



## Comparative Study of Controlled Cord traction versus Manual Removal of Placenta in Cesarean Section

### KEYWORDS

Cesarean section, Removal of Placenta, Controlled cord traction, Manual removal of placenta

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**ABSTRACT** A) Purpose- To evaluate and compare two methods of placental delivery i.e. (A) Controlled cord traction & (B) Manual removal of placenta, at the time of cesarean section.

B) Methods- Prospective randomized study was conducted from February 2010 to June 2011, on 200 pregnant women undergoing emergency or elective cesarean delivery at term in VDr. Baba Saheb Ambedkar Hospital, Delhi. Intraoperative blood loss, pre & postoperative hemoglobin, endometritis and intraoperative blood splashes noted.

C) Results- Mean blood loss in Group I was 705.14+73.65 ml while mean blood loss in Group II was 803.97+112.69 ml. There was increased incidence of endometriosis in Group II.

D) Conclusions- In present study controlled cord traction was found to be a more safe method in relation to intraoperative blood loss which was significantly lower than manual removal of placenta. There was significantly less incidence of Endometritis and postoperative decrease in hemoglobin, in Group I as compared to Group II.

### INTRODUCTION

Worldwide caesarean section is the most common major operation performed on women. Caesarean section ensures safe baby, while for mother, delivery by caesarean section causes some complications as compared to normal vaginal delivery. Providing high quality obstetric care can save the lives of mothers and newborns when complications arise during pregnancy and childbirth<sup>1</sup>, and caesarean section (CS) is one such essential service. Population-based estimates of CS percentage have been used as an indicator of access to emergency obstetric care<sup>2</sup>. Recognized intraoperative surgical complications include damage to adjacent organs, including bladder, urinary tract or bowel, as well as unintentional damage to the uterus or cervix<sup>3</sup>. The occurrence of one or more of these complications is reported to be approximately 12%<sup>3,4</sup>. Some of the reported short-term morbidities include haemorrhage, need for blood transfusion, postoperative fever and endometritis (infection of the endometrial lining of the uterus). Long-term morbidities include placenta previa (in which the placenta covers all or part of the cervical os), placenta accreta (in which the placenta is abnormally attached to uterine wall). Various techniques were tried and used to decrease the blood loss in cesarean delivery; one of them is method of removal of placenta (Manual removal of placenta of controlled cord traction)<sup>5,6,7</sup>.

### AIM

To evaluate and compare two methods of placental delivery i.e. (A) Controlled cord traction & (B) Manual removal of placenta, at the time of cesarean section.

### OBJECTIVES

To study impact of method of placental delivery on:

- I. Intraoperative blood loss,
- II. Fall in Hemoglobin (Postoperative),
- III. Endometritis,
- IV. Duration of cesarean section and

V. Blood splash.

### MATERIALS AND METHODS

• Prospective randomized study was conducted from February 2010 to June 2011, on 200 pregnant women undergoing emergency or elective cesarean delivery at term in the Department Of Obstetrics and Gynecology, Dr. Baba Saheb Ambedkar Hospital, Govt. of NCT Delhi. 100 patients were in controlled cord of traction (Group I) and 100 were in manual removal of placenta a group (Group II). Statistical analysis performed by using statistical software SPSS version 13. Parameters taken in account were -

- Intra-operative blood loss measured.
- Hemoglobin level measured preoperative ly and post-operatively after 48 hours of surgery.
- Endometritis diagnosed in those patients with parametrial tenderness, a progressive leukocytosis and at least two temperature elevations (38°C or more) 6 hours apart after the first 24 hours postpartum.
- time recorded by the Operative circulating nurse from initial skin incision to skin closure.
- Macroscopic splashes on the goggles or eye shields, surgical masks of surgeons, assistants and scrub nurses worn during cesarean section were noted.

### INCLUSION CRITERIA

- Patient of age group 18-35 years,
- Pregnancy >37 weeks,
- Patient willing to participate in study.

