DOI: https://doi.org/10.53350/pjmhs20231711366

**ORIGINAL ARTICLE**

# Comparative Outcome of Cesarean Hysterectomy Versus Myometrial Resection among Patients of Morbid Adherent Placenta

SHAZIA ASHRAF[1], HINA KHALIL[2], AFSHAN BATOOL[3], ZAIN-UL-ABIDEEN[4]
[1]*Professor, Department of Obstetrics & Gynaecology, Gujranwala Medical College, Gujranwala*
[2]*Senior Registrar, Department of Obstetrics & Gynaecology, Lady Dufferin Hospital, Karachi*
[3]*Assistant Professor, Department of Gynaecology & Obstetrician, Mother & Child Health Centre, Pakistan Institute of Medical Sciences, Islamabad*
[4]*4th Year MBBS Student, Ghulam Muhammad Mahar Medical College, Sukkur*
*Correspondence to: Shazia Ashraf, Email: shaziaashraf786@hotmail.com, Cell: 0322-7922221*

## ABSTRACT

**Background:** Due to various aspects related to the complications observed in the morbid adherent placenta, there are different ways to treat the effective condition including surgical techniques like myometrial resection or also known as local resection or cesarean hysterectomy.

**Objective:** To compare the outcome of cesarean hysterectomy versus myometrial resection among patients of morbid adherent placenta.

**Study Design:** Prospective study.

**Place and Duration of Study:** Department of Obstetrics & Gynaecology, Gujranwala Medical College, Gujranwala from 1st January 2023 to 30th June 2023.

**Methodology:** On hundred cases of pregnant women admitted with ultrasonographic diagnosis of morbid adherent placenta, requiring hysterectomy and age between 18-45 years were included. The patients were divided into two groups. Group 1 was those patients who underwent cesarean hysterectomy while in group 2 underwent myometrial resection as planned. A well-structured proforma was designed for entering data in relation to mode of surgery, the status of booking, hospital stay and complications related within both procedural comparison. The risks and outcomes of both procedures in terms of blood transfusion requirements and other complications were recorded.

**Results:** The mean age of the patients were 31.3±5.1 years with majority having an emergency cesarean hysterectomy/myometerial resection procedure. There were 64% versus 60% such cases which arrived for their hysterectomy of morbid adherent placenta without prior booking. Majority of the patients were multiparous with only 14% patients from myometrium resection being nulliparous. The hospital stay post cesarean was less in myometrium resection than cesarean hysterectomy respectively (5.1±1.3 days vs 6.4±2.5 days). In the present study the bladder injury, blood loss and relaparotomy was only presented in 8%, 18% and 4% cases in myometrium resection in comparison to 24%, 36% and 16% those in cesarean hysterectomy. The post operative infections as well as hematoma formation were also presented only in 20% and 8% patients in Group MR vs 44% and 20% in cesarean hysterectomy respectively.

**Conclusion:** The myometrium resection is a more reliable, effective method in comparison to cesarean hysterectomy with less complications and blood loss, minimal hospital stay, less infection and hematoma risks.

**Keywords:** Outcome, Cesarean hysterectomy, Myometrial resection, Morbid adherent placenta

## INTRODUCTION

The invasive placenta is a complication which is seen globally and associated with placenta which can be truly acreta, percreta or increta in various histological terminologies observed. It is very complicated to observe these kinds of conditions and clinically identify how invasive the placenta is. Due to the diagnostic difficulties, post-delivery and the risk involved in removal of the uterus the placenta percreta the aforesaid, is considered as the most lethal and unusually invasive forms which can be related with mortality and morbidity risk among patients.[1-4]

In addition to this the placenta percreta is associated with pre and post setups of delivery which includes formation of balloon temponade, embolism of the Internal Iliac arteries as well as embolism/ligation of the uterine arteries..Because of the various aspects related to the complications observed in the morbid adherent placenta, there are different ways to treat the effective condition including surgical techniques like myometrial resection or also known as local resection or cesarean hysterectomy.[5-7]

There are different risks involved with cesarean hysterectomy as well as myometrial resection. However, the research has highlighted the fact that cesareans hysterectomy may have more complication risk than involved with my myometrium resection.[8]

Current radiological imaging such as ultrasonography as well as magnetic resonance imaging are considered as valuable diagnostic tools for identifying the mortality related with morbid adherent placenta. These diagnostic techniques also facilitate identifying the best used procedural method for resection or surgical removal of the placenta.[9-11]

The present study was conducted to identify and compare both caesarean hysterectomy and myometrium resection procedures for morbid adherent placenta removal in pregnant women. The outcomes were compared with both procedures and identifying the most effective resolution for treating placental defects.

