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TO DETERMINE FETOMATERNAL MORBIDITY ASSOCIATED WITH MULTIPLE CAESAREAN DELIVERIES IN TERTIARY CARE HOSPITAL

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Abstract:

Aim: *The aim of this study is to determine the morbidity of fetuses and mothers associated with multiple cesarean deliveries.*

Study design: *An Observational study*

Place and duration of studies: *Conducted in the Gynecology and Obstetrics, Bahawal Victoria Hospital, Bahawalpur. The study period extended from April 2019 to March 2020.*

Methodology: *This study included patients who had a repeat cesarean section were selected. They were divided into three groups. Group I n = 292, (GI) included women who had two cesarean deliveries, Group II n = 175, (G II) included women who had three cesarean deliveries, and group III n = 38, (G III) women who has had four or more deliveries by caesarean section. Intraoperative complications were observed in the form of dense adhesions, dehiscence of scars, anterior placenta, morbidly adherent placenta, damage to the surrounding internal organs, complications of anesthesia, blood transfusion and fetal outcome. Women with only one birth were excluded.*

Results: *Compared with women after two cesarean sections, women who had more than two cesarean sections show a significant increase in adhesions, anterior placenta, placental union, and the need for obstetric hysterectomy. There was also a significant difference in the mean gestational age in the three groups. We found no significant increase between the 3 groups in terms of operative time, damage to surrounding structures, need for blood transfusions, and anesthetic complications.*

Conclusions: *Women after re-cesarean section are at risk of many intraoperative complications, which may increase the risk of fetal and maternal morbidity, but their increasing number does not carry any additional risk.*

Key words: *cesarean section / delivery, multiple repetitive cesarean section / delivery*

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INTRODUCTION:

A cesarean section is defined as having a fetus delivered through a surgical incision made through the abdominal wall (laparotomy) and the wall of the uterus (hysterotomy). Since both the words "cesarean section" and "section" come from verbs that mean section, the phrase "cesarean section" is a tautology. Accordingly, the terms "caesarean section" and "caesarean section" are preferred. Initially, a cesarean section was intended to separate the mother and fetus in an attempt to save the fetus of a dying patient. Cesarean section has evolved from a futile attempt to save a fetus to one in which both the doctor and the patient are involved in the decision-making process. The frequency of caesarean sections is increasing worldwide as maternal morbidity and mortality increases. The gradual increase in the Type C birth rate over the past few decades and the recent trend towards Type C rebirth mean that more women have multiple Type C births. This pattern of growth is evident in both developed and developing countries. Following the universal trend, the C delivery rate is also increasing. The steady increase in C birth rates has resulted in an increase in the number of patients with uterine scars. C-delivery is the most common indication. In the local study, a 35% C-delivery rate and 31% secondary cesarean delivery were observed. Although maternal deaths following caesarean section are less frequent, reports of the short- and long-term consequences of the rising C delivery rate for the childbearing population are conflicting. The most unacceptable complications with re-cesarean section are the risk of scar rupture during pregnancy and the increased incidence of abnormal placenta, unplanned perinatal hysterectomy is usually performed as a last resort to manage life-threatening hemorrhage, which is often caused by the anterior placenta, adjacent placenta, uterus. atony and rupture of the uterus. Some authors found no increase in maternal morbidity in women after multiple C-type births, and therefore encourage them to continue their pregnancy. Due to the increased safety of anesthesia, the availability of safe antibiotics and blood transfusions, many C births are uneventful.

PATIENTS AND METHODS:

This cross-sectional observational study was conducted at the Gynecology and Obstetrics, Bahawal Victoria Hospital (BVH), Bahawalpur. The study period extended from April 2019 to March 2020. They were divided into three groups, G I included women who had previous 2 C-births. G II included women who had 3 C-births and G III included women who had four or more C-births, G I had 292 patients, G II had 175 patients, G III had 38 patients. The case records were analyzed for the following parameters.

- Demographic and clinical characteristics, including age, number of deliveries, duration of surgery, complications of delivery, hospital stay, and EBL during surgery.
- Perinatal features including birth weight, Apgar score at 5 min, preterm labor less than 36 weeks gestation, stillbirth and number of ICU admissions for newborns.
- Surgical and post-operative course, including severity of adhesions, placental abnormality, scar rupture, presence of c-hysterectomy, bladder, intestinal trauma, blood transfusion, anesthetic complications, occurrence of wounds, UTIs, genital tract infection, and maternal death.

