

Frequency of Hysterectomy in Morbidly Adherent Placenta in Post Cesarean Section Patients: A Cross Sectional Study

Asma Batool, Nabila Amin, Tehreem Yazdani*

Department of Obstetrics and Gynecology, Pak Emirates Military Hospital/National University of Medical Sciences (NUMS), Rawalpindi Pakistan,

*Department of Obstetrics and Gynecology, Combined Military Hospital, Okara/ National University of Medical Sciences (NUMS) Pakistan

ABSTRACT

Objective: To determine the frequency of hysterectomy in morbidly adherent placenta in post-cesarean section patients.

Study Design: A cross-sectional study.

Place and Duration of Study: Department of Obstetrics and Gynecology, Pak Emirates Military Hospital, Rawalpindi Pakistan, from Sep 2019 to Apr 2020

Methodology: A Hospital based study was carried out at the Obstetrics and Gynecology department of Pak Emirates Military Hospital, Rawalpindi which is one of the top hospitals in the city. The hospital provides services for millions of people in the surrounding. The Department of Obstetrics and Gynecology have well facilitated units and labor wards. A total of 210 participants were selected for the study. The sample size was calculated by using WHO calculator by taking 95% confidence interval, the anticipated proportion taken 7%, and the required absolute proportion was taken 3.5

Results: The Frequency of Hysterectomy in morbidly adherent placenta in post Cesarean section women was reported 166(79.04%), out of the remaining 44(20.96%) patients the Triple-P was reported in 21(10%) patients and B-Lynch done in 15(7.14%) patients and 8(3.8%) were reported with Balloon Tamponade.

Conclusion: The frequency of hysterectomy in MAP is high. Advance antenatal diagnosis of MAP by ultrasound, planned hysterectomy and Multidisciplinary approach maximizes patient's safety and less ICU stay. This study is about adherent placenta post cesarean and its possible relationship to hysterectomy. Attention is required to be given to conservative methods to protect fertility.

Keywords: Cesarean section, Hysterectomy, Morbidly adherent placenta.

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INTRODUCTION

Hysterectomy is the surgical procedure in which the uterus is removed. It is the major surgical procedure in the field of gynecology.¹ It can be done in three ways namely; TAH (Abdominal route), VH (Vaginal route) and combined approach (laparoscopic assisted vaginal route). However, the less invasive technique of vaginal hysterectomy is highly preferred among different procedures.²

Hysterectomy can be "total" or "subtotal" depending upon the condition for which it is performed. The common indications of Hysterectomy includes; polymenorrhea, menorrhagia, uterine descensus and prolapse, uterine pain, bleeding, uterine increase in size, uterine Leiomyomas, uterine fibroids, obstetric catastrophes and septic abortion etc. other less common reasons for improving quality of life of patient and decreasing the prevalence of morbidity includes; Pelvic Inflammatory disease, Ectopic pregnancy, Pelvic

Endometriosis, cervical cancer, carcinoma in situ, Endometrial adenocarcinoma and sarcoma etc.^{3,4}

Abnormal Implantation of the Placenta in uterine walls is the condition known as Morbidly Adherent Placenta. It includes Placenta accreta, increta and percreta. It is mostly reported after history of placental previa and C-section.⁵ One in every 333 deliveries is presenting with this condition nowadays.⁶ The irreversible damages from Abnormal Placentation that includes morbidity and mortality in women can be prevented by a holistic approach of treatment through antenatal management (before delivery), surgical management (Obstetric hysterectomy), conservative management (leaving placenta in situ to save fertility) and postoperative management (postpartum uterotonics prophylactically).⁷

The prevalence of hysterectomy varies across and within different countries. The prevalence was found out to be 18.9% to 31.4% in South-Australia.⁸ In US the incidence of hysterectomy was 510 per 100,000 in 2004.⁹ In Germany from 2005-2006 the hysterectomy rates were 362.9 per 100,000 per year.¹⁰ Another

Correspondence: Dr Asma Batool, Department of Obs & Gyne, Pak Emirates Military Hospital, Rawalpindi Pakistan

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German study showed the prevalence to be 17.54% in 2013.¹¹

In Asia, India has shown the incidence of Hysterectomy to be 20.7 per 1000 women per year in just a city of Gujarat.¹² National level prevalence of hysterectomy in India was observed to be 6%.¹³ On the other hand, rural china had a hysterectomy prevalence of only 3.31%.¹⁴

The incidence of Hysterectomy in Pakistan was 10.52 in every 1000 deliveries. The percentage of death accounts for 10.5% women following hysterectomy from 2000-2010.¹⁵ Ruling out the reasons for increased level of hysterectomy and decreasing the morbidity in women requires strong authentic data backing in order to improve quality of Obstetric services and quality of life of women on a large scale. This study aims to assess the frequency of hysterectomy resulting from Morbidly Adherent Placenta in patients who have undergone C-section in the past.

