

## ORIGINAL ARTICLE

**Comparison of Intraoperative Hemorrhage by Blunt Versus Sharp Expansion of Uterine Incision at Lower Segment Cesaeren Delivery**HUMAIRA SHAHEEN<sup>1</sup>, SADIA ZAHOR<sup>2</sup>, NADIA ZULFIQAR<sup>3</sup>, BILQEES AKHTAR MALIK<sup>4</sup>, ZAFAR IQBAL<sup>5</sup>, MUHAMMAD TAHIR<sup>6</sup><sup>1</sup>Assistant Professor, Department of Obstetrics and Gynecology D.G. Khan Medical College, D.G. Khan<sup>2</sup>Associate Professor, Department of Obstetrics and Gynecology Sheikh Zayed Medical College and Hospital, Rahim Yar Khan<sup>3</sup>Assistant Professor, Department of Obstetrics and gynecology Aziz Fatimah Hospital Faisalabad<sup>4</sup>Classified Gynecologist, Department of Obstetrics & Gynecology PEMH Rawalpindi<sup>5</sup>Assistant Professor, Department of Statistics The Islamia University of Bahawalpur<sup>6</sup>Statistical Analyst, Final Semester Department of Statistics The Islamia University of BahawalpurCorresponding author: Humaira Shaheen, Email: [Humairaimran5837@gmail.com](mailto:Humairaimran5837@gmail.com), Cell: 0333 7175320**ABSTRACT****Objectives:** To compare the intraoperative hemorrhage between blunt and sharp expansion of uterine incision at lower segment caesarean delivery.**Study Design:** Randomized controlled trial.**Study Duration:** 03-02-2022 to 02-08-2022 (6 months)**Setting:** Department of Obstetrics and Gynecology, D.G Khan Hospital D. G Khan**Material and methods:** Total 74 patients undergoing C-section, age range 20-40 years, with singleton pregnancy and patients with >37 weeks gestation. (on ultrasound) were included. Intraoperative blood loss was compared between blunt and sharp group.**Results:** Mean age was  $32.31 \pm 6.246$  years, in Blunt and Sharp group, mean age was  $35.70 \pm 4.122$  years and  $28.92 \pm 6.202$  years. In Blunt group, mean blood loss was  $201.62 \pm 60.794$  ml while in sharp group was  $782.03 \pm 153.819$  ml. Difference of mean blood loss between Blunt and Sharp group was significant ( $P=0.000$ ).**Conclusion:** Results of present study reflects that there is significant difference of intraoperative mean blood loss between blunt and sharp groups. Most of the patients were between 31-40 years of age. After stratification of age, gestational age, parity and type of C-section, it was found that there is significantly low mean blood loss in blunt group as compared to sharp group.**Keywords:** Blood loss, C-section, Blunt, intraoperative haemorrhage,**INTRODUCTION**

About 15% of the worldwide deliveries are cesarean deliveries while it can go up to 1 out of 3 in developed countries. It is commonly acknowledged that a surgical delivery is more likely to result in blood loss than a vaginal delivery.<sup>1</sup> In order to reduce intraoperative blood loss during caesarean delivery, different methods have been used, but obstetric hemorrhage still stands as the leading cause of maternal morbidity and death.<sup>2</sup> Another approach is to use fingers rather than scissors to bluntly expand the uterine incision.<sup>3</sup> Training guidelines, individual experiences or theoretical justification were cited by proponents of either the sharp or blunt techniques to support their decisions. The key benefit of the blunt method is that there is less stress to the vasculature and less oozing and bleeding from the dissected myometrial edge.<sup>4</sup> A quicker birth and a lower risk of injury to the newborn and umbilical cord are two other potential benefits.<sup>5</sup> Concerns have been raised regarding the decreased ability to regulate the length and direction of the uterine incision, which may increase the danger of accidental extensions that could worsen hemorrhage and perhaps cause injury to the lateral uterine and parametrial blood veins.<sup>6</sup> The probability of endometritis following caesarean delivery is affected negatively by the blunt division of the uterine wall.<sup>7</sup>

**MATERIAL AND METHODS**

This Randomized Control Trial was conducted at Department of Obstetrics and Gynecology, D.G Khan Hospital D. G Khan from February 03, 2022 to August 02, 2022. Total 74 patients undergoing C-section, age range 20-40 years, with singleton pregnancy and patients with >37 weeks gestation. (on ultrasound) were included. Grand multiparas, cases with abnormal presentation and cases with multiple pregnancies were excluded.

