Original Article

Myometrial Resection versus Caesarean Section Hysterectomy in Patients with Morbidly Adherent Placenta

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Abstract

Objective: To observe the comparative outcome of cesarean hysterectomy versus myometrial resection among patients of morbid adherent placenta in terms of post-operative complications at tertiary care Hospital.

Methodology: This comparative study was conducted in the gynecology department of Isra university hospital over periods of 2 years from Jan 2016 to December 2018. Total 70 patients presented with morbid adherent placenta were included, followed by 25 patients were taken in group A, who underwent cesarean hysterectomy while 45 patients were taken in group B who had myometrial resection. All the information regarding mode of surgery i.e., elective or emergency, booking status, blood loss, need of placement of additional compression sutures, post operative hospital stay, need of blood transfusion, morbidity was recorded on self-designed proforma. Dara analysis was done by SPSS version 20.

Results: Total 70 patients were studied; their mean age was 37.23±5.12 years. Majority of patients 14(56%) had emergency cesarean hysterectomy while in local resection group 32 (71.11%) had emergency surgery. Most of the females were un-booked in both groups. Estimated average of blood loss was 4±1.0 units in group A, while in group B it was 2±1.0 units. Post operative infection was seen in 11(45%) patients of group A, while 9(17.78%) was in group B. Bladder injury was also higher 6 (24%) in group A in contrast to group B as 4(8.88%). Blood loss of >2000 ml was 11(45%) in patients of group A while 8(16.66%) in group B. Re-laparotomy rate was significantly lower 4(16%) in group A compared to group B 2(4.44%) (p-0.001).

Conclusion: The myometrial resection was observed to be the effective, safe and reliable technique with less post operative complications including post-operative infection, less blood loss, lower risk of the bladder injury and lower rate of relaparotomies as compared to cesarean hysterectomy.

Key Words: Morbidly adherent placenta, cesarean section, myometrial resection

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Introduction

Placenta accreta, also known as unusually invasive placenta, is a broad word that refers to circumstances in which the placenta is a truly accreta, percreta or increta in histological terminology.[1] It's difficult to tell the difference between these clinical entities in clinical scenarios because the placenta's invasiveness isn't always known ahead of time. The diagnosis is difficult even after delivery, unless the uterus is removed and exposed to pathological investigation. Placenta percreta is the most dangerous of the unusually invasive placentas, with a much higher maternal morbidity than the other types.[2] Placenta percreta is linked with higher demanding pre- and post-delivery setup, including the need for probable endovascular intervention like as balloon occlusion and/or embolization of the arteries supplying the uterus and placenta.[3] Furthermore, there are differing perspectives on surgical technique, such as whether to go for local resection, hysterectomy, or

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leaving the placenta in place to be resorbed, as in abdominal pregnancies.[4] Major risk factors include placenta previa and previous cesarean deliveries. Other risk factors are prior uterine scars (myomectomy, infertility treatments, cornual resection of ectopic pregnancy, hysteroscopic septum resections or removal of uterine adhesions), recurrent abortions, dilatation and curettage (D/C), smoking, advanced maternal age and parity. PAS became an important life-threatening obstetric problem since frequency of it has been rising constantly in recent decades due to increasing rates of caesarean deliveries.[5] Current imaging methods, such as ultrasonography and magnetic resonance imaging (MRI), are the valuable diagnostic modalities to diagnose the placenta accreta during antennal time,[6] allowing for scheduled delivery with blood product preparation and experienced personnel availability.

These methods can help to lower the risks of major obstetric haemorrhage leading to multiorgan failure and mortality. Moreover, adherent placenta has been replacing with uterine atony as major cause of cesarean hysterectomy.[5,7] Although it is not often possible to perform this technique to all patients, local resection should be reserved for the women with strong fertility desire or uterine sparing. PAS is a life-threatening condition causing maternal mortality and morbidity, and is no longer a rare obstetric situation. The incidence of PAS has increased from approximately one case per 1000 deliveries in the 1980s to three per 1000 deliveries in the past decade.[8,9] Currently, the rate is higher as the number of caesarean sections increases, the greater number of morbidity invasive placenta will be encountered. Therefore, new uterine sparing methods are being suggested in the literature but conclusions about the superiority of any method still could not be drawn. Hence the current study aims, to observe the results of cesarean hysterectomy versus myometrial resection in patients with morbid adherent placenta.

