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Evaluation of Intraoperative Outcome of Different Techniques of Lower Segment Caesarean Section

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Abstract

Obstetricians are constantly striving to make caesarean section safer and economical with less post-operative morbidity and decreased hospital stay. The simplest and most appropriate surgical method, causing the least possible damage to the tissue is sought.

This was an interventional study done over one year in a tertiary care hospital.Pfannenstiel Kerr (PK) and Misgav Ladach (ML) methods of lower segment caesarean section were compared.Incision to delivery of foetus and total operative time was lesser in Misgav Ladach method in comparison to the Pfannenstiel Kerr method and this difference was statistically significant.Since blunt dissection was done in MML method,the blood loss was also less. More suture material was used in Pfannenstiel Kerr method. MML was a better method as it satisfied the goal of good technique in caesarean section by having ease in opening the abdomen, short incision delivery interval ,causing least possible trauma to tissue with shorter total operative time, less blood loss, use of less suture material and simplified surgery.

Keywords: Caesarean, intraoperative, Misgav-Ladach, Pfannenstiel

Introduction

Caesarean section rate is increasing. In some teaching hospitals in India it is as high as 34.4%, as these are also the tertiary care referral units.[1]

Obstetricians are constantly striving to make caesarean section safer and economical with less post-operative morbidity and decreased hospital stay.Every surgical procedure has many step and it is important to examine every step to evaluate its necessity and efficacy in achieving its purpose, with a view to find better alternatives. The simplest and most appropriate surgical method, causing the least possible damage to the tissue is sought.

Despite its worldwide spread, a consensus on the most appropriate caesarean section technique has not yet still reached. The operative technique performed is based on the individual experiences and preferences of the surgeon, the characteristics of patients, timing and urgency of intervention.

The present study was undertaken to evaluate the intraoperative outcome of caesarean section done by different techniques.

Methods

This prospective study was conducted in a tertiary care centre. Singleton, live, primigravidae undergoing caesarean section were chosen.Woman with polyhydramnios, severe anaemia, sepsis or any medical disease were excluded. Pfannenstiel Kerr (PK) and Misgav Ladach (ML) methods of lower segment caesarean section were compared.Informed written consent was taken of all.

In PK method, a curved transverse supra-pubic incision was given in the abdominal skin, abdomen is opened by sharp dissection[2] Transverse lower uterine segment incision was given, uterus repaired in double layer and peritoneum was closed[3] In ML method, abdominal wall was opened by method described by Joel-Cohen et al [4] by transverse skin incision 5 cm above the symphysis pubis and blunt dissection of all abdominal walls. Suturing of the uterus was done in one layer and peritoneum was left open.[5]

Incision to delivery of foetus and incision to skin closure interval were noted. Amount of intraoperative bleeding and suture material used was recorded. Data collected was statistically analysed. P value <0.05 was taken as significant.

Results

Forty women each were operated by Pfannenstiel Kerr (PK) and Misgav Ladach (ML) method. In ML group, the FOETUS was extracted in all in less than 5 minutes and in 10% in less than 2.5 minutes whereas in the PK group, in less than half women it took between 2.5-5 minutes (in 42.5%) and more than 5 minutes in the rest. The mean time of skin incision to delivery of FOETUS in Misgav Ladach group was (3.23 ± 0.47) min which was significantly less than the Pfannenstiel group (4.8 ± 0.61) with P value of 0.001. Table 1.

