

Randomized Control Study of Extra Peritoneal Verses Trans Peritoneal Cesarean Section in View of Operative Morbidity

Nitin Kulkarni¹, Richa Patel²

Author's Affiliation:

¹Associate Professor ²Senior Resident, Department of Obstetrics and Gynaecology, ACPM Medical College, Dhule-424001 Maharashtra, India.

Corresponding Author:

Nitin Kulkarni
Associate Professor,
Department of
Obstetrics and Gynaecology,
ACPM Medical College, Dhule-
424001 Maharashtra, India.
E-mail:
Kulkarnink76@gmail.com

Received on 27 June 2017

Accepted on 11 July 2017

Abstract

Introduction: Increase incidence of caesarean section is a major concern in today's era. Caeser may be performed in one of the three way, by classic technique, by lower segment or by some form of extraperitoneal cesarean section. The earliest extraperitoneal technique used was Latzko's as introduced by Dr Henry Burns. Extraperitoneal cesarean section is a useful method of preventing postoperative morbidity in form of infections & adhesions. Early ambulation, Start oral fluids immediately and get the patient out of bed as soon as the anesthesia worn off are supposed to be advantages of this new study of old technique. *Objective:* To evaluate advantages or disadvantages of extra peritoneal caesarean section over trans peritoneal caesarean section. *Study Design:* Single blinded Randomized prospective control trial were performed over 66 patients in our tertiary care institute. Intra operative complications morbidity and outcome compared by scaling signs, symptoms & examination findings by single consultant. *Results:* Patients of ECS had better score for postoperative pain, ambulation & oral intake there were less requirement of analgesic in ECS group. Post-operative nausea, shoulder pain febrile episodes peritonitis genitourinary tract infection & bowel discomfort were very minimal in ECS group compared to TCS group. *Conclusion:* An extra peritoneal c- section is definitely advantageous over transperitoneal approach of lower segment caesarean section. There is no need for post-operative starvation, and ileus after this method is rare. Early mobilization reduces the risk of thrombosis and shortens post-operative pain. Less pain makes early commencement of breastfeeding easier within the first hours after the operation. This will also help contraction and involution of the uterus. Early removal of stitches reduces the risk of infection and keloids.

Keywords: Extraperitoneal Caesarean Section (ECS); Transperitoneal Caesarean Section (TCS).

Introduction

Increase incidence of caesarean section is a major concern in today's era. Caesarean may be performed in one of the three way by classic technique, by lower segment or by some form of extra peritoneal cesarean section. The earliest Extra peritoneal technique used by Latzko's, as introduced by Dr Henry Burns [1,2]. Extra peritoneal cesarean section is a useful method of preventing postoperative morbidity in the

form of infections & adhesions.

Waters [3] and Norton [4] have added to the recent refinement of this type of cesarean section and, in their large series of cases, have shown this approach to be practical, safe, and within the technical skill of the trained obstetric surgeon. Early ambulation, oral fluids and get the patient out of bed as soon as the anesthesia worn off are supposed to be advantages of this new study of old technique but it is adapted by 2% of obstetrician rest of the obstetrician are

performing trans peritoneal C-section because of less exposure to extra peritoneal c-section during training period, hence we performed this trial.

Aims & Objective

To evaluate advantages of extra peritoneal caesarean section over trans- peritoneal caesarean section.

Material and Methods

In this prospective randomized single blinded study we operated total 66 patients. In which 33 patients underwent caesarean by transperitoneal approach . All elective and emergency cases who required LSCS for different indications were included in the study, cases with history of previous two or more abdominal surgery previous bladder surgeries patient willing for tubal ligation and suspected cases of placenta increta or percreta were exclude from study.

All patient were operated under spinal anaesthesia with 25 no spinal needle and bupivacain. Intraoperative complains like nausea, vomiting, time duration of procedure and complications like surgical injuries to bladder / ureter, post partum haemorrhages were noted.

Postoperative abdominal pains, gastro-intestinal discomfort were noted by junior residents who were blind to randomization of patients in the study. Pstoperative pain was noted by numeric rating scale. On fifth post-operative day that is at time of discharge questionnaire put to the patients regarding symptoms and which was noted by numeric rating scale from 0-10 from best to worst.

Extra Peritoneal Technique which is Followed in the Present Study

Incision we preferred in all cases was pfannenstiel. The bladder kept distended either by not draining with Foleys or if empty then reterograde filling atleast 200cc through Foleys by normal saline. Recti are separated from parital peritoneum more towards laterally upto obliterated umbilical artery bladder fascia is dissected and bladder is retracted to other side to complete expose lower segment with sharp dissection, uterovesical fold pushed down with the help of retractors to creat ample of space some times bladder pushed away from field with blunt dissection with gauze thus the perivesical fascia is cut away from bladder as well as uterine fascia, Incision on

lower uterine segment delivery of foetus and closure of lower uterine segment done as same like transperitoneal.



