

Frequency of Cesarean Section in Patients with Previous One Scar

ASIA ASGHAR¹, SADIA HABIB², NIMRA NAEEM³, HADIA HUSSAIN⁴, SUNDUS NAWAZ⁵, MAJIDA ZAFAR⁶

^{1,4}Postgraduate Trainees "Unit B", ²Associate Professor/Chairperson, ^{3,5}Postgraduate Trainees, Department of Obstetrics & Gynaecology "Unit C" Auyb Medical Teaching Institute (AMTI) Abbottabad

⁶Assistant Professor, Department of Obstetrics & Gynaecology, MCH Center, Pakistan Institute of Medical Sciences (PIMS), Islamabad
Correspondence to: Sadia Habib, Email: sadiazeb@yahoo.com, Cell: 0333-5033929

ABSTRACT

Objective: To determine the frequency of cesarean section in patients with previous one scar.

Study Design: Cross-sectional study.

Place and Duration of Study: Department of Obstetrics and Gynaecology, ATH, Abbottabad from 1st June 2020 to 30th November 2020.

Methodology: One hundred and thirty pregnant women with previous one scar were included in the study. All participants were managed as per department protocol and frequency of cesarean section was noted.

Results: The age range was from 18 to 35 years with mean age of 29.361±1.95 years, mean gestational age 38.592±1.26 weeks, mean parity 1.923±0.91 and mean weight was 70.776±4.20 kg. Cesarean section was seen in 25.4% patients.

Conclusion: Prior scar women are at higher risk of cesarean section unless the type of delivery method.

Keywords: Pregnancy, Previous one scar, Cesarean section

INTRODUCTION

Caesarean section is a common delivery method in pregnant females and its frequency varies from 1-52% in different regions of the world.¹ Prior C-section escalates the chances of caesarean delivery again in women however few women gave vaginal birth as well. This divergence is also varied in all over the globe accounting 9% in America and ~50 in UK.² Various social, medical and psychological factors taken into account before the consideration of delivery method. Children outcomes and consequences are also different in different modes of delivery method.

Vaginal delivery after previous C-section give rise to many problems due to uterine scar and higher chances of rupture. Offspring may have elevated risk of hypoxic brain injury which can cause cerebral palsy and even death in few cases. Cerebral palsy due to vaginal birth after C-section accounts in 2-10% of all the cases.^{3,4} Although C-section avoid such associated risk but fetus does not get benefited from maternal bowel flora exposure due to vaginal delivery. Research suggested that, exposure to maternal flora increases the defense mechanism of the newborn and the development of gut's microbiome.⁵

The reasons for the increase in CS are multifactorial, but existing literature suggests that the increase is predominantly a result of advanced maternal age, particularly in nulliparous women.⁶ In most of the industrialized world, social, educational and demographic changes have led to an increasing number of women postponing their pregnancies until late in their fertile life.⁷

In a study by Sangwan et al⁸ have showed that frequency of cesarean section was 20.9% in women with previous scar. There is paucity of data in this subject in our local population. As its discussed above that attempting VBAC after a previous cesarean section has increased risk of uterine scar rupture, therefore its necessary to get local evidence regarding frequency of cesarean section in patients with previous one scar. Moreover, in order to ensure that birth choices are informed, research is needed into long-term health outcomes in children born by CS, with particular focus on those born to women with a history of CS.

MATERIALS AND METHODS

This cross-sectional study was conducted at Department of Obstetrics and Gynaecology, ATH, Abbottabad from 1st June 2020 to 30th November 2020 and 130 women were enrolled. All women age 18-35 years, singleton pregnancy on ultrasound, gestational age 36-41 weeks on LMP, parity 1-4 and previous one scar were included. Non cephalic, placenta previa, known or suspected disproportion of maternal and/or fetal origin and history of tumor of corpus uteri were excluded. Base line demographic information of patients (age, parity, gestational age, weight by weighing machine, type of scar) was taken. Informed consent was taken, ensuring confidentiality and fact that there was no risk involved to the patient

while taking part in this study. All participants were managed as per department protocol and frequency of cesarean section was noted. The data was entered and analyzed with SPSS-22.

RESULTS

The meanswere of age 29.361±1.95 years, mean gestational age 38.592±1.26 weeks, mean parity 1.923±0.91 and mean weight was 70.776±4.20 kg (Table 1). According to type of scar, 99 (76.2% women have C-section and 31 (23.8%) women have myomectomy (Table 2). Thirty-three (25.4%) women have cesarean section and 97 (74.6%) women have no cesarean section (Table 3).

Table 1: Descriptive statistics of patients (n=130)

Variable	Mean±SD
Age (years)	29.36±1.95
Gestational age (weeks)	38.59±1.26
Parity	1.92±0.91
Weight (Kg)	70.77±4.20

Table 2: Frequency of type of scar (n=130)

Type of Scar	No.	%
C section	99	76.2
Myomectomy	31	23.8

Table 3: Frequency cesarean section (n=130)

Type of Scar	No.	%
Yes	33	25.4
No	97	54.6

DISCUSSION

American college of obstetrician and gynecology suggested the concept of cesarean section. This highlighted the importance of vaginal delivery despite of the prior C-section. According to it, women should be counselled and encouraged to give abdominal delivery as it is more beneficial for the newborn.⁹³ New research elaborated this fact that, lower segment caesarean section cannot be problematic for labor induction by oxytocin however, prostaglandin can sometime cause adverse reaction.