### EXCLUSION CRITERIA

- Gestational age less than 37 weeks or more than 42 weeks,
- Multiple pregnancy,
- Polyhydramnios and oligohydramnios,
- Placenta previa,
- Abruptio placentae,

- Pregnancy induced hypertension,
- Chorioamnionitis,
- Obstructed labour,
- DIC and Coagulopathy,
- Patient on prophylactic antibiotics and
- Patients with premature rupture of membranes.

**RESULTS AND DISCUSSION**

• **BLOOD LOSS DURING CESAREAN DELIVERY**-Mean blood loss in Group I was 705.14+73.65 ml while mean blood loss in Group II was 803.97+112.69 ml. We observed that blood loss in manual group was higher as compared to controlled cord traction group. The difference between two values is highly significant (p value <0.01). This study is supporting other studies by Dehbashia S et al, Gol M, Baloglub A et al, Ramadan H. et al, Waqar F, Nasar R et al & Gahlot A, Suman A.<sup>8-12</sup> that manual removal of placenta causes mor blood loss.

**Table (1)- BLOOD LOSS DURING CESAREAN DELIVERY**

Blood Loss(ml)	Controlled Cord Traction		Manual Removal	
	No.	%	No.	%
400-500	2	2	2	2
501-600	5	5	0	0
601-700	35	35	6	6
701-800	54	54	38	38
801-900	4	4	53	53
>900	0	0	1	1
Total	100	100	100	100

**Table(2)- MEAN BLOOD LOSS DURING CESAREAN DELIVERY**

	Controlled cord	Traction	Manual Removal	P value
Blood Loss (ml)	705.14±73.65		803.97±112.69	<0.001

• **CHANGE IN HEMOGLOBIN**- In our study the mean value of hemoglobin before surgery in Group I and Group II was 11.41 +1.07 gm/dl and 11.33+1.44 gm/dl respectively. The mean value of hemoglobin in both groups were almost similar which is statistically not significant (p value >0.05). The mean value of Hemoglobin after 48 hours of surgery in Group I was 10.71 +1.17 gm/dl and in Group II was 9.74+1.23 gm/dl. It revealed that the mean value of hemoglobin after 48 hours of surgery in Group I is higher as compared to Group II. These two mean values of hemoglobin differ significantly (p value <0.001). This study is supportive to study by Dehbashia S et al, Gol M, Baloglub A et al, Ramadan H. et al, Waqar F, Nasar R et al & Gahlot A, Suman A.<sup>8-12</sup>.

**Table(3) MEAN Hb IN CCT AND MANUAL GROUP**

Hemoglobin(gm/dl)	CCT	Manual	p-Value	Significance
Before Surgery	11.41±1.07	11.33±1.44	0.3719	Insignificant
After 48 hrs of surgery	10.71±1.17	9.74±1.23	<0.001	Significant

**Table (4)- MEAN DECREASE IN HB (DIFFERENCE BETWEEN BEFORE AND AFTER 48 hr of SURGERY)**

Before Surgery v/s 48 hours after surgery in Group A	Before Surgery v/s 48 hours after surgery in Group B	p-Value
1.308±0.364	1.566±.434	0.0009 (significant)

• **ENDOMETRITIS**-In present study we found that postoperative infectious morbidity (endometritis) developed in controlled cord traction group 22(22%) patients whereas

in manual removal group it was in 38(38%) patients when procedure was done on intact membrane and all patient received prophylactic antibiotic. (9)

• **TIME TAKEN FOR PLACENTAL DELIVERY AND CE SAREAN SECTION**- Most of the patients 48(48%) of controlled cord traction group (Group A) were in 60-80 seconds group and in manual removal group (Group B) 55(55%) patients were in 40-60seconds group. The mean time taken in separation of placenta as seen in the controlled cord traction group was 75.1 +19.44 seconds while in manual removal of placenta group it took an average 50.2+9.99 seconds. The difference in the time interval was roughly 24.9seconds that was statistically significant (p=0.001). The duration of operation was not, significantly different ( p value was 0.4423 i.e. insignificant) in present study. In controlled cord traction group mean duration of surgery was 38.7+6.79 minutes while in manual removal group mean duration of surgery was 38.9+5.5 minutes.