Fig. 1: Cutting the linea alba and separating recti from the peritoneum

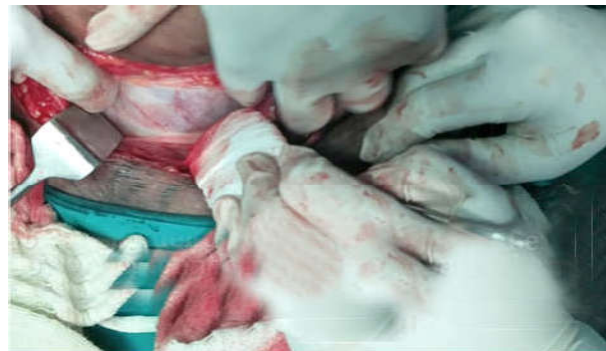


Fig. 2: Lower segment of uterus approached extra peritoneally

Care To Be Taken In Extraperitoneal Casarean Section

Extra peritoneal cesarean section is not too difficult for the obstetritian although its not simple. Difficulties which can be there in case of dextorotation, close proximity of uterus varicosity at the bladder base and macrosomic fetuses, hence we will suggest the following:-

1. Avoid injury to adjacent structure like bladder, ureter.
2. Keep proper exposure of dissected tissues.
3. Provide ample space for delivering foetus of any size.
4. Avoid opening the peritoneum during and after extraction of foetus.
5. Complete homeostasis achieved before closure.

Results

Total 70 patients participated in the study 35 were randomized to study group (ECS) and 35 were allotted to control group (TCS).

Surgeries of study group were performed by same consultant and two residents. Surgeries of control

group were performed by consultant and residents of other unit.

In study group peritoneum is accidentally open in two patients. Out of 35 of control group two patients of previous LSCS surgeon found difficulty in opening the peritoneum hence total 4 patients were excluded from study to avoid bias.

All different parameters including intraoperative nausea, vomiting, baby delivery interval, operative

time & Apgar score noted along with main parameter in the form of post operative abdominal pain, requirement of analgesics, time interval for ambulation and post operative gastrointestinal discomfort noted.

Results were as follows

Table 1: Age distribution ,parity and indication for cesarean section

Variable Factors		ECS (N=33)	TCS (N=33)	P Value
Age	Mean+ _SD	25.6±3.8	26.2±4.3	0.272
Parity	primigravida	17(51.5)	19(57.5)	<0.01
	multigravida	16(48.5)	14(42.5)	<0.01
Indications	CPD	8(24)	10(30)	<0.01
	Malpresentation	4(12)	5(15)	<0.01
	Fetal distress	7(21)	6(18)	<0.01
	Preeclmpsia	5(15)	4(12)	<0.01
	Previous l.s.c.s	6(18)	7(21)	<0.01
	Others	3(9)	1(3)	

Table 2: Peak pain and requirement of analgesics in postoperative period in both the group

	ESC		TCS	
	Peak Pain	Doses of Analgesic	Peak Pain	Doses of Analgesic
Operative Day	Mean 4	7	Mean 5	2-3
Post op day 1	Mean 3	1	Mean 4	2
Post op day 2	Mean 1	1	Mean 2	1

Table 3: Intraoperative and postoperative secondary parameters

Parameters	ECS (N=33)	TCS (N=33)
Intra op nausea /vomiting	1	5
Shoulder pain	0	3
Urinary tract discomfort	0	1
Intestinal discomfort	0	2
Time interval for oral	4 hrs(3-8hrs)	12 hrs
Time interval for ambulation	12 hrs (8-18hrs)	18 hrs(12-24hrs)
Delivery time	5 minutes(3-7 min)	5minutes(3-6 min)
Apgar at :		
1 minute	8	8
5 minute	9	9
10 minute	10	10

Table 4: Follow up till 8 weeks post operatively

Parameters	ECS	TCS
Wound infection	0	0
Urinary tract infection	0	1
Need of analgesics	2	4

Discussion

In this trial of ECS when compared with TCS shows significantly less maternal morbidity on the

basis of parameters noted intra operatively and postoperatively also.

Intra operative minor ailments like nausea, vomiting, chest discomfort were significantly less in

ECS. Incision to baby delivery time interval was almost same in ECS & TCS. There were no significant difference in apgar score because of different approach. Post operatively definitely there is less requirement of analgesics because of significant difference in peak pain when compared to TCS group. All this difference is most likely because of absence of peritoneal irritation & no bowel handling [5]. Patient operated by ECS were able to ambulate and start oral earlier as compare to those by TCS.