METHODOLOGY

A Hospital based cross-sectional study of 8 months, from September 2019 to April 2020 was carried out at the Obstetrics and Gynecology department of the Pak Emirates Military Hospital, Rawalpindi Pakistan, which is one of the top hospitals in the city. The hospital provides services for millions of people in the surrounding. The Department of Obstetrics and Gynecology have well facilitated units and labor wards.

A total of 210 participants were selected for the study. The sample size was calculated by using WHO calculator by taking 95% confidence interval, the anticipated proportion taken 7%,¹⁶ and the required absolute proportion was taken 3.5.

Inclusion Criteria: Reproductive age women (age from 18 to 42) and parity from 1-3, the pregnancy was confirmed by Ultrasound and last menstrual period (LMP) between 36-42 weeks pregnant, the woman had alive singleton fetus and history of previous surgery i.e. underwent through cesarean section were included to the study. Non probability consecutive sampling technique was used for data collection.

Exclusion Criteria: The patient with Placenta abruptio (like placenta Separation from its attachment to the uterus wall before delivery with the history of bleeding per vagina and confirmed by Ultrasound), primigravida, had PID history, D & C and IUCD insertion and unwillingness of the patient or by the husband/Attendant were excluded from the study.

The patients were enrolled who visited for antenatal care to the obstetrical outpatient department with pregnancy, a written inform consent was signed from every individual of the study. The Doppler ultrasound was performed for every woman. A pre-designed Performa which contain study variables was filled by the researcher for each participant. The variables of the Performa were, socio-demographic and background, status of the patient booking, last child birth period, Gestation age in weeks, type of MAP, medical history and blood test details and mainly the procedure either one out of "Hysterectomy, B-Lynch, Balloon Tamponade, Triple P" this Performa also contained the variables to report the complications occurred and protocols given after the procedure.

Doppler Ultrasound of every study participant was performed for the detection of morbidly adherent placenta and its type and the findings were noted over the designed Performa. The data was collected by the permission of ethical committee of the institute, all the collected data was entered and analyzed by SPSS version 21. The mean and standard deviation (Mean±SD) was calculated for the descriptive data and percentages/frequencies are reported accordingly.

RESULTS

The data of this cross-sectional study was collected from 210 women with 100% response rate. The mean age of women was reported 32.63±4.35 years. According to the age distribution, majority of women 113(53.8%) were found in age group 30-35 years. The reported mean gestation age at delivery time was found 38.24±3.74 weeks. The history of previous deliveries shown that most of the patients 182(86.7%) reported were have one Cesarean Section done, 22 (10.47%) women reported two C-Sections while only 6 (2.8%) women were found with already had done three C-Sections.

The mean gestation age of women with MAP was found 36.58±3.16 weeks. The group wise details with percentages are given in Table-I below.

Table-I: Gestation age of the participants

Age of Gestation (Groups)	Frequency	Percent (%)
34wks to 36wks	116	55.23
37wks to 39wks	62	29.5
40wks and above	32	15.23

Types of MAP: Three types of MAP, Placenta Accreta, Placenta Increta and Placenta Percreta were noted with their frequency and percentage in the study the details are explained in the following Figure-1.

Frequency of Hysterectomy in Morbidly Adherent Placenta

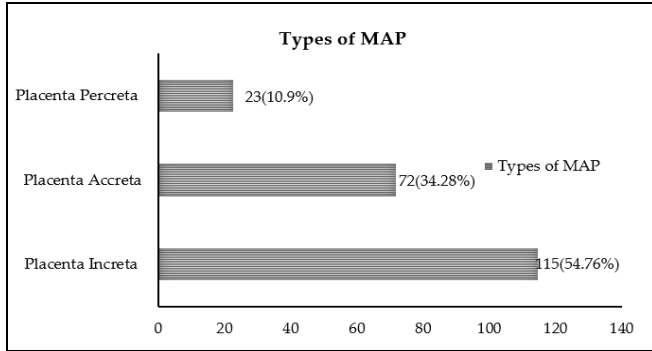


Figure-1: Frequency and percentages of the types of MAP presented in the study

The Frequency of Hysterectomy in morbid adherent placenta of post Cesarean section women was reported 166(79.04%), out of the remaining 44 patients the Triple P was reported in 21(10%) patients and B-Lynch done in 15(7.14%) patients and 8(3.8%) were reported with Balloon Tamponade. The details of percentages are shown in Graph-2 below.

