

More Than Five Caesarean-Sections: Maternal and Perinatal Outcomes and Associated Risk Factors

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ABSTRACT

Aim: To examine the maternal and neonatal outcomes in patients who received more than five cesarean sections and associated risk factors.

Study Design: Case control

Place and Duration of Study: Gynecology and Obstetrics Department, Sandeman Provincial Hospital Quetta from 1st January 2019 to 31st December 2019.

Materials and Methods: The number of patients was 100 patients with age ranging between 20-50 years and gestation age >32 weeks. Demographic details including patient's age, residence, education and socioeconomic status were recorded after written consent. The patients were divided into two groups; Group A (n=50) consisted patients who had undergone five or more C-section deliveries. Group B (n=50) consisted of patients who had less than five C-sections. Intra and post-operative complications were recorded. Neonatal outcomes such as admission to NICU, birth weight, Apgar score and mortality data were recorded and results were compared.

Results: In Group A, the incidence of extensive adhesion was high 21 (42%) patients as compared to Group B (10%). Bowel injury found in 3 (6%) patients in Group A while no patient in Group B. Placenta previa found in 6 (12%) in Group A and 1 (2%) patients in Group B. Need of blood transfusion rate was high in Group A, 24% as compared to Group B 8%. In Group A 30% neonates required NICU admission. Low birth weight was higher in Group A patients. 2% neonatal death was recorded in Group A while none in Group B.

Conclusion: Patients with five or more C-sections had higher risk of maternal and neonatal morbidity. Patients should be aware about the adverse outcomes of repeated C-section deliveries.

Keywords: C-sections, Maternal outcomes, Neonatal, Morbidity, Mortality

INTRODUCTION

High rates of caesarean section (CS) globally are becoming an issue of public health concern.¹ According to the World Health Organization (WHO) in 2015, CS rates in women who had a previous CS ranged between 78.1 and 79.4% in high-income countries, 85.2 and 87.5% in middle-income countries and 63.2 and 72.1% in low-income countries.² Previous CS is one of the main indications for repeat CS in sub-Saharan Africa.^{3,4} Even when the decision is made for a trial of labor (ToL), there are conflicting recommendations on how to manage both labor and delivery, especially regarding augmentation of labor. Doctor and patient preferences vary widely and fear of litigation is increasing, causing variations in clinical management and limiting access to trial of labour.^{5,6}

An increasing number of caesarean sections inevitably rise of multiple repeat cesarean deliveries. It is known that multiple cesarean sections are associated with short- and long-term risks for both the mother and the baby.^{7,8} There are several significant maternal complications such as visceral injury, uterine rupture, abnormal placentation, hysterectomy, bleeding and transfusions, severe adhesions, etc., most of which increase with an increasing number of repeated cesarean sections. There are also neonatal risks: babies born via multiple repeat cesarean sections are more likely to experience breathing difficulties and require admission to neonatal intensive care.^{9,10} There are few studies published in the literature regarding the associated risks with higher

number of repeated caesarean sections and patients with lower number of repeat caesarean sections. Present study was aimed at examining the maternal and neonatal outcomes in patients who were undergoing five or more C-section deliveries.

MATERIALS AND METHODS

This study was conducted at Gynaecology and Obstetrics Department, Sandeman Provincial Hospital, Quetta from 1st January 2019 to 31st December 2019. One hundred patients with ages 20 to 50 years and gestation age >32 weeks were included. Patient's demographical details including age, residence, education and socioeconomic status were recorded. Patients with normal deliveries and less than 20 years of age were excluded from the study. All the patients were divided into two groups; Group A consisted of 50 patients and had undergone five or more C-section delivery and Group B with 50 patients had received less than 5 C-section. Intra and post-operative complications were recorded. Neonatal outcomes such as admission to NICU, birth weight, Apgar score and mortality were recorded. Results were compared between two groups. All the statistical data was analyzed by computer software SPSS 21. P-value <0.05 was considered as statistically significant.

RESULTS

There were no significant difference in terms of age between Group A and B average age 37.8 years and 36.5

years respectively. Twenty eight (56%) patients in Group A and 30 (60%) patients in Group B resided in rural areas. About 55% patients were illiterate (27 in Group A and 28 in Group B), and 54% patients were literate (23 patients in Group A and 22 patients in Group B). About 27 (54%) patients in Group A and 25 (50%) patients in Group B had low socio-economic status while 23 (46%) and 25 (50%) patients in Group A and B had middle class status. Twenty one (42%) patients in Group A and 26 (52%) in Group B were primiparous while 29 (58%) in Group A and 24 (48%) in Group B were multiparous (Table 1).