Table I Comparison of Skin Incision to FOETUS Delivery Time

Skin incision to delivery time (minutes)	ML Group (N = 40)	PK Group (N = 40)	P value
≤ 2.5 min	4 (10%)	0 (0%)	<0.001 (S)
2.6 - 5 min	36 (90%)	17 (42.5%)	
>5 min	0 (0%)	23 (57.5%)	
Mean ± SD	3.23±0.47	4.8 ± 0.61	

Table II. Comparison of Skin Incision to Closure Interval

Skin incision to closure time (minutes)	Group A (N = 40)	Group B (N = 40)	P value
25 – 29 min	15(37.5%)	5 (12.5%)	<0.001 (S)
30 – 34 min	20 (50%)	7 (17.5%)	
≥ 35 min	5 (12.5%)	28 (70%)	
Mean ± SD	29.0 ± 4.6	34.8 ± 5.3	

The mean time of skin incision to closure in our study in Misgav Ladach group was (29.0± 4.6) min and it was significantly less than the Pfannenstiel group (34.8 ± 5.3) with P value of less than 0.001. Table 2.

Blood loss was measured by amount of blood in suction apparatus and weighing dry and wet mops and seeing difference in weight of both mops. In our study ,mean amount of blood loss in Misgav Ladach technique was 190 ± 30.4 ml which was significantly lower than Pfannenstiel Kerr method with a p value of <0.001. In Pfannenstiel Kerr method, mean amount of blood loss was 240.4±37.4 ml. Table 3.

We used lesser suture material in Misgav Ladach technique (3.33 ±0.57 packets) than Pfannenstiel Kerr method (4.05±0.78 packets) with a p value of <0.001.Table 4

Table III: Comparison of Blood Loss during Surgery

Blood loss (ml)	Group A (N = 40)	Group B (N = 40)	P value
< 200 ml	16 (40%)	3 (7.5%)	<0.001 (S)
≥ 200 ml	24 (60%)	37 (92.5%)	
Mean±SD	190 ± 30.4	240.4 ± 37.4	

Table IV. Comparison of Amount of Suture Material Used

Suture material required (no. of packets)	Group A(N = 40)	Group B (N = 40)	P value
Three	29 72.5%)	9 (22.5%)	
Four	9 (22.5%)	22 (55%)	<0.001 (S)
Five	2 (5%)	7 (17.5%)	
Six	0 (%)	2 (5%)	
Mean ± SD	3.33 ±0.57	4.05±0.78	

Discussion

Various authors [6,7] compared Misgav Ladach technique of caesearean section and Pfannenstiel Kerr and observed that the incision to delivery time was significantly lower in Misgav Ladach group.Shrinivas N et al (2017)[8], Adama O et al (2017)[9] and Sahin N et al (2018)[6] observed that Misgav-Ladach technique proved to be associated with shorter total operating time and suggested it to be preferred in all cases where a quick operation was required. The CORONIS Trial Collaborative Group Follow up Study (2016)[10] stated that peritoneal no closure results in a shorter operating time.

In Misgav Ladach Method abdomen is opened bluntly, uterus is closed in single layer and peritoneum is not closed and all these factors lead to reduction in mean operating time because technically, steps to perform are reduced.

The quick delivery of FOETUS after incision is helpful where every minute is precious for baby, as in fetal distress.

Similar to our findings, Shrinivas N et al (2017)[8],Gencdal N et al (2016)[11] also observed that compared with the PK (sharp dissection)group, the estimated blood loss was significantly less in blunt (MML)group.

It is not just the elegance, efficiency, and shorter duration of the operation that are related to the lower rate of morbidity, but also the less damage inflicted on the tissues during this procedure. Since most tissues have a certain amount of elasticity, the nerve fibers and perforating blood vessels remain intact and are moved aside to form the opening through which the lower segment of the uterus can be reached. The results are less trauma and less time taken in dissecting the subaponeurosis of the rectus sheath and therefore, less amount of blood loss. [11]

One-layer suturing (MML)the uterus is reported to result in less operative time, better hemostasis and less infectious morbidity than the two-layer closure(PK).Every unnecessary surgical step increases tissue damage and inflammatory response, with a consequent rise in hemorrhage, infection risk by increasing the exposure of wound to external environmental contaminants[12].

