



Original Article

REVIEW OF CASES OF MORBIDLY ADHARENT PLACENTA IN A TERTIARY CARE UNIT

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ABSTRACT

Background: Morbidly adherent placenta (MAP) along with its variants is one of most dangerous obstetric emergency associated with high maternal morbidity and mortality. **Objective:** Aim of this study was to determine frequency and complications of MAP in our local population presenting to a tertiary care unit **Methods:** Retrospective analysis of case records of all the women diagnosed as MAP was performed. Relevant details were sought from medical record. Frequency of MAP was calculated. Maternal morbidity including blood loss , need of transfusion. Hysterectomy, surgical complications, ICU admission and maternal mortality were also recorded. **Results:** During study period 23 cases of MAP were identified. In this study frequency of MAP was 1 in 273.56 pregnancies (0.36%) and 1 in 118.82 caesarean sections (0.84%). Majority of patients (16) were diagnosed as placenta accrete, others included 3 cases of placenta increta and 4 cases of placenta percreta. Blood loss was more than 2 litres in 21 patients. All patients required more than 4 units of blood transfusion. Obstetrical hysterectomy was required in 17 patients due to uncontrollable haemorrhage. Bladder injury was encountered in 3 patients and two patients required internal iliac ligation and uterovaginal packing each. ICU admission was needed in 17 patients. During study period 2 patients with placenta percreta were expired. **Conclusion:** Frequency of MAP is increasing in our local population probably due to increasing caesarean section rate. The associated significant maternal morbidity and mortality warrants need to reduce caesarean rate and early diagnosis in high risk patients.

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INTRODUCTION

Morbidly adherent placenta (MAP) is one of the most ominous obstetric

condition leading to high maternal morbidity and mortality. It is defined by abnormal trophoblastic invasion of myometrium and potential extension to surrounding structures⁽¹⁾. It is diagnosed when placenta does not separate from myometrium completely or partially after delivery and placental villi typically invade the myometrium. It is classified into Accreta (placental villi extending to decidua), Increta (villi extending to myometrium) and Percreta (villi extending to or beyond serosa). Placenta percreta is most serious form of MAP.

By the amount of placental involvement three types are described namely focal adherence when only part of cotyledon is involved, partial adherence when more than one cotyledon is involved and total adherence when whole placenta is adherent.

The incidence of MAP previously thought to be uncommon, is rising in contemporary obstetric practice. The incidence of MAP is increased from 1 in 2510 in 1994 to 1 in 533 in 2002⁽²⁾. High caesarean section rate and short interval between caesarean and conception are major contributing factors. The exact etiology of MAP is not known but it is postulated that damage to decidua allows placental invasion into myometrium. It usually occurs when the decidua is deficient and is commonly associated with placenta previa, caesarean section, myomectomy and uterine curettage. The diagnosis of MAP includes high index of suspicion in placenta previa especially in the presence of previous caesarean or other risk factors. Management of adherent placenta is a great challenge in obstetrics. Attempt to

remove placenta may result in catastrophic haemorrhage requiring multiple transfusions, disseminated intravascular coagulation and sometimes may result in maternal death. Successful management of this condition requires early diagnosis and referral to a tertiary care centre where a multidisciplinary team including experienced obstetrician, anaesthetist, haematologist along with adequate blood products are available. This may reduce morbidity and mortality associated with MAP. If diagnosed at the time of delivery it is likely to result in more complications, therefore it is very important to anticipate and diagnose MAP in antenatal period. Ultrasound and Doppler has brought revolution in the diagnosis and management of these patients. Doppler has sensitivity of 84-100% and specificity of 92-96%. It is diagnosed by presence of placental lacunae on Doppler giving placenta a moth eaten appearance, loss of chorio-decidual interface and interruption of bladder border. Once diagnosed it is usually treated by hysterectomy. Major risk factor for MAP is previous caesarean section. Placenta previa itself increases the risk of accreta due to implantation over a highly vascular and poorly contractile lower segment. An existing scar with possibility of fibrosis in the presence of placenta previa further enhances the risk of placental adherence. Therefore all women with history of previous caesarean and low lying or anterior placenta in current pregnancy are at increased risk of MAP. Antenatal diagnosis is very important as it gives time to involve a multidisciplinary team to decide the best possible

