

MATERNAL MORBIDITY ASSOCIATED WITH REPEATED CESAREAN SECTIONS

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ABSTRACT

Introduction: Caesarean section is an essential widely practiced procedure. The rate of Caesarean section averages more than 20% in developed world and make up a similar percentage of hospital deliveries in developing countries. This rate has been increasing and likely to increase in future. Morbidity associated with this operative procedure is therefore of increasing concern. Caesarean morbidity includes antenatal risk of spontaneous abortion, ectopic pregnancy, intra operative adhesions, scar dehiscence, injury to surrounding organs, placenta previa and accrete, caesarean hysterectomy and post operative complications of blood transfusions, infections, pneumonia and DVT. In – spite of good pre and post operative care and relative safety of caesarean section in modern obstetrics maternal morbidity progressively increases with increased number of Caesarean sections. The objective of this study was to determine the maternal morbidity in women undergoing repeated caesarean sections. It is a cross sectional study. This study was conducted for a period of 12 months at the department of Obstetrics and Gynaecology, Fatima Memorial Hospital, Lahore.

Results: Majority of patients i.e. 64.67% (n = 97) were recorded between age group of 26 – 30 years while 28% (n = 42) were found between age 31 – 35 years and 7.33% (n = 11) were found between age 21 – 25 years. Mean and Standard Deviation were 29.03 ± 7.96 . 13.67% (n = 46) were recorded with previous 3 caesarean section. Among them 28.67% (n = 43) were with previous one caesarean section, 27.33% (n = 41) were recorded with previous 2 caesarean sections and 13.33% (n = 20) were recorded with previous 4 caesarean sections. Dense adhesions were found in 65% (n = 13), 60.39% (n = 28), 27.91% (n = 12) and 26.83% (n = 11) in the previous IV, III, I and II respectively. Scar Dehiscence 19.51% (n = 8), 15% (n = 3), 13.95% (n = 6) and 8.69% (n = 4) were found in the previous II, IV, I and III respectively.

Conclusion: Maternal morbidity increases with increased in the number of caesarean sections.

Keywords: Cesarean Section, Repeat Cesarean section, Maternal morbidity, Dense adhesions, Scar dehiscence.

INTRODUCTION

Rate of caesarean sections has been increasing over a period of time both in developed and developing countries. In USA rate of abdominal delivery is 29.1%, in England 21.5% and in Latin American states it is 40%.¹ This rate has been increasing and likely to continue in future.

There are various factors contributing to this increased in the number of caesarean sections including relative safety in caesarean delivery in modern obstetrics due to good pre, post operative care and prophylactic antibiotics.

Advance maternal age, increasing rate of labour induction and decrease use of operative vaginal birth is also thought to be the cause of increased repeated caesarean sections. Primary elective abdominal deliveries either by wish or considering precious for some reasons are also a contributing factor. Increased rate of uterine rupture and awareness of risk of

trial of labour in a previous scar attracts women toward elective repeat caesarean sections. Maternal morbidity progressively increases with increased in the number of caesarean sections in terms of dense adhesions, scar dehiscence and adherent placenta. A national study describes overall complication rate of 52.23% with dense adhesions 27%, scar dehiscence 6.25%, placenta previa 2.5% and placenta accrete 0.8%.² Frequency of these complications with dense adhesions were found 22.8%, 35.5%, 19.4%, scar dehiscence observed in 7.8%, 4.4%, 5.5% incidence of placenta previa 2.6%, 2.2%, 2.7% caesarean hysterectomies performed in 0.8%, 2.7% in previous one, two and three caesarean sections respectively.³ The purpose of my study is to determine frequency of these complications in our set-up occurring in relation to increase the number of caesarean sections so that number of intended pregnancies should be considered during counselling regarding elective repeat

caesarean section versus trial of labour and good trial of labour with previous scar should be considered with close fetomaternal monitoring. As a national study describes 86% patients with previous scar can have subsequent vaginal deliveries.⁴ Secondly primary elective caesarean section should be discouraged and should only be for strong indications. An international study described that a caesarean rate in Sudan could be reduced from 9% to 1% by doing intervention in primigravida.⁵

Objective of the Study

The objective of the study was to determine the maternal morbidity in terms of intra operative dense adhesions and scar dehiscence in women having undergone repeat caesarean sections.

Operational Definition

Maternal morbidity will be determined in terms of:

1. *Dense Adhesions:* Adhesion between anterior abdominal wall and uterus and bladder with lower uterine segment poses difficulty in approaching lower uterine segment and will be observed per operatively.
2. *Scar Dehiscence:* Presence of window in part of uterine scar with intact membranes during caesarean sections.

MATERIAL AND METHODS

Settings

Obstetrics and Gynaecology Department, Unit – III, Fatima Memorial Hospital, Lahore.