The lesser operative time leads to decrease risks of anaesthetic complication and thromboembolic complications and also leads to more efficient use of theatre time, thus reducing the total cost.[13]

In Misgav Ladach Method, lesser suture material was used as the uterus was repaired in single layer, peritoneum was not closed, muscle was not sutured and skin was sutured in 3-4 interrupted sutures.[9] In the CORONIS Trial Collaborative Group Follow up Study (2016)[10] does not recommend routine peritoneal closure The use of less suture material could decrease costs, which might be a significant factor in resource-poor countries like India.

References

1. Smriti Bhargava,Nupur Hooja,Sapna Aseri,Avantika Sharma,Bhomraj Kumawat,Sunita C Sihag.Analysis of Cesarean Sections in a Tertiary Care Hospital: According to Robson's 10-group Classification. J South Asian Feder Obst Gynae 2017;9(1):39-41.
2. Vitale SG, Marilli I, Cignini P, Padula F, D'Emidio L, Mangiafico L, Rapisarda AM, Gulino FA, Cianci S, Biondi A, Giorlandino C. Comparison between modified Misgav-Ladach and Pfannenstiel-Kerr techniques for Caesarean section: review of literature. J Prenatal Med. 2014 Apr;8(3-4):36. https://www.ncbi.nlm.nih.gov/pubmed/26265999
3. National Institute for Health and Clinical Excellence. CG132 Caesarean Section. Available at: http://guidance.nice.org.uk/CG132
4. Abalos E, Addo V, Brocklehurst P, El MS, Farrell B, Gray S, Hardy P, Juszczak E, Mathews JE, Masood SN, Oyarzun E. Caesarean section surgical techniques (CORONIS): a fractional, factorial, unmasked, randomised controlled trial. Lancet (London, England). 2013 Jul;382(9888):234-48. https://www.ncbi.nlm.nih.gov/pubmed/27155903
5. Enkin MW, Wilkinson C. Single versus two layer suturing for closing the uterine incision at caesarean section. The Cochrane database of systematic reviews. 2000(2):CD000192-. https://www.ncbi.nlm.nih.gov/pubmed/10796177
6. Şahin N, Genc M, Turan GA, Kasap E, Güçlü S. A comparison of 2 Caesarean section methods, modified Misgav-Ladach and Pfannensteil-Kerr: A randomized controlled study. Advances in clinical and experimental medicine: official organ Wroclaw Medical University. 2018 Mar.
7. Moradan S, Mirmohammadkhani M. Comparison of Misgav-Ladach and Pfannensteil-Kerr Techniques for Caesarean Section: A Randomized Controlled Trial Study. Middle East Journal of Rehabilitation and Health. 2016;3(4).
8. Srinivas N Gadappa,Pratibha V Dixit,Deepika Sharma,Yogita Gavit.Clinical study of Misgav Ladach technique of caesarean section. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2017 Dec 23;6(12):5532-5.
9. Adama O, Barnabé YR, Gueswendé KF, Sibraogo K, Paul KD, Alexi SY, Yissou D, Issa O, Marie OC, Ali O. Prognosis of Misgav-Ladach Caesarean Sections in an African Environment: Case of the Banfora Regional Hospital in Burkina Faso about 110 Cases. Open Journal of Obstetrics and Gynecology. 2017 Aug 30;7(09):1006.
10. Caesarean section surgical techniques: 3 year follow-up of the CORONIS fractional, factorial, unmasked, randomised controlled trial. The CORONIS collaborative group. Lancet 2016; 388: 62–72.
11. Gencdal N, Gencdal S, Ekmekci E. Comparison of Pfannensteil Kerr and Modified Misgav Ladach Methods of Caeserean Operation. of. 2016;5:2
12. Tabasi Z, Mahdian M, Abedzadeh-Kalahroudi M. Closure or non–closure of peritoneum in Caesarean section: outcomes of shortterm complications. Arch Trauma Res. 2013: 1(4): 176-9.
13. Noreen S, Alam M, Khan WY, Sultana R, Gul S.A comparison of peritoneal closure with non-closure for short term morbidity in emergency lower segment Caesarean section KJMS. January-April. 2015; 8(1):76-9.

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