

Study of Mode of Delivery in a Sample of Women with History of Previous One Cesarean Section

by

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Abstract :

Back ground: Vaginal birth after cesarean is still worth trying in developing countries; to expand their wish in future fertility prospect and to reduce morbidity and mortality associated with multiple caesarean sections.**Objective:** Aim of this study is to throw alight on the rate of cesarean section and the success rate of vaginal birth in a sample women with previous one cesarean section. Collection of data (200 sample) was done during the period The sample was 200 women were selected for the study randomly in a period March – July, 2023.**pateints and methods:** a cross sectional study in AL-Imamain Alkhadamian Medical City and Al-yarmuk hospital .A study carried out on all term, , with one previous cesarean section pregnant woman, admitted in out patient ; 87of them were selected for a trial of vaginal delivery and 113 decided for c\s.

Results: A total of 200 women having previous one cesarean section ; out of which 87(43,50%)attempted vaginal birth after cesarean and 113(56,50%)were delivered by c\s,The success rate in vaginal trial was 77% % ; less in women age 35 years and less in patient with chronic disease as diabetes mellitus and hypertension and the rate are 18,2%,0,0%6,5% respectively. **Conclusion:** Trial of vaginal birth after cesarean is still a challenge that reflects the clinical performance of obstetricians. The recorded success rate was 77% from the women who given a trial . And 56,50% of cases were delivered by c\s.

Keywords: Mode of Delivery ; vaginal birth ; Cesarean Section(C/S)

Introduction

Vaginal birth after previous caesarean section is a safe option for many women ⁽¹⁾. this is true in several countries, especially in middle east, where the reproductive pattern is characterized by early marriage and high fertility desire throughout the reproductive years ⁽²⁾. achieving successful vaginal birth after previous caesarean section is an important strategy in reducing the progressively rising rate of these operation and its associated morbidities ⁽³⁾

Therefore after caesarean section ,many women prefer vaginal birth in order to reduce the consequence and complication of multiple cesarean section especially for continuing fertility,However the proportion of women who choice vaginal delivery globally after a prior c\s has decreased rapidly because of concern about safety⁽³⁾.

Although attempts at a trial of labor after cesarean section(TOLAC) have become accepted practice, the rate of successful vaginal birth after c\s(VBAC) as well as the rate attempts of vaginal birth after c\s ,has decreased during

the last 10 years .whereas ,40-50% of women attempted vaginal birth after c\s in 1996 as few as 20%of patient with prior c\s attempted a trial of labor in 2002⁽⁴⁾.

This number is drifting down toward 10% mark with fewer than 10% of women achieving successful(VBAC)in 2005. never the less despite the known risk of uterine rupture(0,5-1%),(TOLAC) remain an attractive option for many patient and lead to successful outcome in high proportion of cases in comparison the alternative of elective repeated c\s is not without risk⁽⁴⁾.the aim of current study to study the mode of delivery in a sample of women with history of previous one cesarean section.

Pateints and methods :

Data was collected from 200 primigravida women with previous single c\s during March to July -2023, this study was conducted in AL-Imamain al khadimain Medical City and AL-Yarmuk Hospital .

Ethical considerations: The verbal permission to conduct the study was given by the manager of the hospital. Informed consent was obtained from all women with one previous caesarean section.

Statistical analysis : the statistical analysis of this cross sectional study performed with the statistical package of SPSS-21 ,Categorical data formulated as count and percentage .Chi-square test used to describe the association of these data.The accepted statistical significant differences is equal or less than 0.05,highly significant is equal to or less than 0.01.

Results:

Demographic characteristic

Table (1) show the distribution of women in study groups according to demographic characteristic features ; Total sample studied was 200.

The high proportion of participates aged less than 35 years (72.5%) ;parity (94%) had 1-2 children; no history of abortion (91%) ;no history of infertility(98%)and vaginal delivery(94%).also highest proportion of them had period from last c\s (1-2) years(60%)and had antenatal care(96.5%) .

Table (1): Distribution of women according to demographic characteristic features

Demographic characteristic		No.	%
Age	Age <35	145	72.5
	Age >35	55	27.5
Number of children	1 -2	188	94
	3 - 4	8	4
	5 - 6	4	2
History of infertility	yes	4	2
	no	196	98
Abortion	yes	18	9
	no	182	91
History of vaginal delivery	yes	12	6
	no	188	94
Period from last c/s.	<1 year	13	6.50
	1-2 year	120	60.00
	>2 year	67	33.50
Antenatal care	yes	193	96.50
	no	7	3.50

History of chronic disease

Table(2) show the Distribution of women in a study groups according to history of chronic disease

From the total sample , (15.5%) had history of chronic disease , from them (61,29%) had hypertension and (38,71%) were diabetic .