• **BLOOD SPLASH**- Present study shows that occurrence of blood splash was 10 % controlled cord traction group and 17% in manual removal group. There was less blood splash in controlled cord traction group but was statistically insignificant.

**CONCLUSION**

• Caesarean section rates are rising worldwide and becoming a cause for concern because caesarean section has been shown to be positively associated with maternal mortality and morbidity.

• Method of placental delivery in cesarean section has significant impact on hemorrhage, infectious morbidity (Endometritis) and fall in hemoglobin. • In present study controlled cord traction was found to be a more safe method in relation to intraoperative blood loss which was significantly lower than manual removal of placenta. There was significantly less incidence of Endometritis and postoperative decrease in hemoglobin, in controlled cord traction as compared to manual removal.

• It was found that by manual removal of placenta time of placental delivery was significantly shorter but there was no difference in total duration of operation

• Blood splashes were more in manual removal group then controlled cord traction, but statistically not significant. To establish association between blood splash and placental removal; large multicenter trials are required on more number of patients.

• By the present study we came to the conclusion that placental delivery by controlled cord traction in cesarean section results in; less blood loss, decrease incidence of endometritis, and less fall in hemoglobin without any increase in the operative time. Reduced blood loss and endometritis helps in decreasing postoperative morbidity and improves the post operative recovery of the patient.

• Thus by present study we can conclude that controlled cord traction is better method of placental delivery than manual removal during cesarean section.

**REFERENCE**

- Kongnyuy EJ, Hofman JJ, van den Broek N: Ensuring effective essential obstetric care in resource poor settings. BJOG 2009, 116(Suppl 1):41-47. | 2. WHO, UNFPA, UNICEF, AMDD: Monitoring Emergency Obstetric Care A Handbook. In . Geneva: WHO; 2009:152. Accessed 26.02.2014. | 3. • Bergholt T, Stenderup JK, Vedsted-Jakobsen A, Helm P, Lenstrup C. Intraoperative surgical complication during cesarean section: an observational study of the incidence and risk factors. Acta Obstet. Gynecol. Scand. 82(3), 251–256 (2003). | 4. Nielsen TF, Hokegard KH. Cesarean section and intraoperative surgical complications. Acta Obstet. Gynecol. Scand. 63(2), 103–108 (1984). | 5. Anorlu Ri, Maholwana B, Hofmeyr Gj. Methods of delivering the placenta at caesarean section. Cochrane Database Syst Rev.2008;(3):CD004737. | 6. Goonewardene M. Methods of delivering the placenta at caesarean section : RHL commentary | 7. (last revised: 1 August 2009).The WHO Reproductive Health Library; Geneva: World Health Organization. | 8. Dehbashia S, Honarvarb M, Fardi FH. Manual removal or spontaneous placental delivery and postcesarean endometritis and bleeding. Int J Gynecol Obstet. 2004;86:12-5. | 9. Gol M, Baloglub A, Aydin Ç, Ovab L, Yenselb U, Karci L. Does manual removal of the placenta affect operative blood loss during cesarean section?. Eur J Obstet Gynecol Repord Biol .2004 Jan 15;112(1):57-60. | 10. Ramadani H. Cesarean section intraoperative blood loss and mode of placental separation. Int J Gynecol Obstet. 2004;87(2):114-8. | 11. Waqar F, Nasar R, Fadad A.The comparision of placental removal methods on operative blood loss. J Ayub Med Coll Abbottabad 2008;20(3):3-5. | 12. Gahlot A, Suman A. Spontaneous delivery or manual removal of the placenta during cesarean section: A randomized controlled trial. J Obstet Gynecol India 2009;59:127-130. |