Impact of previous cesarean section scar thickness on next pregnancy outcome-Hospital based studyin Tikrit city

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Abstract

A trial of labour after caesarean should be considered in women who present for prenatal care with a history of previous caesarean birth. In certain situations, a trial of labour after C.S will be contraindicated and a repeat caesarean section will be advised but in most, cases, a successful vaginal birth can be safely achieved for both mother and infant. Current study was to identify the role of uterine scar thickness of previous C/S on next pregnancy outcome. A descriptive study of case series were carried from 1st of September 2012 to 30th 1st of August 2013 at Tikrit teaching hospital and 2 private hospitals in Tikrit city. 115 pregnant women with previous cesarean section enrolled in the study were followed to study the mode of delivery after C/S and birth out come. Scar thickness was measured by ultrasound and birth weight with Apgar score were done for newborn .Data collected and analyzed by soft wear program. It was found that 50 cases with previous scar from total (115) subjected to vaginal delivery and there was a significant relation between scar thickness of previous C/S and mode of delivery of current pregnancy, also the study result showed that the birth weight and Apgar score of newborns had a significant relation with mode of delivery. Previous scar thickness plays a role in estimating the subsequence of next pregnancy outcome

Key words: previous scar thickness

INTRODUCTION

Caesarean section: is abdominal delivery of the baby due to either fetal or maternal indications 1,2.A trial of labour after caesarean should be considered in women who present for prenatal care with a history of previous caesarean birth. 3 In certain situations, a trial of labour after C.S will be contraindicated and a repeat caesarean section will be advised but in most, cases, a successful vaginal birth can be safely achieved for both mother and infant. 4

The following are contraindications to trial of labor after caesarean:

1. Previous classical or inverted T uterine scar.
2. Previous hysterotomy or myomectomy entering the uterine cavity.
3. Previous uterine rupture.

4. Placenta previa and malpresentation. 5

Uterine rupture the most serious complications of trial of labour after C.S 6

To better assess the risk of uterine rupture, some authors have proposed sonographic measurement of lower uterine segment thickness near term, assuming that there is aninverse correlation between LUS thickness and the risk of uterine scar defect. 7,8

number of risk factors make the chance of a successful vaginal birth less likely, if you never had a vaginal birth, if you need to be induced and if you over weight. Body mass index (BMI) over 30. When all of these factors are present, 4 in 10 women (40%) have a vaginal birth.9

Aims of the study

To identify the role of uterine scar thickness on next pregnancy outcome regarding mode of delivery, birth weight and Apgar score of newborn babies.

Subject and Method

A descriptive study of case series type was carried from 1st of September 2012to 1st of August 2013at Tikrit teaching hospital and 2 private hospitals in Tikrit city. 115 pregnant women with history of previous cesarean section enrolled in the study and followed to study the mode of delivery after C/S and birth out come after exclusion of cases with permanent causes for cesarean section, also exclude any related confounding factors like age ,parity and gestational age . Scar thickness was measured by ultrasound and study sample divided into 3 groups according to thickness (1st group less than 1.8 mm and the 2nd between 1.8-2.8 mm and 3rd group more than2.8 mm) and birth weight with Apgar score were done for newborn .Data collected and analyzed by soft ware program using chi-square test of significant and the significant level at $p \leq 0.05$.

Results

Mean age of study population was found about (27 ± 4.7) years while the mean of parity was (3± 1) and mean of gestational age was (38 ± 1.35) as showed in table (1).

From table (2) the causes of current C/S in comparison with causes of previous C/S while table (3) explain the frequency distribution of cases according to scar thickness, it was found that scar thickness had a significant relation ($p \leq 0.05$) with mode of delivery of subsequent pregnancy and 50 (43.5%) cases delivered by normal vaginal birth after previous C/S and the chance increased with increase in the thickness of the scar.

Table (4) explain the relation between mode of delivery and birth outcome

regarding birth weight and Apgar score of newborns babies also there was a significant relation between these outcomes and mode of delivery .

Discussion

Caesarean section is a surgical intervention to deliver the baby due to maternal or fetal causes (1), or refers to an operation that is performed to deliver the baby via the trans-abdominal rout (2).

In certain situation a trial of labour after CS will be advice and successful vaginal birth can be safely occur after CS(3).there is significant increase in incidence of cesarean section rate over the past year and in many instances CS deliveries are considered to be life saving procedure for both mother and baby (4).the aims of many studies to decrease the incidence of CS after one scar are adviced a successful vaginal birth after CS to avoid complications of general anesthesia , endomyometritis ,thromboembolism , wound infection and other complication(5).

Uterine rupture is uncommon but potentially catastrophic complication of a trial of vaginal birth after cesarean section (V.B.A.C) (6).several studies have reported the perinatal risks of failed trail of labour and uterine rupture in women attempting V.B.A.C.(7).The findings of current study indicate that there is a strong association between the degree of lower segment thickness and the outcome of vaginal birth. There is significant relation between scar thickness of previous CS and mode of delivery of current pregnancy ,and also significant relations between the birth weight and APgar'scors of newborns with mode of delivery .Previous scar thickness play a role in estimating the subsequences of next pregnancy outcome until recently ,the 3.5mm cut-off value for full LUs (lower uterine segment) thickness was the best validated (8).

Measurement of the myometrial layer was expected to be more representative of LUS thickness ,as the outer bladder wall is unlikely to contribute to the functional integrity of the LUS (9).

In current study there is a strong relation between increase chance of successful vaginal birth after CS if there is increase in uterine thickness these findings goes with findings of Cheung study10.

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Table (1) characteristic of sample population

characteristic	Mean ± SD
1- Age	27 ± 4.7
2- Parity	3 ± 1
3- Gestational age	38± 1 .35

Table (2) causes of C/S

Causes of C/S	Previous c/s	Current c/s
CPD	21	19
APH	20	7
BREECH	12	3
FETAL DISTRESS	25	12
PET	19	15
CHRONIC DISEASES	12	5
OTHER	5	4
TOTAL	115	65

Table(3) Distribution of cases according to uterine scar thickness and mode of delivery

Scar thickness	C/S		NVD		Total	
	No.	%	No.	%	No.	%
≤1.8	32	80%	8	20%	40	34.8%
1.8- 3.8	19	48.7%	20	51.35	39	33.9%
≥ 3.8	14	38.9%	22	61.1%	36	31.3%
TOTAL	65		50		115	100%

$X^2 = 9.343$ df=2 $p \leq 0.05$

Table (4) Birth outcome of cases

OUT come	NVD	C/S	P - VALUE
1-Birth weight			$X^2 = 6.83$
Normal	35	58	DF =1
Abnormal	15	7	$P \leq 0.05$
2-Apgar score			$X^2 = 6.51$
Normal	31	54	Df = 1
abnormal	19	11	$P \leq 0.05$