TABLE 1.
Demographic features of patients with MAP (N=23)

Demographic features	Median (Range)
Maternal age	30 (25-40)
Parity	3 (1-6)
Gestaional age	35 (25-38)

TABLE 2.
Degree of adherence

	Frequency	%
Accrete	16	69.6
Increta	3	13.0
Percreta	4	17.4
Total	23	100.0

TABLE 3
Maternal outcome measures in patients with MAP

	Accrete n= 17	Increta n= 3	Percreta n= 4
Intraoperative blood loss			
<2 litres	2	-	-
2-4 litres	13	2	2
>4litres	1	1	2
Blood transfusion			
<4PCV	2	-	-
4-8PCV	10	2	-
>8PCV	4	1	4
Hysterectomy	10	3	4
Additional surgery			
Bladder repair	1	-	1
Internal iliac ligation	1	-	2
Uterovaginal packing	2	-	-
ICU admission	10	3	4
Maternal death	-	-	2

management protocol to optimize maternal outcome. Studies have shown that antenatal diagnosis is associated with reduced risk of haemorrhage and low rate of blood transfusion^(3, 4, 5). Like other parts of the world caesarean section rate is constantly rising in our country, therefore it is expected that rate of MAP would also be rising. As majority of our patients are unbooked and anaemic, the serious complications are also expected. The aim of this study was to review cases of MAP diagnosed in the study period to know incidence in our set up and to determine risk factors and complications associated with MAP so that we can plan for future strategies for handling such life threatening situations as and when required.

METHODS

This retrospective study was conducted at department of obstetrics and gynaecology civil hospital Karachi. A retrospective analysis of all women diagnosed as MAP from July 2014 to December 2015 was performed. MAP was defined as heavy bleeding from placental site after forced/piecemeal removal of placenta at

caesarean section or when no cleavage plane and removal of placenta partially or totally difficult/impossible.

The medical record of all the women diagnosed to have MAP during study period was reviewed. Demographic features including age, parity, gestational age, risk factors (C/S, myomectomy, curettage), ultrasound and Doppler findings were noted. Surgical notes were reviewed for type of surgery, placental location, degree of adherence, estimated blood loss and transfusion required during surgery. Post operative ICU admission and maternal outcome was also recorded. Placenta accrete, increta and percreta were diagnosed when placenta was attached to decidua, invading myometrium and invasion up to or beyond uterine serosa respectively. All information was noted on a predesigned questionnaire and later on data entered on SPSS Version 16 and analysed. For categoric variables, descriptive statistics was used and frequency of quantitative variables was determined. Mean and SD were calculated for numerical data and percentages for categorical data.

RESULTS

During study period 6292 patients were delivered including 2733 caesarean sections. Among these patients 23 cases of MAP were diagnosed. Mean age of patients was 30 years. Mean gestational age was 35 weeks and mean parity was 3 in these women (table 1). The frequency of MAP was one in 273.56 deliveries (0.36%) and one in 118.82 (0.84%) caesarean section. All patients with MAP had previous one or more caesarean section and 5 of them also had history of uterine curettage. Ultrasound report showed placenta previa type III in 3 and type IV in 19 patients while one ultrasound was showing minor degree of previa. Doppler was available in 17 patients showing increased vascularity and lacunar flow in 13 and myometrial invasion with bladder involvement in 4 patients. All except one patient presented antenatally. During surgery placenta accreta was diagnosed in 16 patients. Placenta was invading myometrium (increta) in 3 patients and reaching to serosa with bladder involvement (percreta) in 4 patients (table 2). Blood loss was 2-4 litres in 17 patients and > 4 litres in 4 patients only two patients had blood loss < 2 litres. All patients required more than two units of blood transfusion. Majority of patients (17) underwent caesarean hysterectomy due to intractable haemorrhage. Placental removal was performed in 5 patients all having focal adherence of placenta, while one patient had manual removal of placenta after vaginal delivery (VBAC). She also received single dose of methotrexate due to retained placental pieces. Three patients diagnosed as percreta required additional surgery including bladder repair (1), internal iliac ligation (2). In one patient with accreta bladder repair was performed after surgical trauma and uterovaginal packing was done in two patients after conservative surgery (maternal outcome table 3).