Duration of Study was 1 year (Jan 2011 – Dec 2011).

Sample Size

Sample size of 150 cases is calculated with 95% confidence level, 3.5% margin of error and taking expected percentage of scar dehiscence i.e. 6.25% in patients underwent repeated caesarean section.

Sample Techniques

Non probability purposive sampling.

Sample selection

Inclusion Criteria

- Age between 20 – 40 years.
- Parity up to 5.
- Patients with history of one or more previous caesarean sections.

Exclusion Criteria

- Primigravida.
- Patients with history of previous gynecological surgeries other than caesarean sections.

Study Design: Descriptive study.

Data Collection

A total of 200 women with the history of previous one or more caesarean sections admitted via OPD and emergency has included in this study. An informed consent for using their data in research will be obtained, detailed history regarding age, parity, duration of gestation, mode of previous caesarean section whether emergency or elective will be obtained. Examination and investigations will be performed. During the course of caesarean section record of intra-operative complications will be maintained including dense adhesions, scar dehiscence, placenta previa, and placenta accrete leading to caesarean hysterectomy. All this information will be recorded on pre-designed proforma. This data then will be analysed to determine maternal morbidity associated with repeated caesarean sections.

RESULTS

In this study a total of 150 patients were recruited after fulfilling the inclusion / exclusion criteria to determine the maternal morbidity in terms of dense adhesion, scar dehiscence and adherent placenta in repeated caesarean sections.

Table 1 shows the age distribution of the subject of the study which seen in majority of patients i.e. 64.67% (n = 97) were recorded between age group of 26 – 30 years while 28% (n = 42) were found between age 31 – 35 years and 7.33% (n = 11) were found between age 21 – 25 years. Mean and Standard Deviation were 29.03 ± 7.96.

Table 1: The number of women with the age ranges.

Age in Years	No. of Patients (n)	%
21 – 25	11	7.33
26 – 30	97	64.67
31 – 35	42	28
Total	150	100
Mean and S.D	29.03 ± 7.96	

Table 2: Shows number of caesarean sections.

No. of Caesarean Section	No. of Patients (n)	%
Previous 1 C/S	43	28.67
Previous 2 C/S	41	27.33
Previous 3 C/S	46	30.67
Previous 4 C/S	20	13.37
Total	150	100

Table 2 shows the number of caesarean sections in which 30.67% (n = 46) were previous III caesarean section, 28.67% (n = 43) were previous I, 27.33% (n = 41) previous II and 13.33% (n = 20) were previous IV.

Table 3 shows the dense adhesions in which maximum were found 65% (n = 13) in the previous IV, 60.39% (n = 28) in the previous III, 27.91% (n = 12) in the previous I and 26.83% (n = 11) were found in previous II.

Table 3: Shows number of dense adhesions.

No. of Caesarean Section	Dense Adhesions	%
Previous 1 C/S	12	27.91
Previous 2 C/S	11	26.83
Previous 3 C/S	28	60.39
Previous 4 C/S	13	65
Total	64	180.13

Table 4 shows the scar dehiscence in which maximum scar dehiscence were 19.51% (n = 8) in previous II, 15% (n = 3) in previous IV, 13.95% (n = 6) in previous I and 8.69% (n = 4) were found in previous III.

Table 4: Shows scars dehiscence in different number of C/S.

No. of Caesarean Section	Scar Dehiscence	%
Previous 1 C/S	6	13.95
Previous 2 C/S	8	19.51
Previous 3 C/S	4	8.69
Previous 4 C/S	3	15
Total	21	57.15

In this study maternal morbidity increases with repeated caesarean sections.

DISCUSSION

Over the past decade, caesarean rates increased sharply in women of all ages, all race / ethnic groups, all periods of gestation. Caesarean rates are highest for women ages 35 and over. Repeat caesarean deliveries are associated with significantly higher maternal and neonatal morbidity and mortality compared with caesarean or vaginal deliveries for women who do not have a prior caesarean.⁶ The steadily increasing global rate of caesarean section have be-

come one of the most debated topics in maternity care as its prevalence has increased alarmingly in the last few years.^{6,7} Paradoxically, this increase has resulted in an increase in maternal and perinatal mortality and morbidity. A low threshold to perform c-section is commonly related to the type of maternity setup (public or private), fear of litigation, physician’s convenience and difference in clinical practices. Introduction of electronic fetal monitoring with a high false positive rate for the detection of fetal hypoxia has also contributed to this rate.^{8,9} Caesarean section has become safer over the years, but it cannot replace vaginal delivery in terms of low maternal and neonatal morbidity and less cost.¹⁰ This statement holds true especially for the developing countries where maternal and perinatal mortality rates are unacceptably high. Current study was designed to determine the maternal morbidity with repeated caesarean sections so that elective repeat caesarean section should be discouraged and indication for performing primary caesarean section should be considered carefully. In different studies the incidence of scar dehiscence and rupture of previous uterine scar was increased with the increased number of caesarean section.¹¹ Dense adhesions were observed more in patients with the previous two caesarean sections in comparison with previous three caesarean sections in this study. Subsequently caesarean section increases the risk of dense adhesion with significantly more adhesions found in patients having two caesarean sections compared to patients having one caesarean section as observed in this study. Different studies show different rates of adhesion formation and its consequences. It is reported 12%,¹² 48%¹³ and 73%.¹⁴ The overall rate of 43% was also found in this study. Dense adhesion was noticed 65%, 60.39%, 27.9% and 26.83% in previous IV, previous III, previous I and previous II respectively. There was no difference between previous I and previous II but marked increase in dense adhesion in previous III and previous IV.