A prospective study was conducted by the University of South Carolina to determine the safety and success rate of vaginal delivery after C-section. Vaginal delivery was observed more frequently in spontaneous group in contrast to induced labor group. Uterine scar separation was also higher among induced group as compared to elective c-section. Results of this study showed that maternal morbidity chances were also higher in vaginal delivery group after c-section.⁹

Another study conducted by Rageth et al¹⁰ concluded that, chances of uterine rupture was very high who had prior history of caesarean section in both types of caesarean delivery (spontaneous versus elective C-section). A study conducted by

Naef et al¹¹ on 200 women who undergone vaginal delivery after 10 years of c-section. More than half of the women show successful vaginal delivery. Uterine rupture was only seen in 1.1% of the females in labor group and no rupture was noticed in elective method.

Prostaglandins and oxytocin induced labor also make difference in labour outcomes. Lydon-Rochelle et al¹² demonstrated that uterine rupture was noticed more in prostaglandin as compared to oxytocin. Norman and Ekman¹³ showed that prostaglandin is also safe to use in pregnant females and show no adverse effects in females who had prior history of C-section.

Although uterine rupture rate is slightly higher in patients who had previous history of C-section, obstetricians and gynecologists should consider vaginal delivery as a first option especially in females who had no medical complications and had long gap in their deliveries. This also show high success rate regardless of their prior cesarean section. Moreover, maternal mortality also not differ significantly in women who either underwent vaginal delivery of election C-section.¹⁴

Hibbard et al¹⁵ conducted a study to determine the associated risk, blood loss and other factors in females with failed vaginal delivery and among females with successful vaginal or elective C-section delivery. Blood loss, risk of concurrent infections and uterine disruptions was reported to be higher in failed vaginal birth patients after caesareans as compared to the patients who delivered baby successfully through vaginal path. These chances were higher among females who had excess amount of oxytocin and already had 2 or more C-section history. Therefore, vaginal birth after C-section should be encouraged among females in modern obstetrics.

CONCLUSION

Present study highlights that, females were at higher risk of repeated caesarean sections who had prior history of uterus scar. Proper counseling and closed monitoring both increase the perinatal and maternal life expectancy.

REFERENCES

1. Souza JP, Betran AP, Dumont A. A global reference for caesarean section rates (C-Model): a multicountry cross-sectional study. *BJOG* 2016; 123(3):427-36.
2. Black M, Bhattacharya S, Philip S, Norman JE, McLernon DJ. Planned repeat cesarean section at term and adverse childhood health outcomes: a record-linkage study. *PLoS Med* 2016; 13(3): e1001973.
3. Reif P, Brezinka C, Fischer T. Labour and childbirth after previous caesarean section: recommendations of the Austrian society of obstetrics and gynaecology (OEGGG). *Geburtshilfe Frauenheilkd* 2016; 76(12): 1279-86.
4. Fobelets M, Beeckman K, Faron G, Daly D, Begley C, Putman K. Vaginal birth after caesarean versus elective repeat caesarean delivery after one previous caesarean section: a cost-effectiveness analysis in four European countries. *BMC Pregnancy Childbirth* 2018; 18(1): 92.
5. Bager P, Simonsen J, Nielsen NM, Frisch M. Cesarean section and offspring's risk of inflammatory bowel disease: a national cohort study. *Inflamm Bowel Dis* 2012;18(5):857-62.
6. Kahveci B, Melekoglu R, Evruke IC, Cetin C. The effect of advanced maternal age on perinatal outcomes in nulliparous singleton pregnancies. *BMC Pregnancy Childbirth* 2018; 18(1):343.
7. Rydahl E, Declercq E, Juhl M, Maimburg RD. Cesarean section on a rise-does advanced maternal age explain the increase? a population register-based study. *PLoS One* 2019; 14(1): e0210655.
8. Sangwan V, Siwach S, Lakra P, Sangwan M, Singh S, Mahendru R. Obstetric outcome of induction of labor using prostaglandin gel in patients with previous one cesarean section. *Obstet Gynecol Sci* 2019;62(6):397-403.
9. Sims EJ, Newman RB, Hulsey TC. Vaginal birth after cesarean: to induce or not to induce. *Am J Obstet Gynecol* 2001;184:1122-1124.
10. Rageth JC, Juzi C, Grossenbacher H. Delivery after previous cesarean: a risk evaluation. *Obstet Gynecol* 1999;93:332-37.
11. Naef RW, Ray MA, Chauhan SP. Trial of labour after cesarean delivery with a lower segment vertical uterine incision - is it safe? *Am Obstet Gynecol* 1995;172:1666-74.
11. Del Valle GO, Adair CD, Sanchez-Ramos L. Cervical ripening in women with previous cesarean deliveries. *International J Gynecol Obstet*. 1994;47:17-21.
12. Lydon-Rochelle M, Holt VL, Easterling TR. Risk of uterine rupture during labor among women with a prior cesarean delivery. *N Engl J Med*. 2001;345:3-8.
13. Norman M, Ekman G. Preinductive cervical ripening with prostaglandin E2 in women with one previous cesarean section scar. *Acta Obstetrica Gynecologica Scandinavia* 1992; 71:351-355.
14. Obara H, Minakami H, Koike T, Takamizawa S, Matsubara S, Sato I. Vaginal birth after cesarean delivery. *J Obstet Gynaecol Res* 1998; 24:129-134.
15. Hibbard JU, Ismail MA, Wang Y, Te C, Karrison T, Ismail MA. Failed vaginal birth after cesarean section: how risky is it. maternal morbidity? *Am J Obstet Gynecol* 2001;184:1365-71.