Ethical review committee approved this study and every patient gave their consent to participate.

By using lottery method, two groups blunt and sharp were created. In blunt group, blunt method was done and in sharp group, sharp method was done.

"After c-section, blood loss was estimated in all cases by calculating blood and blood clots in suction bottle, difference of weight (weight was calculated on digital weighing machine) of

sponges (pre-operative and post-operative) by using formula  $1g=1ml$  and blood clots in clenched fist (each fist = 500ml of blood). Intra-operative blood loss was noted on proforma along with demographic profile of the patients.

All statistical analysis was performed on SPSS V.20. Age, gestational age and blood loss (ml) were presented in form of mean and SD. Frequency was calculated for parity and type of C-section (elective or emergency). Comparison of mean blood loss between both groups was done by using T-test. P-values  $\leq 0.05$  as considered statistically significant. Stratification was done for age, gestational age, parity and type of C-section was done. Student T-test was used to compare the mean blood loss. P-values  $\leq 0.05$  was considered statistically significant.

**RESULTS**

Mean age was  $32.31 \pm 6.246$  years, in blunt and sharp group, mean age was  $35.70 \pm 4.122$  years and  $28.92 \pm 6.202$  years. Mean blood loss in blunt group was  $201.62 \pm 60.794$  ml while in sharp group was  $782.03 \pm 153.819$  ml. Difference of mean blood loss between blunt group and sharp group was significant ( $P=0.000$ ). (Table 1)

Selected patients were divided into two age groups i.e. age group 20-30 years and age group 31-40 years. In age group 20-30 years, mean blood loss in study blunt group was  $230.00 \pm 83.964$  ml while in sharp group was  $741.09 \pm 131.010$  ml. There was significant ( $P=0.000$ ) difference of mean blood noted between blunt and sharp group. In age group 31-40 years, mean blood loss in blunt and sharp group was  $198.18 \pm 58.173$  ml and  $849.29 \pm 169.227$  ml. There was significant ( $P=0.000$ ) difference of mean blood seen between blunt and sharp group. (Table 2)

Two groups were created according to gestational age i.e. 37-39 weeks group and 40-42 weeks group. In 37-39 weeks group, mean blood loss was  $187.73 \pm 61.445$  ml in blunt group while in sharp group, mean blood loss was  $742.50 \pm 135.565$  ml. There was significant ( $P=0.000$ ) difference of mean blood seen between blunt and sharp group. In 40-42 weeks gestation group, mean blood loss in blunt and sharp group was  $222.00 \pm 55.607$  ml and  $840.00 \pm 164.978$  ml. There was significant ( $P=0.000$ ) difference of mean blood was seen between blunt and sharp group. (Table 3)

There were 15 primigravida in blunt group and 12 in sharp group. Mean blood in blunt group was  $187.33 \pm 60.794$  ml while in sharp group was  $812.92 \pm 141.942$  ml. Difference was significant with p value 0.000. Among multigravidas, mean blood loss in blunt group was  $212.69 \pm 55.476$  ml and in sharp group was  $759.25 \pm 152.482$  ml. There was significant (P=0.000) difference of mean blood was seen between blunt and sharp group. Among grand multigravidas, mean blood loss was  $209.44 \pm 69.975$  ml and  $799.00 \pm 203.175$  ml in blunt and sharp group. There was significant (P=0.000) difference of mean blood was seen between blunt and sharp group. (Table 4)

Elective C-section was performed in 24 patients of blunt group while in 20 patients of sharp group. Mean blood loss in blunt group and sharp group was  $197.50 \pm 56.932$  ml and  $772.75 \pm 146.507$  ml respectively. There was significant (P=0.000) difference of mean blood was seen between blunt and sharp group. Emergency C-section was performed in 13 patients of blunt group while in 17 patients of sharp group. Mean blood loss was in blunt group and sharp group was  $209.23 \pm 69.127$  ml and  $792.94 \pm 165.869$  ml. Difference was significant with p value 0.000. (Table 5)

Table 1: Comparison of mean blood loss between both groups

Group	N	Mean	SD	P value
Blunt group	37	201.62	60.794	0.000
Sharp group	37	782.03	153.819	