Methodology

This prospective observational study was conducted in the gynecology department of Isra university hospital over periods of 2 years from January 2016 to December 2018. Total 70 patients presented with morbid adherent placenta were included. While all other patients with normally located placenta and those who were nor agreeing to as the study participants were excluded from the study. Complete medical history, clinical examination and required laboratory investigation were done. After taking written informed consent all the cases were divided in tow groups. Patients those who underwent cesarean hysterectomy were taken in group A and patients those who underwent myometrial resection were taken in group B. All the information regarding mode of surgery i.e., elective or emergency, booking status, blood loss, need of placement of additional compression sutures, post operative hospital stay, need of blood transfusion, morbidity was recorded on self-designed proforma. Frequency and percentages were calculated for categorical variables. Mean and standard deviation were computed for the numerical variables. Data analysis was done on SPSS version 20.

Results

Total 70 patients were included in the study and out of them 25 undergone cesarean hysterectomy while 45 patients were undergone local resection. Emergency cesarean hysterectomies were done among 14(56%) of group A and among 32(71.11%) of the cases of group B. In group A, 15(60%) patients were un-booked while in group B 29(64.44%) were un-booked. Average blood loss was 4 ± 1.0 units in group A and 2± 1.0 units in group B. (Table I)

Table I: Descriptive statistics of the demographic characteristics of the patients (n=70)

Variables		Group A (N=25)	Group B (N=45)	p-value
Age groups	<30 years	01	12	0.001
	30-40 years	15	30	
	>40 years	09	03	
Mode of surgery	Elective	11	13	0.034
	Emergency	14	32	
Booking status	Booked	10	16	0.055
	Un-booked	15	29	
Parity	Nullipara	00	06	0.067
	Multipara	15	28	
	Grand multipara	10	11	
Average number of blood transfusion		4 ± 1.0 units	2± 1.0 units	0.002
Average post operative Hospital stay		6.5 ± 2.4 days	5 ± 1.2 days	0.052
Mean gestational age of TOP		35± 5 days	36 ±1.4 days	0.531

Post operative infection was seen in 11(45%) patients undergoing cesarean hysterectomy while only 9(17.78%) developed infection undergone local resection. Bladder injury was seen in 6(24%) patients of

cesarean hysterectomy while in only 4(8.88%) patients undergoing local resection had bladder injury. Blood loss of >2000 ml was seen in 11(45%) patients undergoing cesarean hysterectomy while 8(16.66%) patients undergoing local resection had blood loss of > 2000ml. The rate of the re-laparotomy was higher among 4(16%) of the cases of group A while in group B 2(4.44%) underwent re-laparotomy. Above reported complications were significantly higher in group A as compared to group B (p-<0.05) respectively. (Table II)

Table II: Post-operative complications among both groups (n=70)

Complications	Group A (N=25)	Group B (N=45)	p-value
Bladder injury	6 (24%)	4(8.88%)	0.001
Blood loss > 2000 ml	9(36%)	8(16.66%)	
Re laparotomy	4(16%)	2(4.44%)	
Post operative Infection	11(45%)	9(17.78%)	
Hematoma formation	5(20%)	4(8.88%)	