In our study scar dehiscence was noticed 19.51%, 15%, 13.95%, and 8.69% in previous II, previous IV, previous I and previous III respectively. Less scar dehiscence was observed in previous III caesarean sections because of early intervention and elective surgery before or at 38 weeks. While previous I and previous II caesarean sections to be done at 39 to 40 weeks that lead to thinning of scar and repeated surgery previous IV at 37 to 38 weeks lead to thinning of scar.

Women with multiple caesarean sections are significantly prone to have uterine scar dehiscence, uterine rupture, placenta praevia and placental adherence.¹⁵ Many studies have highlighted the previous caesarean section as an important risk factor for placenta praevia. The risk increased from 0.26%

with an un scarred uterus to 10% for women with four or more previous caesarean section.¹⁶ This was also found in the study of hershkowitz et al.¹⁷ They had suggested that a single caesarean section is enough to interfere with the normal physiological stretching of lower uterine segment in subsequent pregnancies, thus preventing normal migration of placenta away to the upper uterine segment with results in increased incidence of placenta praevia with scarred uterus.

Problems associated with repeat caesarean sections may prove detrimental in developing countries because of lack of availability of obstetrics facilities and less favourable circumstances for the management of these patients. Therefore, it is very essential to keep our caesarean section rate to a reasonable limit.

It is **concluded** that intra operative morbidity of dense adhesion and scar dehiscence increases with increase in the number of repeat caesarean section.

REFERENCES

1. Shamshad. Features leading to increase caesarean section rate. *Gomal J Med Sci* 2008; 6 (1): 1-5.
2. Wottikonsammakit P, Sukcharoen N. Pregnancy outcome of a multiple repeat caesarean section. *J Med Assoc Thai* 2006; 89 (4): 581-6.
3. Khursheed F, Srichand P, Jatoi N. Intra-operative Complications encountered in patients with repeat caesarean section. *J Liaqat Uni Med Health Sci* 2009; 8 (1): 76-79.
4. Anwar S, Quddusi H. A trail of labour after caesarean delivery. *J Med Res* 2005; 44 (1): Pakistan.
5. Baldo M.H. Caesarean section in countries of Eastern Mediterranean Region. *Health Journal* 2008; 14 (2).
6. Tampakoudis P. Caesarean section rates and indications in Greece: data from a 24 year period in a teaching hospital. *Clin Exp Obstet Gynecol* 2004; 31: 289-92.
7. Lee SI. A society with high Caesarean section rates. *Birth* 2004; 31: 108-16.
8. Frigoletto FD Jr. A clinical trial of active management for labour. *N Engl J Med* 1995; 87: 664-7.
9. Bickell NA. Effect of external peer review on caesarean delivery rates: a statewide program. *Obstet Gynecol* 1996; 87: 664-7.
10. Sachs BP. The risks of lowering the Caesarean delivery rate. *N Eng J Med* 199; 340: 54-7.
11. Mishra. Delivery related complications and determinants of caesarean section rates in Health policy plain 2002; 17: 90-8.
12. Weerawetwat W. Closure vs non-closure of the visceral and parietal peritoneum at caesarean delivery; 16 years study. *J Med Assoc Thai* 2004; 87 (12): 1007-11.
13. Roset E. Non closure of the peritoneum during caesarean section: long – term follow-up of a randomized controlled trail. *Eur J Obstet Gynecol Reprod Biol* 2003; 108 (1): 40-4.
14. Lyell DJ. Peritoneal closure at primary caesarean delivery and adhesions. *Obstet Gynecol* 2005; 106 (6): 275-80.
15. Qublan HS. Multiple caesarean section: the impact on maternal and fetal out come. *Saudi Med* 2006; 27 (2): 210.4.
16. Upadhyay N. Caesarean section: an evolving procedure. *Br J Obstet Gynecol* 1999; 106 (3): 286-92.
17. Marianne S. Previous caesarean section and abortion as risk factors for developing placenta previa. *J Obstet Gynaecol Res* 1999; 25 (2): 137-42.