ORIGINAL ARTICLE

Operative Morbidities among Patients with Previous Caesarean Sections

Samia Ghaffar[1], Tabassum Shaheen[2], Bushra Ghaffar[3], Sunia Ghaffar[4], Hala Haq[5], Fatima Khawar[6]

ABSTRACT

Objective: To determine the frequency of different operative morbidities among patients with previous one and previous two caesarean sections.

Study Design: Cross sectional study.

Place and Duration of Study: Study was carried out in department of Obstetrics and Gynecology of Nishtar Hospital Multan, from 13th January 2016 to 12th June 2016.

Materials and Methods: Three hundred and thirty-six women of reproductive age group having previous one or two cesarean sections undergoing emergency or elective cesarean section with gestational amenorrhea of >30 weeks were included. Women with medical illness e.g. cardiac, hypertension, renal, diabetes, uterine anomalies e.g. sub septate or bicornuate uterus were excluded. In all these women, type of maternal morbidities was noted in term of presence or absence of thick intraoperative adhesions, extremely weakened lower uterine segment and wound dehiscence.

Results: Age of women ranged between 18 to 45 years with 33.279± 5.33 years mean age. Mainstream of the women were between 26 to 35 years. Parity range of this study was from 1 - 4. Mean gestational age was 37.122 ±1.48 weeks, while mean number of previous C section was 1.610±0.48. Dense intraoperative adhesions found in 56.5%, extremely thinned out lower uterine part found in 23.5% and scar dehiscence was found in 13.7% of the total patients. When comparing outcomes in ladies with previous one and previous two cesarean sections, dense intraoperative adhesions was 23.7% versus 77.6% (p=0.000), extremely thinned out lower uterine segment was 31.3% versus 18.5% and scar dehiscence was 29% versus 3.9% respectively.

Conclusion: Females with history of recurrent cesarean section have possibility of having several intraoperative morbidities, which could escalate the frequency of maternal illness and deaths.

Key Words: *Cesarean Section, Dense Intraoperative Adhesions, Scar Dehiscence.*

Introduction

Caesarean section is the delivery of baby done by an operative incision made through the abdomen and the uterus, in order to save maternal and fetal life.[1] Initially cesarean sections were executed to deliver the fetus from mother in an effort to protect the fetus of a moribund woman but now a days it has become another mode of delivery.[2]

Since 1980s, worldwide rate of Caesarean section has risen extensively in all developing and developed countries.[3] Rendering to the World Health Organization (WHO) recommendations, Nationwide rates of c-sections should not surpass 5 to 15 per 100 live births.[1,4] The rate of cesarean deliveries recommended by the WHO has exceeded by various countries like India, Brazil, USA , Australia, China etc., similarly it has also increased in Pakistan.[1]

There are numerous indications of cesarean deliveries, but cesarean delivery due to previous cesarean sections is a main indication. The parallel rise in rate of cesarean section has caused scarred uterus in a number of patients and resulted in a gradual increase of maternal mortality and morbidity. Though, the procedure is now more protected because of advancements in antibiotics, anesthesia technology and blood transfusion facilities but as compared to normal vaginal

[1]*Department of Gynecology*
District Head Quarter Hospital, Vehari
[2]*Department of Gynecology*
Nishtar Hospital, Multan
[3]*Department of Medicine*
Basic Health Unit 55GB, Jaranwala
[4]*Department of Pathology*
HITEC-IMS Dental College, Taxila
[5]*Department of Pathology*
Fazaia Medical College, Islamabad
[6]*Department of Medicine*
District Head Quarter Hospital, Sargodha

Correspondence:
Dr. Sunia Ghaffar
Assistant Professor Pathology
Department of Pathology
HITEC-IMS Dental College, Taxila
E-mail: sghaffar25@gmail.com

Funding Source: NIL; Conflict of Interest: NIL
Received: March 03, 2020; Revised: November 04, 2020
Accepted: November 19, 2020

deliveries, cesarean section still have substantial risks to the women.[5] As compared to vaginal deliveries, a mother delivered by caesarean is at greater risk of injury and that risk rises with increased rate of surgical deliveries. Though, several problems are linked to emergency abdominal deliveries.[6]

There are numerous maternal health issues occurring due to repeated cesarean sections such as thinned out lower uterine segment , dense intraoperative adhesions, injury to neighboring structures, scar dehiscence, hemorrhage and infections etc.[7,8] To control life threatening hemorrhages, Obstetrical hysterectomy has to be done as a last option which is usually caused by morbid adherence of placenta, placenta previa, , uterine atony or rupture of uterus.[9,10]

The objective of this study was to determine the frequency of different operative morbidities among patients with previous one and previous two cesarean sections.