Table 2: Comparison of mean blood loss between both groups for age group

Group	N	Mean	SD	P value
Comparison of mean blood loss between both groups for age group 20-30 years				
Blunt group	4	230.00	83.964	0.000
Sharp group	23	741.09	131.010	
Comparison of mean blood loss between both groups for age group 31-40 years				
Blunt group	33	198.18	58.173	0.000
Sharp group	14	849.29	169.227	

Table 3: Comparison of mean blood loss between both groups for gestational age groups

Group	N	Mean	SD	P value
Comparison of mean blood loss between both groups for gestational age group 37-39 weeks				
Blunt group	22	187.73	61.445	0.000
Sharp group	22	742.50	135.565	
Comparison of mean blood loss between both groups for gestational age group 40-42 weeks				
Blunt group	15	222.00	55.607	0.000
Sharp group	15	840.00	164.978	

Table 4: Comparison of mean blood loss between both groups for gravida

Group	N	Mean	SD	P value
Comparison of mean blood loss between both groups for primigravida				
Blunt group	15	187.33	60.794	0.000
Sharp group	12	812.92	141.942	
Comparison of mean blood loss between both groups for multigravida				
Blunt group	13	212.69	55.476	0.000
Sharp group	20	759.25	152.482	
Comparison of mean blood loss between both groups for grandmultigravida				
Blunt group	9	209.44	69.975	0.000
Sharp group	5	799.00	203.175	

Table 5: Comparison of mean blood loss between both groups for C-section

Group	N	Mean	SD	P value
Comparison of mean blood loss between both groups for elective C-section				
Blunt group	24	197.50	56.932	0.000
Sharp group	20	772.75	146.507	
Comparison of mean blood loss between both groups for emergency C-section				
Blunt group	13	209.23	69.127	0.000
Sharp group	17	792.94	165.869	

## DISCUSSION

This was a comparative study between blunt and sharp expansion of uterine incision at lower segment cesarean delivery in term of intraoperative hemorrhage.

Mean age was  $32.31 \pm 6.246$  years, in blunt and sharp group, mean age was  $35.70 \pm 4.122$  years and  $28.92 \pm 6.202$  years. Most of the patients were between 31-40 years. In study of Nomura RMY et al<sup>8</sup> mean age was 28.4 years which is comparable with our study. In studies of Ali M et al<sup>9</sup>, Malathi J et al<sup>10</sup> and Ghazi A et al<sup>11</sup> most of the patients were between 20 to 30 years.

In study of Al Nuaim L et al<sup>12</sup> most of the patients were between 25-34 years. Mean blood loss in blunt group was  $201.62 \pm 60.794$  ml while in sharp group was  $782.03 \pm 153.819$  ml. There was significant (P=0.000) difference of mean blood was seen between blunt and sharp group. In study of Razzaq et al,<sup>13</sup> in blunt group and sharp group mean intraoperative blood loss was  $365.51 \pm 64.77$  ml and  $407.41 \pm 62.67$  ml. In another study by Shamsi et al,<sup>14</sup> mean blood loss in blunt group was  $805.80 \pm 326.95$  ml as compared to  $750.40 \pm 247.99$  ml in the sharp group.

Nousheen J et al<sup>15</sup> reported mean blood loss as  $675.50 \pm 252.08$  ml and  $712.06 \pm 344.34$  ml respectively in blunt and sharp group. In study of Magann EF et al<sup>16</sup>, mean blood loss was 886 ml and 843ml in blunt and sharp group. Study of Sekhavat et al reported blood loss in blunt group as  $375 \pm 95$  ml,<sup>17</sup> while Olaleye et al reported blood loss in sharp group as  $419.44 \pm 101.66$  ml.<sup>18</sup>

Razzaq et al<sup>19</sup> reported mean intra-operative blood loss in blunt group as  $365.51 \pm 64.77$  ml and in sharp group as  $407.41 \pm 62.67$  ml and the difference between the mean blood loss was statistically significant with p value p-value<0.0001.

## CONCLUSION

Results of present study reflects that there is significant difference of intraoperative mean blood loss between blunt and sharp groups. Most of the patients were between 31-40 years of age. After stratification of age, gestational age, parity and type of C-section, it was found that there is significantly low mean blood loss in blunt group as compared to sharp group.

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