DISCUSSION

Morbidly adherent placenta (MAP) is a life threatening condition associated with high maternal morbidity and mortality. The incidence of MAP is constantly rising due to increasing number of caesarean section⁽⁶⁾. The incidence of accreta in literature varies between .001% and 0.9% of deliveries and increased in last three decades due to increasing caesarean section rate⁽⁷⁾. In a local study the incidence was one in 274.8 deliveries⁽⁸⁾. In our study frequency of MAP was one in 273.56 deliveries (0.36%) which is comparable with other studies. In a study by Jwarih E et al it was found that

placenta accreta was most common form of adherent placenta accounting for 75-78% cases followed by increta in 17% and percreta in 5-7% women⁽⁹⁾. An another study by Grace et al which included 27 cases of adherent placenta, reported accrete in 12, increta in one and percreta in 14 patients⁽¹⁰⁾. In our study 16 patients were diagnosed as accreta, only one patient of increta and 3 patients with percreta were diagnosed. Placenta previa and previous caesarean section are two most significant risk factors for MAP. Risk increases with increasing number of caesarean. Miller et al reported 14% risk of MAP in women with placenta previa and previous caesarean section⁽¹¹⁾. Some studies have reported a very high risk (39%) of accreta after two caesarean⁽¹²⁻¹⁴⁾. History of curettage and multiparity are also reported as other important risk factors in a study conducted by miler et al. In our series all patients had history of previous one or more caesarean section while 5 patients also gave history of curettage. Major degree of placenta previa was diagnosed in 19 patients and low lying placenta was diagnosed in other 4 patients. Majority of patients (14) in our study had parity 3 and more. Doppler play an important role in diagnosis of MAP in high risk patients it particularly determines blood flow into bladder interface^(15,16). In our study Doppler was available in 17 patients showing lacunar flow in 13 and bladder invasion in 4 patients. MAP is associated with significant maternal morbidity including extensive surgery, haemorrhage, need of multiple blood transfusions, hysterectomy and injury to bladder and ureters. Grace et al reported that half of the women suffered from surgical complications mostly from bladder injury⁽¹⁰⁾. In our study bladder injury was encountered in 4 patients. Three of them were having placenta percreta with involvement of bladder and one had accreta.

Intra operative haemorrhage remains a considerable challenge in management of MAP. Blood loss is expected to be more than a routine caesarean section. Oyelese Y et al reported blood loss of 2-5 litres and requirement of multiple transfusions during surgery⁽¹⁷⁾. Other studies have also shown severe intraoperative haemorrhage and need of multiple transfusions during surgery⁽¹⁸⁾. In our study blood loss was <4 litres in 2, 4-8 litres in 12 and > 8 litres in 9 patients. All patients required multiple transfusions including all blood products. Hysterectomy has traditionally been used in management of MAP but recently there has been a trend towards conservative management and fertility preservation⁽¹⁹⁾.

21). In our study 5 patients underwent conservative surgery and hysterectomy was performed in 17 patients. Manual removal of placenta was carried out in one patient who had vaginal birth after caesarean section.

MAP is associated with significant maternal mortality. Studies have shown mortality rate of 7-10% (22). In a study by Richa aggarwal et al mortality was even high (30%). In our study two women were expired with a mortality rate of 8.69% which is comparable with other international studies. Both these patients were diagnosed as percreta and died due to massive uncontrollable haemorrhage. This reflects that mortality is directly proportional to the severity of the condition and raises the importance of antenatal diagnosis and planned delivery of such cases.

CONCLUSION

The incidence of MAP is increasing in our population. As previous caesarean section and placenta previa are important risk factors, so there is need to keep primary caesarean section rates down.

Counselling and monitoring of high risk patients should start in early pregnancy. Standard operative protocols should be made and followed for this life threatening condition as and when required. One should resort to hysterectomy sooner rather than later. Ample quantity of blood products and multidisciplinary approach may reduce maternal morbidity and mortality in these patients. The decision for hysterectomy or conservative management needs to be individualized. Good anticipation and timely decision is the key to success in this life threatening condition.

AUTHORS INPUT

FD: Main resesarcher and Manuscript writer, **SH:** Data Collection , **SM:** Data analysis, **AK:** Supervise the study and Manuscript writing

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