## MATERIALS AND METHODS

This prospective study was conducted at Department of Obstetrics &Gynaecology, Gujranwala Medical College, Gujranwala from 1st January 2023 to 30th June 2023. A total of 100 cases were enrolled after ethical clearance of the study and acceptance of patients to enroll the study through signing an informed written consent. The sample size of the patients was calculated using web-based sample size calculator using 80% power of test, 95% CI and 5% margin of error. The inclusion criteria consisted of pregnant women admitted with ultrasonographic diagnosis of morbid adherent placenta and requiring hysterectomy. The age of the patients was between 18-45 years. Those patients having normal placentas were excluded from the study. The patients were divided into two groups. Group 1 was those patients who underwent cesarean hysterectomy (CH) while in group 2 underwent myometrium resection (MR) as planned. The group 1 was named as CH while gorp 2 was name as MR. The patients were equally divided into both groups through randomization. A well-structured proforma was designed for entering data in relation to mode of surgery, the status of booking, hospital stay and complications related within both procedural comparison. The risks and outcomes of both procedures in terms of blood transfusion requirements and other complications were recorded. The data was analyzed using SPSS-

Received on 08-07-2023
Accepted on 24-10-2023

26.0 with applying Chi square test for analysis. The p value<0.001 was taken as significant.

## RESULTS

The mean age of the patients were 31.3±5.1 years with majority having an emergency cesarean hysterectomy/myometrium resection procedure (Table 1). There were 64% versus 60% such cases which arrived for their hysterectomy of morbid adherent placenta without prior booking. Majority of the patients were multiparous with only 14% patients from myometrium resection being nulliparous (Fig. 1).

Table 1: Demographic and mode of surgery details enrolled patients within two groups

| Variables | Cesarean hysterectomy (n = 50) | Myometrium resection (n = 50) | p-value |
|---|---|---|---|
| Age (years) | | | |
| <18-29 | 2 (4%) | 13 (26%) | 0.001 |
| 30–39 | 30 (60%) | 33 (66%) | |
| >39 | 18 (36%) | 4 (8%) | |
| Mode of surgery | | | |
| Elective | 22(44%) | 14 (28%) | 0.024 |
| Emergency | 28 (56%) | 36 (72%) | |

Table 2: Comparison of average blood transfusion, hospital stay and mean gestational age within cesarean hysterectomy and myometrium resection groups

| Variables | Cesarean hysterectomy (n = 50) | Myometrium resection (n = 50) | p-value |
|---|---|---|---|
| Average blood transfusions (units) | 4±2.0 | 2±1.0 | 0.016 |
| Average post-op hospital stay (days) | 6.4±2.5 | 5.1±1.3 | 0.054 |
| Mean gestational age of TOP (days) | 35±6 | 36±2 | 0.612 |

Table 3: Outcome Comparison of post operative risk of complications, infections and blood loss in patients under caesarean hysterectomy and myometrium resection groups

| Variables | Cesarean hysterectomy (n = 50) | Myometrium resection (n = 50) | p-value |
|---|---|---|---|
| Bladder injury | 12 (24%) | 4 (8%) | 0.001 |
| Blood Loss > 2000 ml | 18 (36%) | 9 (18%) | |
| Re-laparotomy | 8 (16%) | 2 (4%) | |
| Post-operative Infection | 22 (44%) | 10 (20%) | |
| Hematoma Formation | 10 (20%) | 4 (8%) | |