Table (2): Distribution of women according to History of chronic disease

History of chronic disease	No.	%
Ht	19	61.29
DM	12	38.71
Other	0	0
Total	31	100

Preference regarding type of delivery

Table(3) show the Distribution of a study group according to preference of women regarding type of delivery , the proportion of women prefer c\s (37%) due to fear of pain of NVD 93.24% .

Table (3): Distribution of women according to preference of regarding type of delivery .

Study group		No.	%
Patient prefer Total 200	c\s	74	37
	NVD	126	63
Prefer c\s due to Total 74	Pain	69	93.2
	easy	5	6.7

Causes of previous c/s :

Table (4) show Distribution of women a study group according to causes of previous c/s , the

highest proportion of them did their c\s due to Failure to progress (33%).

Table (4): Causes of previous c\s in women group study

Causes of previous c\s	No.	%
Failure to progress	66	33
Fetal malposition	46	23
Post date pregnancy	43	21.5
Abnormal placenta	18	9
Cephalopelvicdisproportion	16	8
Multible pregnancy	3	1.5
Congenital abnormal baby	2	1
Mother prefer	1	0.5
Other	5	2.5

Giving a vaginal trial :

Table (5) shows that 43.5% were given a vaginal trial , from them 77% were ended with NVD and 23% end with c\s .

Table (5): Giving a vaginal trial

Study group		No.	%
Vaginal trial	Yes	87	43.5
Total 200	no	113	56.5
From vaginal trial	End with NVD	67	77
Total 87	End with c/s	20	23

Causes of c/s in women who had trial of vaginal birth

Table (6) shows distribution of women in study groups who had given a trial of vaginal birth ,that highest proportion of them (85%) had failure to progress in vaginal trial.

Table (6): Distribution of women who had given a trial of vaginal birth

Causes of c\s in patient who has trial of vaginal birth	No.	%
Failure to progress	17	85
Fetal distress	3	15
Total	20	100

End and out come of pregnancy

Table (7)show distribution of women in study groups according to end and outcome of pregnancy ,the highest proportion of women end with c\s(66.5%)and only (0.5%) from total sample had a dead baby

Table (7): Distribution of women according to end and outcome of pregnancy.

Study group		No.	%
End of pregnancy	NVD	67	33.5
	c\s	133	66.5
Outcome of pregnancy	Alive baby	199	99.5
	Dead baby	1	0.5

End of pregnancy and period from last c\s :

Table(9) shows women who had a period less than one year from last c\s ,all of them end with c\s; (100%), while women who had a period from 1 to 2 years from last c/s ; (77.5%) of them end with c/s and women who had a period more than 2 years from last c/s ; (40.30%) of them end with c/s with a high significant association (p value equal or below 0.01).

Table (9): End of pregnancy and period from last

Period		End of pregnancy		total
		NVD	c\s	
< 1 Year	No.	0	13	13
	%	0	100	100
1 – 2 Year	No.	27	93	120
	%	22.5	77.5	100
> 2 Year	No.	40	27	67
	%	59.7	40.3	100
Total	No.	67	133	200
	%	33.5	66.5	100
P value <0.001*				

c\s.

* highly significant difference($p < 0.001$)**Age and end of pregnancy :**

Table (10) shows from the total sample , (72.5%) women, their age were less than 35 years of them (60.7%)end with c\s while women whom their age more than 35 years, (27.5%),of them (81.8%)end with c\s with significant association(p value equal or below 0.005) .

Table (10): relationship between age and End of pregnancy (NVD and c\s)

Age		End of pregnancy		total
		NVD	c\s	
< 35 Year	No.	57	88	145
	%	39.3	60.7	100
> 35 Year	No.	10	45	55

	%	18.2	81.8	100
Total	No.	67	133	200
	%	33.5	66.5	100
P value <0.005*				

* = significant difference (P value <0.005)

Chronic disease and end of pregnancy :

Table (11) shows that ; (93.5%)from total women who had a history of chronic disease end with c\s with significant association (p value equal or less than (0.05) .

Table (11): relationship between Chronic disease and end of pregnancy

Chronic dis.		End of pregnancy		Total
		NVD	c\s	
yes	No.	2	29	31
	%	6.5	93.5	100
No	No.	65	104	169
	%	38.5	61.5	100
total	No.	67	133	200
	%	33.5	66.5	100
P value <0.001*				

* = significant difference (P value <0.001)

History of vaginal delivery and end of pregnancy.

Table (12) shows that; (41.7%) from total women who had history of NVD end with c\s with no significant association(p value more than 0.05) ..

