

Frequency of Vaginal Delivery in Women with Previous Cesarean Section: A Single Referral Center Experience

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Abstract

Background: Birth is the delivery of a baby at the end of the gestation that can occur naturally and without the need for special technology or can be done by caesarean section.

Methods: This descriptive study conducted to evaluate 685 patients admitted to Asalian hospital in Khorramabad (West of Iran) with a history of cesarean delivery who were again pregnant.

Findings: The results showed that the highest relative frequency of vaginal delivery (38%) was in women aged 22 to 26 years, also the highest frequency of vaginal delivery (69%) was in women who had one C-section and in women who in their previous cesarean section had Kerr incision compared to women who had a cesarean section with transverse incision (74%).

Conclusion: Based on this study, the phrase “once a cesarean, always cesarean” can change to “once a cesarean, often vaginal delivery”. Studies show that vaginal delivery after one or even several C-sections normally is relatively safe except in special cases like breech birth.

Key words: Pregnancy, Vaginal Delivery, Cesarean Section

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Introduction

Birth is the delivery of baby at the end of the gestation that can occur naturally and without the need for special technology or can be done by caesarean section. Delivery time is usually associated with symptoms such as abdominal or back pain that gradually increase in pain duration and distance between each pain becomes shorter, as well as discharge or bloody discharge from the vagina (1-3). In a simple delivery, vaginal delivery can be divided into the following steps: The first phase, the onset of labor until the cervix is fully open. The second phase is from the full opening of the cervix till fetal extraction and the third phase is from fetal delivery until expulsion of the placenta (4, 5). Start of labor includes primary pains, active pain and transitional stage. =- Stage one may be 12-14 hours for people who have their first delivery and 5-6 hours for mothers who have had a previous delivery. The force of contractions of the uterus, opens the cervix and this opening is usually reported in cms that is determined by internal examination with one or two fingers. Full opening of the cervix is about 10 centimeters (6-8). Recently, according to research conducted for normal delivery, high attention has been given to those who already have a C-section (9-12). Generally, caesarean section has undesirable side effects and vaginal delivery is preferable. Caesarean section like many other surgical procedures has its own complications including need for anesthesia and problems that arise because of it, such as bleeding, and infections that can occur in the area of surgery, wound dehiscence, respiratory infections and pneumonia caused by aspiration, urinary infections, hernias and other problems that occur during surgery by cutting or by spreading it around, threatening patients' health (13-15). On the other hand, length of hospitalization for those who have vaginal delivery is less than persons who have C-section and it is beneficial to mother and also beneficial to hospitals and other patients and also has great economic advantages (16). In the past, experts believed that a person who had once had a cesarean section, in subsequent pregnancies should also have C-section in ensuing pregnancies, in other words, "once a cesarean, always cesarean". In fact, experts fear previous cesarean scars may rupture during vaginal delivery. But considering the benefits of normal delivery, experts permit natural childbirth to individuals who have a history of cesarean section and who do not have = contraindications for vaginal delivery. and study these groups (17, 18).

Despite the existence of various articles and research work in other countries, there is not enough research in Iran, and accordingly such research is necessary. The present study is conducted for profile examination of patients hospitalized in Assalian hospital in Khoramabad city (west of Iran) from 2012 to 2014.

Materials and Methods

1. Study area

Lorestan province is located in the southwest of Iran, bordering the states of Markazi, Hamedan, Kermanshah, Khuzestan, Ilam, and Isfahan. The estimated population of Lorestan is 1,754,243. The district covers an area of approximately 28,294 km². The province comprises 11 counties (Azna, Aligudarz, Borujerd, Pol-Dokhtar, Khorram-Abad, Dorud, Dure-Chegeni, Delfan (Nur-Abad), Selsele (Aleshtar), Kuhdasht, Rumeskan), 29 districts, and 85 habitations. (Source: http://amar.sci.org.ir/index_e.aspx).

2. Collection of records of patients who had previous cesarean section:

All the cases that were referred to Assalian hospital of Khorram Abad (as a referral center) with previous cesarean section between October 2012 and November 2014 were included to determine the relative frequency of vaginal delivery after previous cesarean. Women from different parts of the province are mostly referred to this hospital.

3. Statistical analysis

All statistical analyses were carried out using SPSS for windows version 11.5. $P < 0.05$ was considered significant.

4. Ethical consideration

Approval of the study protocol was obtained from the Ethical Review Board of Lorestan University of Medical Sciences. Written informed consent was obtained from all the study participants or their parents/guardians .

Results

From 685 admitted patients to Assalian hospital with previous cesarean section, 71 subjects had vaginal birth after previous caesarean section, showing that incidence of vaginal delivery in two years in this group is 10% and about 90% of these people have had repeat C-scection.

In terms of age, the highest relative frequency of vaginal delivery (38%) was in women aged 22 to 26 years and the lowest relative frequency of vaginal delivery (7%) was in women aged 37 to 41 years [Table1]. In this study, it was found that the highest frequency of vaginal delivery (69%) was in women who had one previous caesarean section [Table 2]. Also, it was found that the highest frequency of vaginal delivery (74%) was in women who had Kerr cut on the uterus in the previous cesarean section compared to women who had transverse shear in their previous cesarean section [Table 3]. Moreover, it was found that the highest frequency of vaginal delivery was in women where the cause of their previous caesarean section/s was breech position, fetal distress, and failure in progression of labour [Table 4].