Materials and Methods

It was cross sectional study, carried out in the department of Obstetrics and Gynecology of Nishtar hospital, Multan conducted from 13th January 2016 to 12th June 2016. Permission from Ethical review board of CPSP was taken for the study. Sample size n=336 calculated by WHO calculator. Sample collection was done by non-probability consecutive sampling technique keeping 95% Confidence level. All women of reproductive age group (18-45yrs) having previous one or two cesarean sections, women undergoing emergency or elective cesarean section and Women with gestational amenorrhea of >30 weeks were included in the study. While women with medical illness e.g., Cardiac, HTN, Renal, Diabetes, Women having uterine anomalies e.g., sub septate or bicornuate uterus, women having uterine scar other than cesarean section e.g., myomectomy and women having previous classical cesarean sections were not included in the study.

History was taken from women involved in study using to structured questionnaire. Conversant permission was taken from all the women. Confidentiality of data maintained and was strictly used for research purpose. In all these women, types of maternal morbidities were noted in term of presence or absence of thick intraoperative adhesions, extremely thinned out lower uterine part, injury to neighboring structures, excessive hemorrhage, scar dehiscence or rupture and obstetrical hysterectomy and were noted in the Performa.

Statistics analysis done by SPSS software version 20. Frequencies and percentages were commuted for categorical statistics such as age groups, parity, dense intraoperative adhesions, enormously thinned out lower uterine segment, scar dehiscence. Mean ±Standard deviation dispensed for quantitative variables like Age, gestational age, and no. of previous cesarean sections. Effect modifiers like Age, no of previous cesareans and parity were controlled by stratification and effects of these were seen on outcome through Chi-Square test. *P* value ≤0.05 was deliberated significant.

Results

The participant's age of the study ranged from 18 to 45 years with mean age 33.279± 5.33 years. Majority of the women were in the age group of 26 to 35 years. While parity ranged from 1-4. Mean gestational age was 37.122 ±1.48 weeks, while mean Number of previous C section was 1.610±0.48. Dense intraoperative adhesions were found in 56.5% of the patients. Extremely thinned out lower uterine segment seen in 23.5% of the patients. Scar Dehiscence was found in 13.7% of the patients. Association of Dense intraoperative adhesions, lower uterine segments and scar dehiscence with age, parity and number of previous c/sections is shown in Table I, II and III, respectively.

Table I: Association of Dense Intraoperative Adhesions with age, Parity and Previous Sections

Dense Intraoperative Adhesions		N (%)	p-value
Age groups	18-25	12(29.3%)	<0.001
	26-35	106(57.3%)	
	36-45	72(65.5%)	
Parity	1-2	57(44.5%)	<0.001
	3-4	133(63.9%)	
Previous C sections	1	31(23.7%)	<0.001
	2	159(77.6%)	

Table II: Association of Scar Dehiscence with Age, Parity and Previous Sections

Scar Dehiscence			p-value
Age groups	18-25	12(29.3%)	0.007
	26-35	23(12.4%)	
	36-45	11(10%)	
Parity	1-2	27(21.1%)	0.002
	3-4	19(9.1%)	
Number of previous C sections	1	38(29%)	<0.001
	2	8(3.9%)	

Table III: Association of Extremely Thinned Out Lower Uterine Segment with Age, Parity and Previous Sections.

Extremely Thinned out Lower Uterine Segment			p-value
Age groups	18-25	11(26.8%)	0.805
	26-35	44(23.8%)	
	36-45	24(21.8%)	
Parity	1-2	33(25.8%)	0.442
	3-4	46(22.1%)	
Number of previous C sections	1	41(31.3%)	0.007
	2	38(18.5%)	

Discussion

Our study shows that dense intraoperative adhesions and scar dehiscence is highly associated with age, parity, and previous c-sections. While the extremely thinned out lower uterine segment was found to be non- significant with age and parity but highly significant with multiple c sections. Literature also shows strong association of the operative morbidities with age parity and increased number of caesarian sections.