History of vaginal delivery.		End of pregnancy		Total
		NVD	c\s	
yes	No.	7	5	12
	%	58.3	41.7	100
No	No.	60	128	188
	%	31.9	68.1	100
total	No.	67	133	200
	%	33.5	66.5	100
P value 0.062ns				

Table (12): History of vaginal delivery and end of pregnancy

Ns = not significant difference (p value 0.062)

Discussion:

Since 1970s the rate of c\s had significantly increase in high income countries ,with an even steeper rise in middle and low income countries .Overall rate of c\s had raised from less than 7%in the 1970 to over 25% in 2003.This increasing rate had occur despite growing evidence about the undesirable outcome of c\s.⁽⁵⁾ Women included in this study were 200, among them 145 aged <35 and 55>35 years and according to the parity (94%)had 1_2 children while only (4%) and (2%) had 3_4 and 5_6 children respectively.

The history of those women show that (2%) had a history of infertility, and (9%)had history of abortion , (6%)had history of normal vaginal delivery and (96.50%) had antenatal care as defined by the patient by recurrent antenatal visit throughout pregnancy period (at less four visits)⁽⁶⁾.

According to the preference of women to the type of delivery (37%) of women preferring c/s up on NVD due to; fear of pain of NVD (93.24%)and (6.76%)they thought it easier than NVD

In a study set at Distinct General Hospital in Waltford ,Hertfordshire , Thailand-(Attitude And Preference Of The Pregnant Women Towered Mode Of Delivery –September -2010) ⁽⁷⁾from 293 elective c/s;38% were performed due to women request .So the maternal request is significant factor in the rise of c/s rate

In this study most of the causes of previous c/s were due to failure to progress which was (33%) while it was (15.03%)in the second c/s, and (23%) due to fetal mal position while it was (9.77%)in the second c/s,for post date pregnancy it was nearly same percentage for the first and second c/s(21.5)(21.05%) ,abnormal placenta(abruption ,previa) (9.00%) and (3. 76%)in the second c/s,cephalopelvic disproportion (8%) and(2,03%) in the second

c\,s,multiple pregnancy (1.50%)and(3.76%)in the second c\,s,congenital abnormal baby(1.00%)(hydrocephaly (2.26%) in the second c\,s,

mother prefer 1(0.50%) and five other causes include (preacclampsia ,fetal distress) while in the second c\,s 43 women with other causes ;included tubal ligation,preacclampsia and fetal distress.

According to giving a trial of labor and the end of pregnancy, A study of Melamid n (Out come of a trial of labor after c\,s in women with past failed operative vaginal delivery- American Journal of Obstetric and Gynecology -2013))study ,533 women with previous c\,s ,45.6%had a trial of labor)⁽⁸⁾.

According to the success rate of VBAC we notice that percentage of successful trial in this study was 77%which is higher than the percentage in a study conducted in tertiary care military hospital of Muscat ,sultanate Oman(maternal and perinatal out come associate with trial of labor -2004) which was

74.86%)⁽⁹⁾ and also higher than a percentage of successful trial in a study conducted in India(Delivery In Women With Previous c\s- Mahmata Ghandi Institute of medical science -2006)^(10&11).which was 71.2% and also higher than Melamid N (Out come of a trial of labor after c\s in women with past failed operative vaginal delivery- American Journal of Obstetric and Gynecology - 2013)⁽⁸⁾ which was 61.3%⁽¹²⁾ this may reflect a good quality of care in delivery room of these teaching hospital.

In our study we find 0.,85% of women end with emergent c\s due to failure to progress while in study done by Huda Fadhil in al El-wiaya teaching hospital (pregnancy outcome of vaginal birth after c\s in al El-wiaya teaching hospital -2011)the most common causes of emergent cs is failure to progress(68.9%)and fetal distress (25%) and ante partum hemorrhage(5.7%)⁽¹³⁾

There was about 60% of women had a

period of less than two years from last c\s ,this percentage is higher than a percentage in a study in United State in 2013(Short Interpregnancy Interval In The United State-Obestet -Gynecol-2013 -July) which was 35%,this may reflect that, content of antenatal care ,that is in spite of that the majority of women had frequent antenatal care visits but this not improved their attitude towered spacing especially after c\s. ⁽¹⁴⁾

Our study demonstrated that short (less than 12 month) inter delivery interval was significantly associated with decreased (VBAC) success. study of Huang and colleagues(interdelivry interval and the success of vaginal birth after c\s- obstet- gynecol-2002) ⁽¹²⁾;reported a reduced VBAC in patient with an inter delivery interval of less than 19 month, compared with women of longer interval(14% vs 86%; $p < 0,01$),this is may be due to increase rate of maternal and neonatal morbidities and mortalities in women with short interdelivery interval.

throughout this study ;maternal age of more than 35 years associated with low rate of successful vaginal delivery that is 45 out of 55 women end with cesarean section this result agreed with that published by Srinivas (vaginal birth after c\s :dose maternal age affect safety and success? Paediatric perinat epidemiol 2007), ⁽¹⁵⁾ who concluded that women aging 35 years and more have experienced an un successful trial of their labor.