Table 1: Frequency distribution of natural childbirth by age, in 71 women who had previous cesarean section

Vaginal Delivery / Age Group	Frequency	percentage
17-21	13	18.3
22-26	27	38.02
27-31	17	23.94
32-36	9	12.7
37-41	5	7.04
Total	71	100

Table 2: Distribution of relative frequency of vaginal delivery based on previous cesarean numbers in 71 women with previous cesarean section

Vaginal Delivery / Previous C/S Number	Frequency	Percentage
1	49	69.01
2	18	25.35
3	4	5.64
Total	71	100

Table 3: Frequency distribution of natural childbirth based on previous incision in 71 women with previous cesarean section

Natural Childbirth / Previous Incision	Frequency	Percentage
Kerr cut	53	74.65
Transverse shear	18	25.35
Total	71	100

Table 4: Relative frequency distribution of vaginal delivery based on previous cesarean causes in 71 women with previous cesarean section

Vaginal delivery / The Cause of Previous C/S	Frequency	Percentage
breach	19	26.77
fetal distress	16	22.53
failure in progression of labour	12	16.9
Twinning	3	4.22
Maternal hypertension	1	1.4
Placenta previa	5	7.04
Placental abruption	2	2.81
Cross state	4	5.63
unknown	9	12.7
total	71	100

Discussion and Conclusion

In this study, frequency of vaginal delivery in women who had previous cesarean was examined. The highest relative frequency of vaginal delivery (38%) was in women aged 22 to 26 years with previous cesarean, probably due to the high number of pregnancies and the desire to have children in this age range.

The relative frequency of vaginal delivery in terms of previous cesarean number in women with a history of caesarean section was seen in women (69%) who have had only one C-section and that is perhaps mostly due to elimination of the previous cesarean causes as well as the willingness of the patient and the doctor for vaginal delivery.

In a study in 2017 that was performed on the possibility of uterine rupture during labor in women with a previous cesarean section, a population-based study was done on information obtained from the "Washington State Birth Events Record Database". The database recorded almost 95 percent of deliveries in Washington. In this study, recorded data were analyzed from 1987 to 1996 and 20,095 of them were seen as suitable for the study. The results of the study showed that the rate of uterine rupture in people who had caesarean after caesarean was 1.6 per 1,000 people; the rate of uterine rupture in women who after caesarean delivery had spontaneous pain was 5.2 per thousand people, in women who had pain without mediation of prostaglandins was 7.7 per thousand people, and for those who were identified by prostaglandins were 24.5 per thousand people. In general, the results of this study stated that in the study population of this research, in women with previous cesarean section, the risk of uterine rupture among those who had induced pain was more than those who had repeat caesarean section, especially in those where pain was caused by prostaglandins. The results of this study are consistent with the results of our research and actually suggest that vaginal birth after cesarean has no prohibition and only in a few cases can be problematic (19).

In another study conducted in Pakistan, from the study of 287 women where the causes of their previous caesarean section were breech birth, 77% of them had successful vaginal delivery. The results were fully compatible with our study (20).

In a study in America in a 10-year period (1989-1998) regarding the process of caesarean section and whether it was increasing or decreasing, it was found that the overall rate of caesarean delivery had decreased from 16% to 10% and in this study it was found that the primary caesarean delivery decreased from 9% to 7% and repeated caesarean rate decreased from 7% to 3% (21), thus the results of this study were fully compliant with our results.

About 3-4 percent of births are in breech position. A very important study was conducted in 2000 in 121 centers in 26 countries. In this study 2,088 women who were in abreech

delivery were selected and were divided into two groups till a group of them had Cesarean delivery and the other group had natural delivery to finally be compared with each other. As well the situation of children 6 weeks postpartum were analyzed. The results of this study showed that mortality during birth, child mortality and significant problems after the birth of the baby in the C-section group was significantly lower than those with normal delivery. However, mortality rates and maternal complications after birth were not significantly different in the two groups. Therefore, in this study it was found that for fetuses that are in breech position, Cesarean is better than vaginal delivery (22). The results of that study did not have much conflict with our study because we did not examine breech position and this was one of the defects of our investigation. The fourth result of our study also pointed to this issue.

In another study, published in 1987, in a 2-year interval in order to evaluate vaginal birth after caesarean section in America, 32,854 patients were considered and 2,708 of them had a previous caesarean section and of these, 1,465 patients had normal delivery in a subsequent pregnancy and most of them had successful deliveries. This study noted that "once a cesarean, always acesarean" should be changed and discarded (23). The results of that study are fully consistent with our study.

Finally, according to this study and surveys of other studies, we can say that the sentence "once a cesarean, always cesarean" must change to "once a cesarean, always vaginal delivery", because the benefits and importance of natural child birth are undeniable compared to caesarean section, as well as various studies have shown that in normal situation, vaginal birth after a cesarean, or even several times is almost always safe.

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