

ORIGINAL ARTICLE

Comparison of Intraoperative Hemorrhage by Blunt Versus Sharp Expansion of Uterine Incision at Lower Segment Cesaeren DeliveryHUMAIRA SHAHEEN¹, SADIA ZAHOR², NADIA ZULFIQAR³, BILQEES AKHTAR MALIK⁴, ZAFAR IQBAL⁵, MUHAMMAD TAHIR⁶¹Assistant Professor, Department of Obstetrics and Gynecology D.G. Khan Medical College, D.G. Khan²Associate Professor, Department of Obstetrics and Gynecology Sheikh Zayed Medical College and Hospital, Rahim Yar Khan³Assistant Professor, Department of Obstetrics and gynecology Aziz Fatimah Hospital Faisalabad⁴Classified Gynecologist, Department of Obstetrics & Gynecology PEMH Rawalpindi⁵Assistant Professor, Department of Statistics The Islamia University of Bahawalpur⁶Statistical Analyst, Final Semester Department of Statistics The Islamia University of BahawalpurCorresponding author: Humaira Shaheen, Email: 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 ± 6.246 years, in Blunt and Sharp group, mean age was 35.70 ± 4.122 years and 28.92 ± 6.202 years. In Blunt group, mean blood loss was 201.62 ± 60.794 ml while in sharp group was 782.03 ± 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.¹ 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.² Another approach is to use fingers rather than scissors to bluntly expand the uterine incision.³ 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.⁴ A quicker birth and a lower risk of injury to the newborn and umbilical cord are two other potential benefits.⁵ 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.⁶ The probability of endometritis following caesarean delivery is affected negatively by the blunt division of the uterine wall.⁷

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 ≤ 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 ≤ 0.05 was considered statistically significant.

RESULTS

Mean age was 32.31 ± 6.246 years, in blunt and sharp group, mean age was 35.70 ± 4.122 years and 28.92 ± 6.202 years. Mean blood loss in blunt group was 201.62 ± 60.794 ml while in sharp group was 782.03 ± 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 ± 83.964 ml while in sharp group was 741.09 ± 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 ± 58.173 ml and 849.29 ± 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 ± 61.445 ml in blunt group while in sharp group, mean blood loss was 742.50 ± 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 ± 55.607 ml and 840.00 ± 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 ± 60.794 ml while in sharp group was 812.92 ± 141.942 ml. Difference was significant with p value 0.000. Among multigravidas, mean blood loss in blunt group was 212.69 ± 55.476 ml and in sharp group was 759.25 ± 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 ± 69.975 ml and 799.00 ± 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 ± 56.932 ml and 772.75 ± 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 ± 69.127 ml and 792.94 ± 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 ± 6.246 years, in blunt and sharp group, mean age was 35.70 ± 4.122 years and 28.92 ± 6.202 years. Most of the patients were between 31-40 years. In study of Nomura RMY et al⁸ mean age was 28.4 years which is comparable with our study. In studies of Ali M et al⁹, Malathi J et al¹⁰ and Ghazi A et al¹¹ most of the patients were between 20 to 30 years.

In study of Al Nuaim L et al¹² most of the patients were between 25-34 years. Mean blood loss in blunt group was 201.62 ± 60.794 ml while in sharp group was 782.03 ± 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,¹³ in blunt group and sharp group mean intraoperative blood loss was 365.51 ± 64.77 ml and 407.41 ± 62.67 ml. In another study by Shamsi et al,¹⁴ mean blood loss in blunt group was 805.80 ± 326.95 ml as compared to 750.40 ± 247.99 ml in the sharp group.

Nousheen J et al¹⁵ reported mean blood loss as 675.50 ± 252.08 ml and 712.06 ± 344.34 ml respectively in blunt and sharp group. In study of Magann EF et al¹⁶, 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 ± 95 ml,¹⁷ while Olaleye et al reported blood loss in sharp group as 419.44 ± 101.66 ml.¹⁸

Razzaq et al¹⁹ reported mean intra-operative blood loss in blunt group as 365.51 ± 64.77 ml and in sharp group as 407.41 ± 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.