Emmanuel Bujold,(trial of labor in women with previous c\s :dose maternal age influence the outcome? 2004) ⁽¹⁶⁾;have evaluated the effect of maternal age on the rate of vaginal delivery and uterine rupture in women undergoing a trial of labor after previous cesarean section he concluded that ;successful vaginal delivery was inversely related to the maternal age

In this study there is no relation between (VBAC) successful attempts and a history of having

prior vaginal delivery ,this is not consistent with most studies reviewed, a study performed by Gazala.T

In this study we find increase rate of cesarean section in women with chronic disease including diabetes mellitus and hypertension . A study of C.David Naylor,Md,Dr.phil (Cesarean Delivery In Relation To Birth Weight And Gestational Glucose-American Journal of Obstetric and Gynecology-May -1998)(57)demonstrated that in comparism with normoglycemic controls the untreated diabetic patient had increase rate of macrosomia (28.7% vs 13.7) $p=0,001$ and increase in the rate of cesarean section(29.6% vs20,2%) $p=0,02$ this is may be due to increase rate of macrosomia and shoulder dystocia in women with diabetes mellitus,

Many studies report that hypertension with pregnancy will lead to increase in the rate of cesarean section as in Evelyne Reymd (-The prognosis of pregnancy in women with chronic hypertension-American Journal of Obstetric and Gynecology-

August -1994) ⁽¹⁷⁾study which report that primary hypertension in pregnant women will increase cesarean section by (29.6% vs 14.2%) in our study we find that the rate of cesarean section increase in patient with hypertension that 93.5% from all patient with chronic disease end with cesarean section this is could be due to cause of fetal distress and placental insufficiency in those patient .

Conclusion:

1. The rate of c/s was 56,5% which is resembling the rate of c/s in surrounding region.so the success rate of vaginal birth after c\s was 77% which is higher than its in surrounding region .
1. Although the majority of women had frequent antenatal care , most of them had less than 2 year inter delivery interval .as well as the rate of c/s increased with increases age of mother, the history of chronic diseases and short period from last c/s.

References

- 1) Wen SW, Huang L, Liston R, et al. Severe maternal morbidity in Canada, 1991-2001. CMAJ 2005; 173:759.
- 2) Landon MB, Hauth JC, Leveno KJ, et al. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. N Engl J Med 2004; 351:2581.
- 3) Puliyaath G., Vaginal Birth After Caesarean Section (VBAC): A Descriptive Study From Middle East. The Internet Journal of Gynecology and Obstetrics. 2010; 12 :
- 4) Studsgaard A, Skorestengaard M, trial of labor compare to repeat c/s in women with no other risk factor other than previous c/s. obstet gynecol- August 2013
- 5) Department of gynecology and obstetric Firoozgaar hospital Tehran university-medical science-Tehran-Iran

- 6) who antenatal care randomized trial ;manual for implementation of the new model Geneva World health organization 2002.
- 7) Betran ap ,merialdi,M,laver ja,bing-shoun,Thomas, all rate of c\s ,analysis of global ,regional,and national estimaties 2007.
- 8) Melamed N, Segnevm,Hadar E,Reledy,wiznitzer A,yogev E,Amj obst. And gynecol.2013.
- 9) London mb,Hauth ,jc,Leveno kj, cathreno et,maternal and oerinalat outcome associate with tial of labor after previous c\s
- 10) Mukherjee SN.Rising c\s rate ,J obstet, Gyne,India 2006 299-300(Delivery In Women With Previous c\s- Mahmata Ghandi Institute of medical science -2006)
- 11) Chhabra S,Arora G,delivery in women with previous c\s j,obestet. India 2006 56-304Delivery In Women With Previous c\s-Mahmata Ghandi Institute of medical science -2006)

- 12) Huang WH, Nakashima DK, Rumney PJ, Keegan KA Jr, Chan K. Interdelivery interval and the success of vaginal birth after cesarean delivery. *ObstetGynecol* 2002;99:41–4.
- 13) Huda Fadhil –pregnancy out come of vaginal birth after c\§ in al Elwayai teaching hospital 2011
- 14) Alisson Gemmill, MPH,MA and Iura Duberstein lindberg phd.(*American Journal of obstetric and gynecology*)
- 15) American College of Obstetricians and Gynecologists. ACOG practice bulletin no. 54. Vaginal birth after previous cesarean delivery. *Obstetrics and Gynecology*, 2004, 104:203–212.
- 16) Bujold E. , Hammoud A. O., et al. Trial of labor in patients with a previous cesarean section: does maternal age influence the outcome?. *American Journal of Obstetrics & Gynecology*.2004;109:1113-1118
- 17) Evelyne rey MD,MSC, andre ,conturier bsc(*American Journal of obstetric and gynecology*)