Discussion

The present study has shown that local resection technique is a safe and effective method in treatment of anterior placenta accrete spectrum. (PAS). Results of our study has shown that local resection was more effective as compared to cesarean hysterectomy. Average blood transfusion was 4 ± 1.0 units in patients undergone cesarean hysterectomy as compared to patients undergone local resection of myometrium i.e., 2± 1.0 units. Consistently study conducted by Likis FE et al[10] reported that major intractable haemorrhage with blood loss of 3-5 litters, disseminated intravascular coagulopathy, massive blood transfusion, adult respiratory distress syndrome, imbalance of the electrolytes and renal impairment are all symptoms of a morbidly adhered placenta. However, one must consider that the decision to perform local resection is most likely made after the placenta is diagnosed as percreta and determined to be accessible for primary resection based on the evaluation of the proper extension and the localization into the wall of uterus and adjacent tissues at the time. Another study conducted by Karaman E et al[11] also reported that in 8 of the 12 cases, the local resection was effectively successful in the uterus preservation and the stopping the hemorrhage, in four cases, hysterectomy was required, the average number of erythrocyte suspensions transfused was 4.82.[6] One bladder injury complication was discovered seen and was conservatively treated. The use of local excision of the percreta site to treat postpartum bleeding and preserve the uterus among cases with placenta percreta is a successful, safe, and fertility-preserving procedure. Lower uterine segment, a highly vascularized structure, is perfused by the cervical artery, the inferior vesical artery and by the upper, middle and lower vaginal arteries.[12] Regarding this anastomotic compensation internal iliac artery ligation or occlusion alone is insufficient for PAS. Palacios et al[13] first described en bloc resection of myometrium in patients with placenta percreta in 2004. They ligatured bilateral uterine arteries and local bleeding was controlled with additive sutures s electively including the anterior and posterior cervical and vaginal arteries. After resection they covered primary sutured area with absorbable mesh and fibrine glue. Uterine conservation was managed in 50 (74%) of the 68 women. Chandaran et al[14] described triple P technique in 2006 in a case series of 4 women with anterior placenta percreta. According to this procedure firstly horizontal incision was made 2 finger breadths above the placental edge. Secondly, preoperatively placed intraarterial balloon catheters were inflated after delivery. Thirdly en bloc myometrial excision was made and new zone was repaired. The potential benefit of this procedure was to minimize the surgical dissection while removing the adhesive placenta in appropriately selected patients. In our study we performed horizontal incision for fetal delivery. Although Shabana et al[15] reported modified surgical approach in the form of stepwise cesarean section in 71 patients with placenta percreta. They also made horizontal uterine incision for fetal birth and after bilateral internal iliac artery ligation, en bloc resection of adhesive myometrial region was performed. They emphasized conservative rather than radical surgical aspects. We applied multiple compression sutures (Cho, hayman, funnel) and balloon tamponade in few cases along with resection, which were found affective in securing hemostasis. Similar is reported in other study who described that the success rate for uterine compression sutures was from 68% to 100% with an overall success rate of 92%.[16]

In our study re-laparotomy was done in 4 cases undergoing cesarean hysterectomy while in patients having local resection of myometrium, only 2 patients underwent re-laparotomy. Bladder injury was seen in 6 patients of cesarean hysterectomy while in only 4 patients undergoing local resection had bladder injury. In comparison to our results, Uysal G et al[17] reported that

in some PAS patients, local resection is a successful, safe, and fertility-preserving procedure. In their investigation, the diagnosis of placenta accreta spectrum anterior was confirmed intraoperatively in all 11 instances. Out of 11 instances, only one had a hysterectomy in the second operation. In two of the cases, there was a bladder damage. The average number of packed red blood cells received was 2.3 1.0 units. The average length of stay in the hospital after surgery was 4.5 days and 1.4 days. Few complications were noted in patients undergoing local resection as compared to cesarean hysterectomy. In comparison to our results, results of study conducted by Clausen C et al[18] reported that in comparison to hysterectomy, local resection appears to be associated with less complication rate within 24 hours of surgery. Mean gestational age of termination of pregnancy in patients undergoing cesarean hysterectomy was 35± 5 days as compared to local resection i.e 36 ±1.4 days. Similarly, results are seen in study conducted by Nair SS et al[19] reported that the average age at which a pregnancy was terminated was 36.51 weeks. Elective surgery was performed in 14 cases, with Caesarean hysterectomy accounting for over half of the cases, in every case, hemostatic surgical measures were taken. Bladder damage, DIC, and wound dehiscence were among the complications. There were four cases of bladder injury, including two cases of placenta percreta, one each of increta and accreta, and one each of increta and accreta. Two cases of DIC, multiple blood transfusions, and one case of a burst abdomen were among the other problems. The average length of stay in the ICU was 1.17 days, and the average length of stay in the hospital was 12.35 days.[19]

Conclusion

As per study conclusion the myometrial resection was observed to be the effective, safe and reliable technique with less post operative complications including post-operative infection, less blood loss, lower risk of the bladder injury and lower rate of relaparotomies as compared to cesarean hysterectomy. Small sample was one of the limitation strong limitations, and therefore further large-scale studies are recommended.

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