REFERENCES

- Betran AP, Merialdi M, Lauer JA. Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinatal Epidemiol* 2007;21:98-113.
- Bolla D, Schöning A, Drack G, Hornung R. Technical aspects of the cesarean section. *Gynecol Surg* 2010;7:127-32.
- Berghella V, Baxter JK, Chauhan SP. Evidence-based surgery for cesarean delivery. *Am J Obstet Gynecol* 2005;193:1607-17.
- Hameed N, Ali MA. Maternal blood loss by expansion of uterine incision at cesarean section: a comparison between sharp and blunt techniques. *J Ayub Med Coll Abbottabad* 2004;16:47-50.
- Song SH, Oh MJ, Kim T, Hur JY, Saw HS, Park YK. Finger-assisted stretching technique for cesarean section. *Int J Gynaecol Obstet* 2006;92:212-6.
- Dodd JM, Anderson ER, Gates S. Surgical techniques for uterine incision and uterine closure at the time of cesarean section. *Cochrane Database Syst Rev (Online)* 2008;CD004732.
- Olsen MA, Butler AM, Willers DM, Gross GA, Devkota P, Fraser VJ. Risk factors for endometritis after low transverse cesarean delivery. *Infect Control Hosp Epidemiol* 2010;31:69-77.
- Nomura RMY, Alves EA, Zugaib M. Maternal complications associated with type of delivery in a university hospital. *Rev Saude Publica*. 2004;38(1):1-9.
- Ali M, Ahmad M, Hafeez R. Maternal and fetal outcome, comparison between emergency caesarean section versus elective caesarean section. *Prof Med J*. 2005;12:32-9.
- Malathi J, Sunita V. Comparison of obstetric outcome between first and second stage cesarean sections in rural tertiary hospital. *Int J Pharm Biomed Res*. 2012;3(4):222-25.
- Ghazi A, Karim F, Hussain AM, Ali T, Jabbar S. Maternal morbidity in emergency versus elective caesarean section at tertiary care hospital. *J Ayub Med Coll Abbottabad* 2012;24(1):10-3.
- Al Nuaim L, Soltan MH, Khashoggi T, Addar M, Chowdhury N, Adelusi B. Outcome in elective and emergency cesarean section: a comparative study. *Ann Saudi Med*. 1996;16(6):645-49.
- Razzaq M, Razaq F, Irshad A. Comparison of Intra-Operative Blood Loss by Blunt Versus Sharp Expansion of the Uterine Incision at Lower Segment Cesarean Delivery. *PJMHS*. 2016 Oct 1;10(4):1437-40.
- Shamsi A, Akhtar S, Mohyudin S. Comparison of intraoperative haemorrhage by blunt versus sharp expansion of the uterine incision at cesarean section. *PAFMJ*. 2005 Sep 30;5(3):208-13.
- Nousheen J, Tanveer S, Tariq S. Comparison of intra operative haemorrhage by blunt versus sharp expansion of the uterine incision at cesarean section. *Pak Armed Forces Med J*. 2012;1:233-5.
- Magann EF, Chauhan SP, Bufkin L, Field K, Roberts WE, Martin JN Jr. Intra-operative haemorrhage by blunt versus sharp expansion of the uterine incision at cesarean delivery: a randomised clinical trial. *BJOG*. 2002 Apr;109(4):448-52.
- Sekhavat LI, Dehghani Firozabadi R, Mojiri P. Effect of expansion technique of uterine incision on maternal blood loss in cesarean section. *Arch Gynecol Obstet*. 2010;282(5):475-9.
- Olaleye OA. Maternal blood loss by mode of uterine incision at cesarean section: A comparison between sharp and blunt techniques. *Ibom Medical Journal*. 2008 Feb 1;3(1):30-5.
- Razzaq M, Razaq F, Irshad A. Comparison of Intra-Operative Blood Loss by Blunt Versus Sharp Expansion of the Uterine Incision at Lower Segment Cesarean Delivery. *PAKISTAN JOURNAL OF MEDICAL & HEALTH SCIENCES*. 2016 Oct 1;10(4):1437-40.