COMPARISION OF INTRA - OPERATIVE AND POST- OPERATIVE COMPLICATIONS OF INTRA- ABDOMINAL VERSUS EXTRA ABDOMINAL UTERINE REPAIR AT CAESAREAN DELIVERY

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ABSTRACT

Objective: To compare intra–operative and postoperative complications between intra-abdominal repair and exteriorization of uterus during caesarean delivery.

Study Design: Randomized controlled trial.

Place and Duration of Study: Obstetrics and Gynecology Department of Combined Military Hospital, Quetta from August 2012 to August 2013.

Material and Methods: A total of 780 women (390 in each group) with an indication for caesarean delivery (elective), parity 2 or more with singleton pregnancy at term assessed by dating scan were included in this study. In group A uterine incision is repaired while in pelvis (in situ) and In group B uterus is drawn from the pelvis to rest on the anterior abdominal wall so that the uterine incision can clearly be visualized (exteriorization of uterus).

Results: A total of 780 patients were included in the study. Mean age was 27.1 ± 2.7 and 27.4 ± 2.9 years in group-A and B, respectively. Gestational age was 37.7 ± 5.2 and 37.2 ± 5.4 weeks in group-A, and B, respectively. Surgical time was less than 45 minutes (35.3%) with in situ uterus repair as compared with 44% with exteriorization of uterus(p=0.003). Mean time for the first recognized bowl movement was 13.10 ± 3.45 hours in situ repair and 16.11 ± 4.98 hours in exteriorization of uterus (p<0.001). Exteriorization had been associated with vomiting during caesarean (18% with in situ repair compared with 38% exteriorization of uterus). Statistically significant difference was observed in both groups with regard to vomiting (p<0.001).

Conclusion: Exteriorization of uterus at caesarean section has the advantages of good exposure, good access to incision angle. Exteriorization of the uterus for repair is associated with an increased incidence of vomiting and longer surgical time during caesarean delivery under spinal anesthesia.

Keywords: Caesarean section, Intra-operative complications, Uterine exteriorization.

INTRODUCTION

Caesarean section most common intraperitoneal surgical procedure in obstetrics[1-3]. Though over the years there is a wider recognition of the desire to reduce caesarean section rate. Rates have noticeably increased in recent years about 1–70% in many developed countries[1].

The ideal surgical technique for caesarean section delivery continues to generate much debate in obstetric community, aimed at reducing surgical times lowering costs, decreasing postoperative morbidity, as well as length of hospital stay. Different operational techniques have been defined to reduce the risks of intra-operative and post-operative morbidity[2-4]. Intra-abdominal repair of uterus has been proposed as a valuable technique for repair of uterine incision after delivery of new born and placenta[2-4].

Intra-abdominal repair of uterus offers an easier and faster repair, so resulting in shorter surgical time (less than 45 minutes). In addition, time to the first recognized bowl movement was shorter in situ repair[2].

Both surgical techniques including in situ repair and exteriorization of uterus is being used by obstetricians in caesarean section in the department. Several local clinical studies have been made with varying results; some studies revealed that exteriorization of uterus at caesarean is a valid option. While other studies have found in situ uterine repair is better in terms of intra operative and post-operative complications. Temporary removal of uterus

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from abdominal cavity (exteriorization) has been associated with adverse outcomes, including vomiting during caesarean[5,6]. Based on the result of the study the procedure with less number of intra operative complications and rapid post-operative recovery will be adopted and could be set as protocol[7-21].

MATERIAL AND METHODS

This was a randomized controlled trial carried out in Obstetrics and Gynecology Department of Combined Military Hospital, Quetta from August 2012 to August 2013. Non probability consecutive sampling was done. Women aged 20-35 years, women with an indication for caesarean delivery (elective), parity 2 or more and women with singleton pregnancy at term assessed by dating scan and last menstrual period date were included. All high risk pregnancies were not included in the study because of confounders and if included there would have been bias in the study like placenta previa, morbidly adherent placenta, pregnancy with fibroid uterus and pregnancy with thrombocytopenia.

Sample size was calculated by WHO sample size calculator by taking level of significance 5%, power of test 80%, anticipated population proportion P1=35.3%, anticipated population proportion P2=44% . Sample size (n) calculated was 780. So patients were divided into two equal groups.

An informed consent was taken from all the participants of the study. Patient's privacy was maintained. Fourth year postgraduate trainee under supervision of the consultant performed the caesarean delivery. All women received prophylactic antibiotics inj ampiclox 1gm before pfannenstiel incision. In group A uterine incision was repaired while in pelvis (in situ). In group B the uterus was drawn from the pelvis to rest on the anterior abdominal wall. Day of operation was considered as day 0. Presence of intra-operative vomiting was noted and compared between two groups. Time to the first recognized bowl movement was noted. Operation time was noted by the first assistant from skin incision till last suture of the skin. Confounding and bias was controlled by random allocation of patient in either group by lottery method and by following all exclusion criteria.

