



A Study of Uterine Exteriorization versus in Situ Repair and Its Outcome at Cesarean Section

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Abstract

Background: Caesarean delivery is one of the most commonly performed major surgical procedure worldwide around 18.5 million. To decrease the amount of blood loss during surgery uterine incision can be sutured with insitu technique or by exteriorization.

Methods: This is a prospective study. Pregnant women admitted to labour Ward for elective and emergency c-section with various indications were included after obtaining written informed consent in their own understandable language.30 patients wer allotted to each group (Group A - Exteriorization repair, Group B - in situ repair). In all cases thorough history, complete physical and obstetric examination, routine investigations including obstetric scan were carried out. cesarean sections were done under spinal anesthesia. Amount of blood loss and duration of surgery noted. Haemoglobin values are checked preoperatively and postoperatively.

Results: When exteriorization repair compared with in situ repair amount of blood loss was less in exteriorization (mean -292. vs 355) with P value < 0.001. (significant) Duration of surgery was less in

exteriorization repair versus in situ repair. (mean 76.6 vs 93.44) with P value <0.001. (significant)

Conclusion: Caserean section is most commonly performed surgery. Uterine repair can be done either by insitu repair or by exteriorization repair. Both have its own benefits and drawbacks, decision making depends on surgeons own preferences.

Keywords: Caesarean Delivery, Lower Uterine, Infection, Soft Tissue Injury

Introduction

Caesarean delivery is one of the most commonly performed major surgical procedures worldwide(18.5million).¹ The WHO has recommended a maximum caeserean delivery rate of 10-15% in order to reduce maternal morbidity and mortality.² Caesarean delivery is accompanied by significant risks including bleeding, infection, soft tissue injury and thromboemolism. Accordingly, it is essential that surgical technique should be optimised to reduce the adverse outcomes.³ One such modification is uterine repair after the delivery of the fetus and placenta either by intraabdominal repair or temporarily exteriorizing.⁴

The technique of uterine exteriorization was described by sanger in 1882. Exteriorization of the uterus offers better exposure of the angles, promotes venous drainage, reduces vascular congestion, further contributes to decrease in bleeding when compared with in situ repair.⁵ Various cesarean delivery techniques are employed based on clinical needs and provider preferences to minimize morbidity. Knowing specific aspects of caesarean section technique helps in determining which method leads to an optimum outcome for women and their babies.

Objectives

To compare the two methods - exteriorization and insitu repair of the uterus at cesarean section at NMCH and RC, Raichur.

Materials and Methods

Study design: Prospective study done after taking ethical committee clearance from the institute.

Study period: 1 year

Sample size: 60 samples (30 in each)

Statistical analysis: Data was entered into microsoft excel sheet and analysed using SSPS 22 version software. Chi square test or Fischers exact test was used as test of significance for qualitative data. Independent t test was used as test of significance to identify the mean difference between two quantitative variables. P value <0.05 was considered as statistically significant after assuming all the rules of statistical tests.

Results

Table 1: comparison of mean age between two groups

	Mean	SD	P value
Group 1	25.72	4.078	0.567
Group 2	26.40	4.262	

Inclusion criteria

1. All pregnant women with emergency or elective indication for caesarean section at term

Exclusion criteria

1. Women not willing for the participation in the study
2. Pregnant women admitted to labour Ward for elective and emergency c- section with various indications were included after obtaining written informed consent in their own understandable language.
2. 30 patients were allocated to each group

Group 1 - Exteriorization repair

Group 2 - in situ repair

In all cases thorough history, complete physical and obstetric examination, routine investigations including obstetric scan were carried out.

Lower uterine segment cesarean sections will be done by Pfannensteil incision

Exteriorisation Repair

After the delivery of the fetus and placenta, uterus will be taken out of the abdominal cavity and placed over the mother's anterior abdominal wall and closure is done.

In-situ Repair

After the delivery of the fetus and placenta, uterine incision will be closed with uterus inside the abdominal cavity.

Amount of blood loss and duration of surgery noted. Haemoglobin values are checked preoperatively and postoperatively.

There was no statistically significant difference found between groups with respect to age

Table 2: Distribution of subjects according gravid among the group

	Number	%	Number	%
Multi	18	72	21	84
Primi	7	28	4	16

P value 0.49, there was no statistically significant difference found between groups with respect to gravida

