influence the maternal outcome as in this study[10-13].

All women with MAP had one or more caesarean section and 90% with associated placenta praevia. A study conducted in Dhaka reported 90.91% of patients with previous cesarean section and coexisting placenta praevia[6]. Sadia Jalil reported 93% of placenta previa with placenta accreta in their study[13]. In order to minimize risk of MAP following cesarean section efforts are needed to focus on reducing the primary as well as repeat cesarean section.

Literature reveals that frequency of MAP is related with number of cesarean section with risk reaching up to 67% in patients having 5th cesarean section[14], however our results do not correlate with their finding, rather we found highest frequency of MAP in patients with previous 1 and 2 cesarean section. This is astonishing as all these women were young and ended up in hysterectomy. The possible explanation may be due to common trend of having primary cesarean section for trivial reason in local maternity clinics by junior surgeon, often having sub optimal skills under unhygienic condition, posing them high risk of endometritis leading to MAP while the patients having increased number of cesarean section are frequently reported for surgery at tertiary care due to fear of surgery related complication.

Among MAP cases, Accreta is the most common form and antepartum hemorrhage was the most common clinical presentation, similar results were observed from study in Karachi[10].

Majority of patients received unbooked presented in emergency. The quality of care of these high risks get suboptimal due to presentation in emergency with already compromised condition. This hemodynamic instability, lack of knowledge about plan / hysterectomy, unavailability of attendants to consent and arrange blood and blood products, arrangements of operation theatre and ICU make the surgical intervention of patients often delayed leading to worsening of condition and hence increased morbidity and mortality. Fortunately most of the patients in our study managed properly though majority was un booked and operated in emergency.

Hypovolemic shock was observed in almost half of the cases with 1/5th cases had iatrogenic bladder injury while the ICU transfer and reoperation was needed in minimum no of cases. Nevertheless majority of the patients had prolonged hospital stay. A study from India reveals higher ICU admission in 16 (44.4%),

bladder injury in 10 (27.7%), prolong hospital stay in 34 (94.4%) cases[5]. Two other local studies in Pakistan also reveals higher ICU admission in MAP cases[15,16].

The attempt of partial or total placental tissue removal prior to hysterectomy has been found to be associated with doubling the risk of operative blood loss[2]. So, the best management option for such cases is to leave the placenta in situ and to proceed to hysterectomy. The conservative approach for women already bleeding has been found unsuccessful with delaying valuable time[17].

The mean blood loss of our patients was found <2 liters, however massive blood loss in adherent placenta was a prominent feature in study from Lahore[18]. We found a very low risk of DIC in comparison to study done by Shujata Sharma from India (8.3%) [5].

Present study shows a lesser number of ICU admissions, ventilator support, DIC, blood transfusion, due to anticipation and management of massive hemorrhage and timely and relatively easy availability of blood and its products from newly established Red Blood Cell (RBC) / INDUS bank in the hospital premises and early recourse to hysterectomy by senior surgeon.

Overall mortality in placenta accrete quoted in literature is 7-10%, and even up to 30%.[9,15]. Out of our twenty (20) women, unfortunately one (5%) died. She was a case of previous 1 caesarean section with history of home delivery with retained placenta, and by the time she reaches emergency room, was in a state of irreversible shock. This needs the importance of good antenatal care in particular high risk patients to plan the timely management.

CONCLUSION

The study showed that timely decision to hysterectomy saves the precious maternal lives. More over the services of provision of blood and blood products need to be extended owing to increasing number of such obstetrical complications. The efforts to reduce the primary caesarean section should be made at all levels to avoid the disastrous consequences.

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AUTHOR CONTRIBUTIONS

Shaikh NB: Researcher, data collection, manuscript writing
Yousfani S: Proof reading, approval of final draft
Hassan N: Data analysis, results compilation
Abbas S: Literature search, data collection
Shaikh F: Authentication of references, proof reading

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