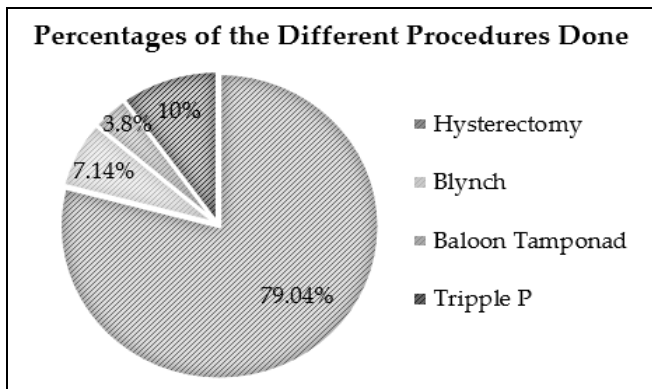


Figure-2: Percentage of the procedures performed in the patients

The most commonly reported complication was bleeding which required massive blood transfusion, it is reported in 78.6% cases, 40% required >10 RCC, 12 FFPs, 12 platelets, bladder repair was performed in 12.74%, and no Renal Dysfunction reported and no patient reported with such serious problem. All patients were transferred to Intensive Care Unit for first Postoperative Day Care. Zero mortality was reported in the study participants.

The details of complications and some protocols are briefly explained in Table-II.

DISCUSSION

A cross sectional study was done in tertiary hospital of Rawalpindi to rule out the frequency of hysterectomy in patients with diagnosed Morbidly Adherent Placenta (MAP). A total of 210 women

Table-II: Details of different complications reported in the study and some protocols

Characteristics/ Complication	Frequency	Percent (%)
Diagnosis		
Ultrasound	194	92.3
MRI	11	5.2
On-table	05	2.3
Internal Iliac artery Ligation		
NO	19	9.04
Unilateral	87	41.4
Bilateral	104	49.5
Uterine Artery Ligation		
Yes	201	95.7
No	09	4.2
Other Complications		
Nil	112	53.3
DIC	01	0.4
Anemia	91	43.3
Febrile illness	02	01
Post-operative infection	04	1.9

participated in the study in which mostly were in the age group 30 to 35 years.

A large proportion of 79.04% (n=166) patients undergone the surgical procedure of hysterectomy. This is may be due to the reason that the best way to protect the patient's life in MAP is hysterectomy followed by less conservative procedures but in very selective cases. This is also supported by Rabia *et al.* where hysterectomy is reported to be the best procedure for successful management of MAP with minimal damage to the mother and the fetus.¹⁷ Nighat *et al.* in the same study population also reported well planned total abdominal hysterectomy as the best option for reducing maternal mortality and morbidity.¹⁸ In this way, the global village is trying to achieve the target of SDG by dropping the MMR to <70 maternal deaths per 100 000 live births by 2030. Moreover, this will also contribute in supplementary national target of limiting and keeping the MMR to 140.¹⁹ This all is only possible with monitoring and planning the successful management of critical conditions throughout the journey of child's birth.

All the women with MAP were having history of C-section in the current study. Previous Cesarean section and placenta previa are commonly identified risk factors for Abnormal Placentation. The percentage of morbid adherence of Placenta increases with the history of Cesarean sections in the maternal life-time.^{20,21} Most of the patients n=182(86.6%) in the current study had previous history of one C-section. Only 6 women had three previous Cesarean deliveries. This difference in number of Cesarean deliveries also indicates that MAP is not dependent on the number of

Cesarean deliveries in the current study. However, Gelany *et al.* had reported that the risk of placenta accreta increases alone from 24-67% after one to four Cesarean Sections respectively.²²

Preterm baby and life-threatening hemorrhage are the serious complication of the condition of abnormal placentation.²³ This is serious condition and many studies have reported maternal deaths due to this.^{18,24} However, no death was reported in the current study. The possible reason may be early diagnosis and following available, accessible, acceptable, quality of services (AAAQ) strategy in first line management of complication.¹⁹ Most of the patients in the current study faced great loss of blood requiring transfusion in 78.6% cases. This is in agreement with other studies where hemorrhage following blood transfusion was needed.^{20,22,25}

CONCLUSION

A large proportion of MAP cases are successfully managed by hysterectomy. Low-middle income country like Pakistan is managing this life-threatening condition by performing hysterectomy. Detailed work is required on conservative methods of managing MAP in which fertility can be protected.

Conflict of Interest: None.

Auhtor's Contribution

Following authors have made substantial contributions to the manuscript as under:

AB: Data analysis, drafting the manuscript, critical review, approval of the final version to be published.

NA: Data acquisition, critical review, approval of the final version to be published.

TY: Data acquisition, conception, study design, data interpretation, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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