Maternal morbidity escalates with increased number of abdominal deliveries. Spontaneous vaginal deliveries have progressively decreased due to increased rate of cesarean deliveries especially in industrial countries throughout the world.[6]

There are many maternal morbidities of repeat caesarean sections such as dense intraoperative adhesions, weakened out lower uterine segment, scar dehiscence and injury to neighboring structures.[7, 8] Obstetrical hysterectomy is done as a last option to control critical hemorrhages that is generally caused by Placenta previa, morbidly adherent placenta, uterine atony or uterine rupture.[9,10] However some studies found no significant variance in the risk of uterine rupture or dehiscence between those with more than one caesarean and the other group of previous one caesarean.[11,12]

In our study dense intraoperative adhesions were seen in 56.5%, extremely thinned out lower uterine segment was found in 23.5% and scar dehiscence was found in 13.7% of the patients. Frequency of dense adhesions were 23.7% in women with previous one cesarean while thinned out lower uterine segment were 15.6% in women with previous two cesarean. Results of our study are also well-matched with a study conducted at Liaqat University of Medical & Health Sciences, Sindh which showed 22.8% frequency of dense adhesions with previous one caesarean sections versus 35.5% in females with previous two caesareans, whereas frequency of thinned out lower uterus was 8.7% among women with previous one caesarean versus 15.6% women with previous two caesareans.[7,13]

In our study we observed increased frequency of scar dehiscence in cases having previous 2 cesarean sections while in other studies, frequency of scar dehiscence and rupture of previous uterine scar increased with the increased no. of caesarean sections.[14,15] Our study showed more dense adhesions in women with previous two cesareans in contrast to previous one caesarean. That was because record of prior surgeries was not available in majority of cases which also has a link with formation of adhesions.

Our study showed increase in risk of dense adhesion with subsequent cesarean sections. Considerably more adhesions were observed in ladies having two surgical deliveries as compared to patients with one surgical delivery. Various studies show different tolls of adhesions and their consequences. They are reported to be 12%[14], 48%[16] and 73%.[17].

As compared to primary cesarean section, second cesarean takes more time duration and urinary bladder damages are considerably common in the existence of adhesions and at repeated cesareans.[6,18,19] Mothers with several abdominal deliveries are significantly liable to to have ruptured uterus, scar dehiscence, placental adherence and Placenta previa.[6,20]

It is also found compatible with studies which suggested that a single c/section is sufficient in restricting the physiological stretching of lower uterus in succeeding gestations, so averting movement of placenta away to the upper uterine segment with consequences of enlarged numbers of

placenta previa with uterus having scars.[21,22]

It was a single centered study with small sample size within a limited time frame. So, it may not be applied on whole population. Also record of previous surgeries related or unrelated to Gynae/Obs was not available in majority of cases which also has a link with formation of adhesions. This study shows increased frequency of operative morbidities with increasing caesarean sections in our regions, so it is necessary to keep our number of cesarean sections to a reasonable limit and vaginal birth should be preferred approach of delivery. However, a study with large sample size involving different ethnic backgrounds should be done.

Conclusion

Concluded that women with successive caesareans, age advancement and increasing parity are at danger of having numerous intraoperative morbidities. There are increased chances of development of abdominal adhesions, scar dehiscence and uterine rupture which may enhance the rate of maternal indisposition and death.