Data was entered and analyzed using SPSS version 10. For quantitative variables (age of patient, and time for first recognition of bowl movement) mean and S.D were calculated. For qualitative variables (operation time and vomiting) frequencies were measured. For comparison of quantitative variables (time for first recognition of bowel movement) by both procedures independent sample t-test was used. For comparison of qualitative variables (operation time and vomiting) chi square test was used. A p value of <0.05 was considered statistically significant.

Table-1. Time for first recognition of bowel movement (hours).

Group	Mean	Standard deviation
Group-A (Intra-abdominal)	13.10	3.45
Group-B (Temporary Exteriorization)	16.11	4.98

p value =9.811 $p < 0.001$

RESULTS

A total of 780 patients (390 in each group) were included in present study.

In group-A, intra-abdominal repair of uterus and in group-B uterine repair after temporary exteriorization of uterus was done.

Most common age group was 20-25 years in both groups. Mean age was 27.1 ± 2.7 and 27.4 ± 2.9 years in group A and B, respectively. In group A, 167 patients (42.8%) and in group B 156 patients (40%) were 20-25 years of age while 127 patients (32.6%) from group A and 132 (33.9%) patients were 26-30 years old and 96 patients (24.6%) from group A and 102 (26.1%) patients were 31-35 years old.

In group A, 237 patients (60.8%) and in group B 254 patients (65.1%) were para 2-4 while 153 patients (39.2%) from group-A and 136 (34.9%) patients were para 5-7.

In group A, 183 patients (46.9%) and in group B 171 patients (43.9%) were gravida 2-3

while 207 patients (53.1%) from group-A and 219 (56.1%) patients were gravida 4-6.

In group A, 237 patients (60.8%) and in group B 254 patients (65.1%) were para 2-4 while 153 patients (39.2%) from group A and 136 (34.9%) patients from group B were para 5-7.

Gestational age was 37.7 ± 5.2 and 37.2 ± 5.4 weeks in group A, and B, respectively. Operative time (< 45 minutes) was most common in group A when compared with group B (p=0.003) (table-2). Statistically significant difference was observed in both groups with regard to vomiting (p<0.001) (table-3).

DISCUSSION

Temporary removal of uterus from the abdominal cavity to facilitate the repair of uterine incision has been postulated as a valuable technique. This is particularly so, when exposure of incision is difficult and when there are problems with haemostasis[4-10].

Initially the technique of uterine exteriorization at caesarean section was not popular because of hypothesized danger of the technique. These include vomiting, pain and greater puerperal morbidity[12-15].

In the first comparative study by Hershey and Quilligan in 1978 similar blood loss, duration of surgery, hospital stay and rates of puerperal febrile and infectious morbidity were reported in their groups of women who underwent either uterine exteriorization or in situ repair. They reported higher vomiting in the exteriorization group[22]. In our study vomiting was also significantly more common in exteriorization group as compared to intra-abdominal group (p<0.001).

In contrary, there was no significant difference between the two groups with regard to intraoperative vomiting during regional anesthesia reported by Sood and Edmond et al[21].

Edi-Osagie et al in a study comparing the influence on caesarean section morbidity by uterine exteriorization compared with that by in situ repair, demonstrated that uterine exteriorization and in situ repair had similar effects on perioperative caesarean section morbidity. Vomiting reflected inadequacy of preoperative preparation of patients. They concluded that exteriorizing the uterus at caesarean section is a valid option[23].

Sood in a randomized controlled study to asses intra-operative and post operative morbidity following exteriorization of the uterus at caesarean section as compared to in situ repair of the uterus found that there were significant reductions in intra operative blood loss, febrile morbidity and perioperative hemoglobin decrease in the study group as compared to that in the control group[22]. There was no significant difference between the two

Table-2. Operative time (< 45 minutes).

Less than 45 minutes	Group-A (Intra-abdominal)		Group-B (Temporary exteriorization)	
	No.	%	No.	%
Yes	177	45.4	137	35.1
No	213	54.6	253	64.9
Total	390	100.0	390	100.0

p value=0.003

Table-3. Distribution of patients by vomiting.

Vomiting	Group-A (Intra-abdominal)		Group-B (Temporary Exteriorization)	
	No.	%	No.	%
Yes	63	16.2	153	39.2
No	327	83.8	237	60.8
Total	390	100.0	390	100.0

p value = < *0.001*

groups regarding intra-operative pain, nausea and vomiting amongst patients undergoing caesarean section. There was no significant difference in the operating time and post operative pain and number of analgesic doses and bowel function.

In this present study, there was no significant difference between two groups regarding the maternal age and the gestational age. In the present study, there was significant difference in the operating time due to ease of repair and quick haemostasis. The operating time in the in situ group was less as compared to the exteriorized group, which was statistically significant, *p* value 0.003.

In the present study, there was significant difference in two groups regarding return of bowel function. We had taken the return of bowel functions in hours. Same results demonstrated by Coutinho et al[7] in their study.

CONCLUSION

Exteriorization of uterus at caesarean section has the advantages of good exposure, good access to incision angle, especially when the angles are extended in case of difficult extraction. There is easy identification of uterine anomaly, adnexal mass if present, and easy exposure of the posterior aspect of uterus especially the lower segment in case of obstructed labour.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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