In Group A the incidence of extensive adhesion was high 21 (42%) patients as compared to Group B 10%. Bowel injury found in 3 (6%) patients in Group A while no patient had it in Group B. Placenta previa found in 6 (12%) in Group A and 1 (2%) patients in Group B. Need of blood transfusion rate was high in Group A (24% vs Group B 8%). Four (8%) patients in Group A and 1 (2%) patients in Group B required Bakri Balloon placement for post-partum hemorrhage. Three (6%) patients in Group A required admission to surgical ICU while none in Group B. Post-operative outcomes such as paralytic ileus found in 3 (6%) patients in Group A and 1 (2%) in Group B. Wound infection occurred in 3 (6%) patients and none in Group B, 2 (4%) patients in Group A needed readmission. Length of hospital stay was higher in Group A patients as compared to Group B 6.1±1.4 vs 5.2±2.6 days (Table 2).

Table 1: Baseline characteristics of all the patients

Variable	Group A	Group B	P value
Age (years)	37.8	36.5	>0.05
BMI (kg/m ²)	24.58±2.65	23.98±3.05	N/S
Residence			
Rural	28 (56%)	30 (60%)	>0.05
Urban	22 (44%)	20 (40%)	
Parity			
Primiparous	21 (42%)	26 (52%)	0.042
Multiparous	29 (58%)	24 (48%)	

Table 2: Intraoperative and post-operative findings between both groups

Variable	Group A	Group B	P-value
Intra-operative			
Extensive adhesion	21 (42%)	5 (10%)	0.012
Bowel injury	3 (6%)	-	0.03
Placenta previa	6 (12%)	1 (2%)	0.02
Blood transfusion	12 (24%)	4 (8%)	0.01
Need of Bakry balloon ligation	4 (8%)	1 (2%)	0.04
Need of SICU	4 (8%)	1 (2%)	0.04
Post-operative outcomes			
Paralytic ileus	3 (6%)	1 (2%)	>0.05
Wound Infection	3 (6%)	-	0.03
Need for Readmission	2 (4%)	-	0.04
Mean Hospital Stay	6.1±1.4	5.2±2.6	0.035

Table 3: Neonatal outcomes between both groups

Outcomes	Group A	Group B	P-value
NICU admission	15 (30%)	4 (8%)	0.02
Low birth weight	13 (26%)	8 (16%)	0.04
Death	2 (4%)	1 (2%)	N/S
Apgar score at 5 min			
<7	3 (6%)	5 (10%)	N/S
>7	47 (94%)	45 (90%)	N/S

In Group A, 15 (30%) neonate required NICU admission while in Group B, 2 (4%) neonates were admitted to NICU. Low birth weight was higher in Group A, patients as compared to Group B (26% vs 16%). About 2% neonatal death was recorded in Group A while none in Group B (Table 3).

DISCUSSION

Caesarean section deliveries have a high rate of morbidity and mortality as compared to normal vaginal deliveries all over the world.¹¹ In developing countries like Pakistan, the rate of C-section has increased significantly since last three decades. The major contributing factor was lack of utilization of specialist guidance during antenatal visit and lack of health education.¹² C-section is associated with increased mortality and morbidity. Present study was conducted to examine the maternal and neonatal outcomes in patients who received five or more C-section and we compare the findings in patients who received less than 5 C-sections. In this study there were no significant difference regarding demographical details such as age, residence, socioeconomic status (p>0.05). These results were similar to many other studies.^{13,14} In our study the number of multiparous patients was higher in Group A compared to Group B.

In the present study the incidence of extensive adhesion was high 21 (42%) in Group A patients as compared to Group B 10%. Bowel injury found in 3 (6%) patients in Group A while no patient in Group B. Placenta previa found in 6 (12%) in Group A and 1 (2%) patients in Group B. A study conducted by Osman et al¹⁵ reported that patients with more than five C-section had high rate of extensive adhesion 41.25% and bowel injury was 2.5% and rate of placenta previa was 8.75%.

In this study need of blood transfusion rate was high in Group A 24% as compared to Group B 8%. Four (8%) patients in Group A and 1 (2%) patients in Group B required Bakri Balloon placement for post-partum hemorrhage. Three (6%) patients in Group A required admission to surgical ICU while none in Group B. These results were similar to some other studies in which rate of intra-operative complication were high in patients who had more C-section deliveries.^{16,17}

In present study post-operative outcomes such as paralytic ileus found in 3 (6%) patients in Group A and 1 (2%) in Group B, wound infection occurred in 3 (6%) patients and none in Group A and B, 2 (4%) patients in Group A needed readmission and length of hospital stay was higher in Group A patients as compared to Group B 6.1±1.4 vs 5.2±2.6 days. These results were comparable to some other studies.^{11,18} In our study we found that in Group A 15 (30%) neonates required NICU admission while in Group B 2 (4%) neonates were admitted to NICU. Low birth weight was higher in Group A patients as compared to Group B 26% vs 16%. About 2% neonatal death was recorded in Group A while none in Group B. These results showed similar results as in many previous studies in which patients with more C-sections had a higher rate of neonatal adverse outcomes.^{19,21}

CONCLUSION

Caesarean section deliveries are directly associated with high rate of maternal and neonatal morbidity and mortality. We concluded from this study that patients with five or more C-sections have higher risk of maternal and neonatal morbidity. Patients should be aware of the adverse outcomes of repeated C-section deliveries and that can be accomplished by health education by a specialist at antenatal visits.

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