REFERENCES

1. Ali Y, Khan MW, Mumtaz U, Salman A, Muhammad N, Sabir M. Identification of factors influencing the rise of cesarean sections rates in Pakistan, using MCDM. Int J Health Care Qual Assur. 2018;31(8):1058-69.
2. Okabayashi K, Ashrafian H, Zacharakis E, Hasegawa H, Kitagawa Y, Athanasiou T, et al. Adhesions after abdominal surgery: a systematic review of the incidence, distribution and severity. Surg Today. 2014;44(3):405-20.
3. Ye J, Betrán AP, Guerrero Vela M, Souza JP, Zhang J. Searching for the optimal rate of medically necessary cesarean delivery. Birth. 2014;41(3):237-44.
4. Molina G, Weiser TG, Lipsitz SR, Esquivel MM, Uribe-Leitz T, Azad T, et al. Relationship between cesarean delivery rate and maternal and neonatal mortality. JAMA. 2015;314(21):2263-70.
5. Jolly J, Walker J, Bhabra K. Subsequent obstetric performance related to primary mode of delivery. BJOG. 1999;106(3):227-32.
6. Zia S, Rafique M. Intra-operative complications increase with successive number of cesarean sections: Myth or fact? Obstetrics & gynecology science. 2014;57(3):187-92.
7. Khursheed F, Sirichand P, Jatoi N. Intraoperative complications encountered in patients with repeat cesarean section. JLUMHS. 2009;8(01):76.
8. Somani SS, Sudhir S, Somani SG. A study of intra-operative maternal morbidity after repeating caesarean section. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2017;7(1):291-6.
9. Shellhaas CS, Gilbert S, Landon MB, Varner MW, Leveno KJ, Hauth JC, et al. The frequency and complication rates of hysterectomy accompanying cesarean delivery. Obstet Gynecol. 2009;114(2 Pt 1):224.
10. Creanga AA, Bateman BT, Butwick AJ, Raleigh L, Maeda A, Kuklina E, et al. Morbidity associated with cesarean delivery in the United States: is placenta accreta an increasingly important contributor? Am J Obstet Gynecol. 2015;213(3):384. e1-. e11.
11. Asakura H, Myers SA. More than one previous cesarean delivery: a 5-year experience with 435 patients. Obstet Gynecol. 1995;85(6):924-9.
12. Reif P, Brezinka C, Fischer T, Husslein P, Lang U, Ramoni A, et al. Labour and childbirth after previous caesarean section: Recommendations of the Austrian Society of Obstetrics and Gynaecology (OEGGG). Geburtshilfe Frauenheilkd. 2016;76(12):1279.
13. Zafar B, Shehzad F, Naseem A, Safdar CA. Exteriorization or in-situ repair, comparison of options for uterine repair at cesarean delivery. Pakistan Armed Forces Medical Journal. 2016(4):570.
14. Weerawetwat W, Buranawanich S, Kanawong M. Closure vs non-closure of the visceral and parietal peritoneum at cesarean delivery: 16 years study. JOURNAL-MEDICAL ASSOCIATION OF THAILAND. 2004;87(9):1007-11.
15. Bamigboye AA, Hofmeyr GJ. Closure versus non-closure of the peritoneum at caesarean section: short-and long-term outcomes. The Cochrane database of systematic reviews. 2014(8):1.
16. Bahmanyar ER, Boulvain M, Irion O. 161 Non-closure of the peritoneum during cesarean section: Long-term follow-up of a randomized controlled trial. Am J Obstet Gynecol. 2001;185(6):S125.
17. Lyell DJ, Caughey AB, Hu E, Daniels K. Peritoneal closure at primary cesarean delivery and adhesions. Obstet Gynecol. 2005;106(2):275-80.
18. Ray NF, Larsen JJ, Stillman RJ, Jacobs RJ. Economic impact of hospitalizations for lower abdominal adhesiolysis in the United States in 1988. Surg Gynecol Obstet. 1993;176(3):271-6.
19. Cim N, Elçi E, Elçi GG, Almalı N, Yıldızhan R. Are the skin scar characteristics and closure of the parietal peritoneum associated with pelvic adhesions? Turkish journal of obstetrics and gynecology. 2018;15(1):28.
20. Qublan HS, Tahat Y. Multiple cesarean section. The impact on maternal and fetal outcome. Saudi Med J. 2006;27(2):210-4.
21. Hendricks MS, Chow Y, Bhagavath B, Singh K. Previous cesarean section and abortion as risk factors for developing placenta previa. J Obstet Gynaecol Res. 1999;25(2):137-42.
22. Mohamed I, Ali QM, Kamaleldin B. Association of placenta previa with repeat cesarean section in Sudan and Saudi Arabia2014-2015. Journal of Medical and Dental Science Research. 2016;3(2):07-11.