Long term follow up till 8 weeks shows there was less surgical morbidity on basis of less wound/ urinary infection [6] and less requirement of analgesics [7]. Over all satisfaction was more in ECS group.

As per the indication of c-section concern we did almost similar number of cases for different indications in both the group including repeat caesarean section. Few years ago following were the only indications for ECS were:

1. Labor over twenty-four hours
2. Ruptured membranes over twenty-four hours
3. Attempts at delivery by forceps or version
4. Induction of labor by bag, bougie, or pack
5. Evidence of uterine infection
6. More than six vaginal examinations
7. More than twelve rectal examinations
8. Dead or damaged fetus

In 1954 Athetan & Williamson commented that there was no advantage of ESC with appropriate antibiotic use [8]. A reterospective study by Reid in 1972 stated that maternal death following transperitoneal cesarean section would have been avoided by extraperitoneal approach [9].

Result of our study not only showing advantages related to infectious maternal morbidity but also shows that there is no significant difference in both groups as per the incision delivery time neonatal outcome and hospitalization concerned.

All literature supports the hypothesis that the extraperitoneal approach is not accepted, not because it lacks merit but because of other factors which include difficulty in learning, executing, implementing and teaching the technique [10].

Conclusion

To summaries results of randomized trial suggests that ECS reduces intra operative nausea without

prolong surgical and baby delivery timing. ECS in almost all cases can reduce post operative pain, need of analgesics and postoperative morbidity while giving earlier start of oral and ambulation for the speedy recovery of patients. An extra peritoneal c-section is definitely advantageous over transperitoneal approach of lower segment caesarean section. There is no need for post-operative starvation, and ileus after this method is rare. Early mobilization reduces the risk of throm-bosis and shortens post-operative pain. Less pain makes early commencement of breastfeeding easier within the first hours after the operation. This will also help contraction and involution of the uterus. Early removal of stitches reduces the risk of infection and keloids.

Acknowledgements

Authors wish to immensely thank Head of Obst & Gynaecology Dept. & Principal, ACPM Medical College.

Funding: No funding sources

Conflict of Interest: None declared

Ethical Approval: The study was approved by the Institutional Ethics Committee

References

1. Latzko, W.: Uber den extraperitonealen kaiserschmtl, Zentralbl. Gynaekol. 1909;33:275.
2. Burn, H Am J Obst & Gynae 1930;19:759.
3. Waters, E. G.: Supravesical extraperitoneal cesarean section. Experience with 250 operations, Am. J. Obstet.Gynecol, 1945;50.
4. Norton, J. F.: A paravesical extraperitoneal cesarean section technique, Am. J. Obstet.Gynecol. 1946;51: 519.
5. Bosio, B. B., and Taylor, E. S.: Bacteroides and puerperal infection, Obstet. Gynecol. 1973;42:271.
6. Gibbs, R. S., Hunt, J. E., and Schwarz, R. H.: A follow-up on prophylactic antibiotics in cesarean section, Am. J. Obstet.Gynecol. 1974;117: 419.
7. Gilbert, C. R. A, Valdares. J., Kaltreider, D. F., and Douglass, L.: Extraperitoneal cesarean section vs. the laparotrachelotomy -in the era of modern antibiotic therapy, Am. J. Obstet.Gynecol. 1953;66:79.
8. Atherton, H. E., and Williamson, P. J.: A clinical comparison of extraperitoneal cesarean section and low cervical cesarean section for the infected parturient, Am. J. Obstet.Gynecol. 1954;68:1091.

9. Reid, D.: Lethal puerperal sepsis, in Charles, D., and Finland, M., editors: *Obstetric and Perinatal Infections*, Philadelphia, 1973, Lea & Febiger, Publishers, 1973.p.519-527.
10. Paternite, C., and Bachoud, M. S.: Extraperitoneal cesarean section, Analysis of 93 consecutive operations, *Obstet. Gynecol.* 1954;3:283.
-

Red Flower Publication Pvt. Ltd.

Presents its Book Publications for sale

- | | |
|--|---------------------|
| 1. Breast Cancer: Biology, Prevention and Treatment | Rs.395/\$100 |
| 2. Child Intelligence | Rs.150/\$50 |
| 3. Pediatric Companion | Rs.250/\$50 |

Order from

Red Flower Publication Pvt. Ltd.

48/41-42, DSIDC, Pocket-II

Mayur Vihar Phase-I

Delhi - 110 091(India)

Phone: Phone: 91-11-45796900, 22754205, 22756995, Fax: 91-11-22754205

E-mail: sales@rfppl.co.in