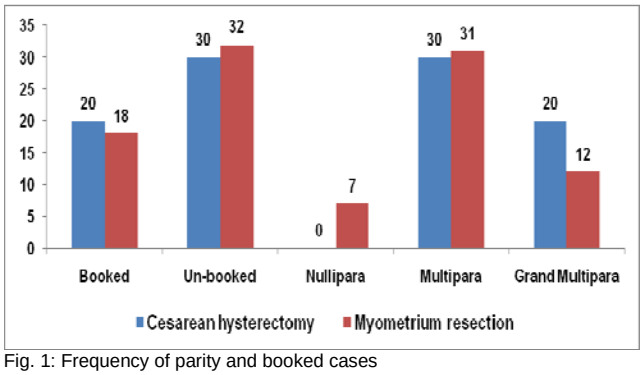


Fig. 1: Frequency of parity and booked cases

The Average blood transfused in CH group was 4 units while in group MR it was 2.0 units. The hospital stay post cesarean was less in Group MR than Group CH respectively (5.1±1.3 days vs 6.4±2.5 days) [Table 2]. In the present study the bladder injury, blood loss and relaparotomy was only presented in 8%, 18% and 4% cases in group myometrium resection in comparison to 24%, 36% and 16% those in group caesarean hysterectomy. The post operative infections as well as hematoma formation were also presented only in 20% and 8% patients in group myometrium resection vs 44% and 20% in group caesarean hysterectomy respectively (Table 3).

## DISCUSSION

The findings of current study indicate that local resection was more effective than cesarean hysterectomy. Patients who underwent cesarean hysterectomy required an average of 4±1.0 units of blood transfusion, compared to only 2±1.0 units in those who had local myometrial resection. The same has been reported in literature researcher wherein it is elaborated that severe hemorrhage, typically involving 3–5 liters of blood loss, along with complications such as disseminated intravascular coagulation (DIC), massive transfusion, adult respiratory distress syndrome (ARDS), electrolyte imbalances, and renal dysfunction, are all indicative of a morbidly adherent placenta.[12,13]

In another study it was briefed that local resection was successfully performed in 8 out of 12 cases, resulting in effective hemorrhage control and uterine preservations. In the remaining four cases, hysterectomy was necessary. This further emphasized on the fact that local myometrial resection is a better opted procedure than cesarean hysterectomy. The present study results in terms of less complications and blood loss risk in myometrial resection also supported the similar findings.[14-16]

Anatomically, the lower uterine segment, which is richly vascularized, receives blood supply from the cervical artery, inferior vesical artery, and the upper, middle, and lower vaginal arteries. Given this vascular complexity, ligation or occlusion of the internal iliac arteries alone is often inadequate for managing placenta accreta spectrum (PAS).[17]

The average postoperative hospital stay was 6.4 days for patients who underwent cesarean hysterectomy, compared to 5.1 days for those who had a local resection. Patients in the local resection group also experienced fewer complications than those in the hysterectomy group. Supporting the present research findings, a study reported that local resection was associated with a lower complication rate within the first 24 hours post-surgery when compared to hysterectomy.[18-20]

## CONCLUSION

The myometrium resection is a more reliable, effective method in comparison to cesarean hysterectomy with less complications and blood loss, minimal hospital stay and less infection, hematoma risks.

## REFERENCES

1. Mogos MF, Salemi JL, Ashley M, Whiteman VE, Salihu HM. Recent trends in placenta accreta in the United States and its impact on maternal-fetal morbidity and healthcare-associated costs, 1998–2011. J Matern Fetal Neonatal Med 2016;29(7):1077-82.
2. Society of Gynecologic Oncology, American College of Obstetricians and Gynecologists and the Society for Maternal–Fetal Medicine, Cahill AG, Beigi R, Heine RP, Silver RM. Placenta accreta spectrum. Am J Obstet Gynecol 2018;219(6):B2-16.
3. Silver RM, Branch DW. Placenta Accreta Spectrum. N Engl J Med 2018;378(16):1529-36
4. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, et al. Maternal morbidity associated with multiple repeat cesarean deliveries. Obstet Gynecol 2006;107(6):1226-32.
5. Fonseca A, de Campos DA. Maternal morbidity and mortality due to placenta accreta spectrum disorders. Best Pract Res Clin Obstet Gynaecol 2021;72:84-91.
6. Pineles BL, Sibai BM, Sentilhes L. Is conservative management of placenta accreta spectrum disorders practical in the United States? Am J Obstet Gynecol MFM 2023;5(3):100749.
7. Einerson BD. Conservative management for placenta accreta spectrum: questions and barriers remain but are surmountable. Am J Obstet Gynecol MFM 2023;5(3):100859.
8. Einerson BD, Gilner JB, Zuckerwise LC. Placenta accreta spectrum. Obstet Gynecol 2023;142(1):31-50.