The severity of pelvic adhesions was subjectively classified by the operating surgeon according to the American Fertility Society's classification of adnexal adhesions. It is the ward policy that patients who have had two or more cesarean sections between 37 and 38 weeks of gestation undergo elective cesarean section, unless there are other indications for early delivery. The operation is performed by a well-trained physician assistant. Generally, a Pfannensteil incision is used to open the abdominal cavity and a transverse incision is made in the lower uterus. In our department, the visceral and parietal peritoneum is not closed after caesarean section in order to reduce infection after surgery. Augmentin as a single dose of a prophylactic antibiotic is administered after the umbilical cord is tightened after delivery. The Fisher exact test was used for the analysis of discrete variables and the Kruskal Wallis test for the analysis of continuous variables. A P value of <0.05 was considered significant.

RESULTS:

Table 1 presents the demographic and operational data of the three study groups. Women who had had four or more previous sections were significantly older and had higher labor compared to those who had had two or three cesarean sections.

Table 1: Demographic and operative data of the study groups

Demographic	**G I (n=292)**	**G II (n=175)**	**G III (n=38)**	***P*-Value**
Maternal Age (years)	29.3 ± 4.12	31.13 ± 4.00	31.97±2.86	0.0001*
Parity	3.07 ± 0.51	3.97 ± 0.31	4.95 ± 0.61	0.0001*
Per Operative Blood loss (cc)	482.61 ± 269.66	479.5 ± 244.47	540.54 ± 388.34	0.1955
Operative time (min)	44 ± 11.15	44.28 ± 15.16	48.83 ± 26.97	0.6128
Antenatal Complications				
Bleeding	8 (2.74)	7 (4)	2 (5.26)	0.456
Leaking	27 (9.25)	10 (5.71)	1 (2.63)	0.232
Associated Medical Disorder				
GDM	3 (1.03)	4 (2.29)	0 (0)	0.566
PIH	14 (4.79)	9 (5.14)	3 (7.89)	0.625
Diabetes Mellitus	1 (0.34)	1 (0.57)	0 (0)	1
Anemia	18 (6.16)	10 (5.71)	1 (2.63)	0.868
Anti HCV positive	10 (3.42)	6 (3.43)	1 (2.63)	1
Hep B positive	8 (2.74)	7 (4)	2 (5.26)	0.456
Per Operative Blood loss (cc)	482.61 ± 269.66	479.5 ± 244.47	540.54 ± 388.34	0.1955
Operative time (min)	44 ± 11.15	44.28 ± 15.16	48.83 ± 26.97	0.6128
Hospital stay (days)	3.77 ± 1.51	3.71 ± 1.11	3.85 ± 1.00	0.3154

But when it comes to maternal complications, they were the same in the three groups. Moreover, no significant differences were found in the duration of surgery, postoperative hospital stay, and EBL during surgery. It can be seen in Table 2 that the women in the third group had a significant increase in uterine scar dehiscence, placental adhesions and adhesions formation compared to the other two groups.

Table 2: Maternal morbidity and mortality in study groups

Complications	**G I (n=292)**	**G II (n=175)**	**G 3 (n=38)**	***P*-Value**
Preoperative complications				
Scar Dehiscence	89 (30.48)	50 (28.57)	11 (28.95)	0.907
Placenta Previa	23(7.88)	18(10.28)	7(18.4)	0.015*
Placental Adherence	0	2(1.14)	2(5.26)	0.029*
Adhesions	140 (47.95)	97 (55.43)	26 (68.42)	0.033*
Intraoperative complications				
Bladder Injury	13 (4.45)	9 (5.14)	3 (7.89)	0.58
Gut Injury	1 (0.34)	2 (1.14)	0 (0)	0.652
Need for Blood transfusion	14 (4.79)	8 (4.57)	4 (10.53)	0.283
Caesarean Hysterectomy	0 (0)	2 (1.14)	1 (2.63)	0.043*
Anesthesia Complications	0 (0)	1 (0.57)	0 (0)	0.422
Postoperative complication				
Urinary tract infections	46 (15.75)	31 (17.71)	7 (18.42)	0.787
Endometritis	18 (6.16)	10 (5.71)	2 (5.26)	1
Wound Infection	15 (5.14)	8 (4.57)	2 (5.26)	0.902
Wound Dehiscence	14 (4.79)	7 (4)	2 (5.26)	0.793
Hematoma	10 (3.42)	12 (6.86)	3 (7.89)	0.118
Maternal Death	1(0.34)	0	0	0.422

There were no significant differences between the three groups in the incidence of intraoperative and postoperative complications. In the first group, there was a single maternal death due to pulmonary embolism. Table 3 shows the characteristics of the fetus and the results of the three study groups. There were no significant differences between the three groups, except for gestational age. Birth weight, Apgar score of 1 and 5 minutes, and stay in the neonatal intensive care unit, preterm delivery and perinatal mortality showed no significant differences.