Table 3: Comparison of mean haemoglobin between two groups

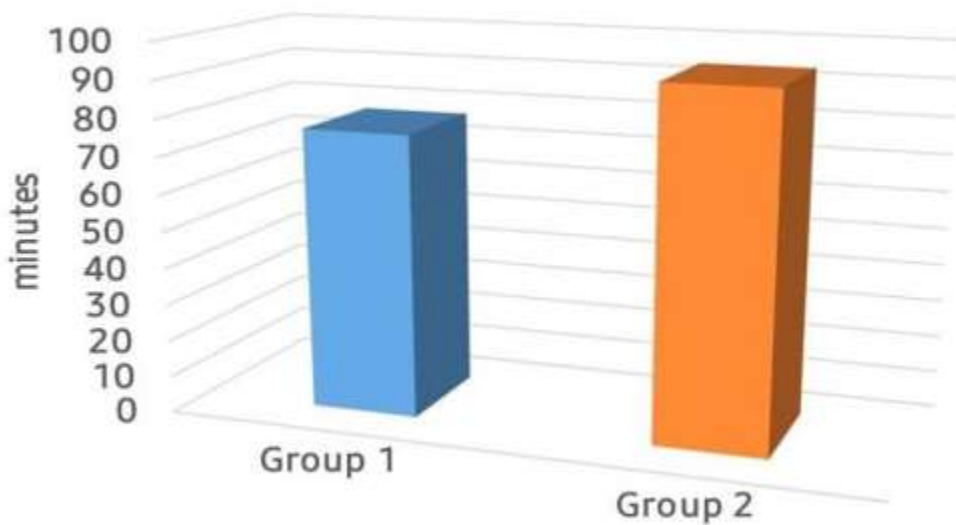
		Mean	Standard Deviation	P value
PRE OP HB(gm%)	Group 1	10.380	0.60	0.229
	Group 2	10.156	0.689	
POST OP HB (gm%)	Group 1	9.668000	0.4561	0.025
	Group 2	9.304000	0.6406	

There was a statistically significant difference found between two groups with respect to post op haemoglobin.

Table 4: Comparison of mean duration of surgery between two groups

	Mean	Standard Deviation	P Value
GROUP 1	76.60	9.323	<0.001
GROUP 2	93.44	7.811	

Graph 1:

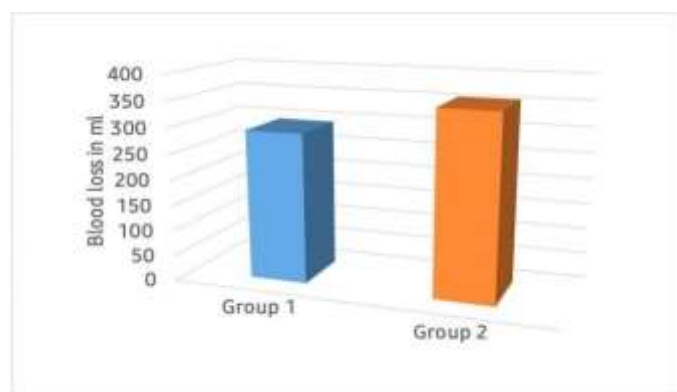


There was a statistically significant difference found between groups with respect to duration of surgery

Table 5: Comparison of mean Intra op amount of blood loss between two groups

	Mean	Standard Deviation	P Value
Group 1	292.40	56.053	<0.001
Group 2	355.20	61.126	

Graph 2:



There was a statistically significant difference found between groups with respect to Intra op amount of blood loss.

Discussions

The demographic profile and baseline clinical data like age, height, weight, BMI, gestational age, parity and indications for cesarean delivery were comparable in two groups with no statistically significant differences. Similar distribution was seen in studies by Ezechi et al and Das et al^{7,8}

In our study, blood loss was estimated by the difference between levels of hemoglobin measured preoperatively and 48hrs post-operative period. Group 1 (9.66 ± 0.45) group 2 (9.304 ± 0.30) with significant reduction was seen with in situ group (p-value = 0.05). Exteriorization of uterus for repair thought to be associated with easier and faster repair as there is clear visualisation of uterine margins, increased venous drainage and reduced vascular congestion.

Zaphiratos V et al statistically analyzed sixteen randomized controlled trials. They showed uterine incision repaired by exteriorization of uterus may have less blood loss and small decrease in hemoglobin level.¹⁰ Ezechi et al in their randomized study observed post-operative anaemia was 21% in in-situ group and 6.2% in exteriorization repair which was statistically significant.⁷ In our study duration of surgery was compared with exteriorization repair 76.60 ± 9.323 minutes and in In-situ repair group females was 93 ± 7.8 minutes (p-value = <0.001). Time was shorter and sutures were fewer in number when the uterus was exteriorized. Similar findings were reported by Nasir et al and Das et al.^{8,9} However, Shiya et al and El bharat et al reported that duration of surgery in exteriorization group was significantly less when compared to insitu group^{11,12} Chauhan and devi (2018) also found similar results in comparison with our Study.¹³

Conclusion

Uterine repair can be done either by insitu or by exteriorization. Exteriorization is a valid option for better visualization of the lower uterine segment and faster repair, posterior surfaces of the uterus could be visualized easily for haematomas and tears, uterine contour can be assessed. Decreased blood loss reduces the requirement of blood transfusion post operatively, due to traction pressure on uterus which acts as a tourniquet on uterine vessels in comparison with insitu repair. In case of insitu repair, collection of blood obscured the surgical field,

injury to the adjacent structures and post-operative complications, this technique can be used in case of Dense adhesions, plastered abdomen where exteriorization becomes difficult. As there are no significantly detrimental differences regarding disadvantages and advantages of uterine incision repair techniques, it can be said that the decision to repair uterine incision in situ or exteriorization should be left to the surgeon, depending on each case. This article is taken for souvenir for Federation of Obstetrics and Gynaecology Societies of India south zonal conference with YUVA-2024 held at MYSORE.

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