9. Hecht JL, Baergen R, Ernst LM, Katzman PJ, Jacques SM, Jauniaux E, et al. Classification and reporting guidelines for the pathology diagnosis of placenta accreta spectrum (PAS) disorders: recommendations from an expert panel. Mod Pathol 2020;33(12):2382-96.
10. Ernst LM, Linn RL, Minturn L, Miller ES. Placental pathologic associations with morbidly adherent placenta: potential insights into pathogenesis. Pediatr Dev Pathol 2017; 20(5): 387-93.
11. Jauniaux E, Bhide A, Kennedy A, Woodward P, Hubinont C, Collins S, FIGO Placenta Accreta Diagnosis and Management Expert Consensus Panel. FIGO consensus guidelines on placenta accreta spectrum disorders: Prenatal diagnosis and screening. Int J Gynaecol Obstet 2018; 140(3):274-80.
12. Jauniaux E, Ayres-de-Campos D, Langhoff-Roos J, Fox KA, Collins S, FIGO Placenta Accreta diagnosis and management expert consensus panel. FIGO classification for the clinical diagnosis of placenta accreta spectrum disorders. Int J Gynaecol Obstet 2019; 146(1): 20-4.
13. Eller AG, Porter TF, Soisson P, Silver RM. Optimal management strategies for placenta accreta. BJOG 2009;116(5):648–54.
14. Warshak CR, Ramos GA, Eskander R, Benirschke K, Saenz CC, Kelly TF, et al. Effect of predelivery diagnosis in 99 consecutive cases of placenta accreta. Obstet Gynecol 2010;115(1):65–9.
15. Fitzpatrick KE, Sellers S, Spark P, Kurinczuk JJ, Brocklehurst P, Knight M. The management and outcomes of placenta accreta, increta, and percreta in the UK: a population-based descriptive study. BJOG 2014;121(1):62–70.
16. Carusi DA, Fox KA, Lyell DJ, Perlman NC, Aalipour S, Einerson BD, et al. Placenta accreta spectrum without placenta previa. Obstet Gynecol 2020;136(3):458-65.
17. Sugai S, Yamawaki K, Sekizuka T, Haino K, Yoshihara K, Nishijima K. Pathologically diagnosed placenta accreta spectrum without placenta previa: a systematic review and meta-analysis. Am J Obstet Gynecol MFM 2023; 5(8):101027.
18. Sentilhes L, Ambroselli C, Kayem G, Provansal M, Fernandez H, Perrotin F, et al. Maternal outcome after conservative treatment of placenta accreta. Obstet Gynecol 2010;115(3):526-34.
19. Collins SL, Alemdar B, van Beekhuizen HJ, Bertholdt C, Braun T, Calda P, et al. Evidence-based guidelines for the management of abnormally invasive placenta: recommendations from the International Society for Abnormally Invasive Placenta. Am J Obstet Gynecol 2019;220(6):511–26.
20. Allen L, Jauniaux E, Hobson S, Papillon-Smith J, Belfort MA, FIGO Placenta Accreta Diagnosis and Management Expert Consensus Panel. FIGO consensus guidelines on placenta accreta spectrum disorders: nonconservative surgical management. Int J Gynaecol Obstet 2018; 140(3):281–90.

**This article may be cited as:** Ashraf S, Khalil H, Batool A, Abideen ZU: Comparative Outcome of Cesarean Hysterectomy Versus Myometrial Resection among Patients of Morbid Adherent Placenta. Pak J Med Health Sci, 2023;17(11):366-368.