Table 3: Fetal characteristics and outcome

Fetal Characteristics	G I (n=292)	G II (n=175)	G III (n=38)	*P*-Value
Gestational Age (weeks)	37.70 ± 1.2	37.51 ± 1.04	37.51 ± 0.51	0.0021*
Birth weight (kg)	2.97 ± 0.45	2.97 ± 0.47	3.07 ± 1.11	0.3984
Apgar score				
1 min	6.59 ± 0.66	6.42 ± 0.94	6.56 ± 0.61	0.106
5 min	8.44 ± 1.10	8.32 ± 1.14	8.36 ± 1.05	0.3503
Perinatal Death %	27(9.2)	10(5.7)	1(2.63)	0.232
NICU %	11(3.77)	8(4.57)	4(10.53)	0.168
Premature Delivery %	17(5.82)	11(6.29)	2(5.26)	0.955

DISCUSSION:

C delivery is a major obstetric surgery that has been the subject of controversy and has gained popularity in recent decades as the C delivery rate has increased worldwide. This can be attributed to the increase in primary cesarean section and the decline in vaginal delivery after cesarean section. It is not unusual in Muslim countries such as Saudi Arabia and Pakistan that pregnant women have had more than three Type C births. The high prevalence of great multiplicity in a community may be related to the cultural needs of the community. Lady Aitchison Hospital is a tertiary hospital with 200 beds, providing care to the residents of downtown Lahore. The hospital performs an average of 4,500 procedures per year for all types of complicated obstetric cases. The main complications of type C repeat births are rupture of the scarring uterus, adhesion of the placenta, and inter-operative complications such as bladder or bowel damage. Unfortunately, there are no guidelines on the maximum number of Type C births a woman can have before she threatens to face serious complications. In our study, scar dehiscence (defined as the presence of a widow in the part of the uterine scar with intact uterine membranes) was not statistically different in all three groups. This is the same as in another study in which the incidence of scarring did not increase as the number of deliveries increased. In a Kirkinen review, 27 patients after three or more deliveries had uterine scar fenestration, but some studies report an incidence of 1 to 10% in women who have had more than 5 cuts. It is worth noting that our patients did not have risk factors for scar dissection, such as multiple pregnancies and polyhydramnios. In our research it has been observed that the increasing number of C deliveries leads to an increased rate of adhesion formation. These results are the same as for Morales and Tulandi T. Nisenblat et al. They showed that dense adhesions were significantly more common in women undergoing third or more births c. Different studies also show different rates of adhesion formation. It is given 12%, 48% and 73%. In our study, an overall rate of 57% was observed. Many studies have highlighted earlier births as an important risk factor for anterior placenta. This risk increases from 0.26% for an intact uterus to 10% for four or more deliveries c. The same has been proven in our study. However, another study by Khurshid et al. Showed that increasing c-births did not increase the incidence of the anterior placenta. This study also found a link between previous births and placental adhesion. Various studies have shown that placental adhesion is becoming an increasingly common complication of pregnancy, mainly due to the increasing number of deliveries over the past fifty years. This may be due to the fact that uterine scarring, which is more often caused by previous surgery, is believed to cause abnormal decidualization that predisposes the uterus to abnormal placental adhesion. This study also showed an association between early C delivery with placental adhesion and hysterectomy. Urgent hysterectomy was performed in patients with adherent placenta, anterior placenta. There was no higher morbidity in patients undergoing hysterectomy. Knight et al. And Lyell estimated the risk of a perinatal hysterectomy in several women. The study was in line with our findings. The relationship between fetal outcome and the number of previous deliveries c has previously been discussed by other researchers. In a recent study by Uygur et al. They obtained similar results. It had the same sample size as ours. Contrary to our findings, Seidman et al. Reported that the low Apgar scores were significantly associated with the number of previous c-births. This may be due to the smaller size of the patients in their study compared to ours. Our study found a significant difference in the mean gestational age at delivery. This is consistent with the research by Sobande et al.

CONCLUSION:

Women with repeated cesarean deliveries are at risk of developing many intraoperative complications that may increase the risk of fetal and maternal morbidity, but their growing number does not carry additional risk.

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