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## Second Delivery in Women with a Previous Elective Caesarean Section for Breech Presentation in first Pregnancy

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### Abstract:

**Objective:** To evaluate the mode of next delivery and fetal presentation for women who had an elective caesarean section for breech presentation when primigravidae.

**Design:** Retrospective- follow up cohort study.

**Setting:** Al- Yarmouk Teaching Hospital/department of Obstetrics and Gynaecology.

**Methods:** 333 women who presented for delivery of their second baby at  $\geq 34$  weeks of gestation during the period Jan 2002- Jan 2004 with a history of an elective caesarean section when primigravidae: 189 of them for a breech presentation and 144 for other indications with a cephalic presentation, were studied to evaluate the fetal presentation and the mode of their second delivery.

**Results:** Of 189 women who had an elective caesarean section with a breech presentation when primigravidae, 16 (8.5%) had a breech presentation at the time of elective caesarean section for their next baby compared with only 3 (2.1%) in women who had an elective caesarean section with a cephalic presentation when primigravidae (RR 4.06 [95% CI 1.2 to 13.67]).

The overall repeat section rate was 41.3% (n = 78) in women with a previous breech presentation (n = 189), compared with 59% (n = 85) in women with a previous cephalic presentation (n = 144) (RR 0.70 [95% CI 0.56 to 0.86]).

The vaginal birth rate for those women allowed to labour was 80.4% (n=111) if the presentation previously was breech (n = 138) compared with 64.8% (n = 59) if the presentation previously was cephalic (n=91) (RR 1.24 [95% CI 1.04 to 1.47]).

**Conclusions:** Women who had an elective caesarean section for a breech presentation when primigravidae were shown to have 8.5% chance of having an elective caesarean section for a breech presentation in their second pregnancy. The incidence of repeat caesarean section for their second baby was 41.3%, and of those allowed to labour, 80.4% achieved a vaginal delivery compared with 59% and 64.8% respectively for women who had an elective caesarean section with a cephalic presentation in their first pregnancy. These results will help in counseling primigravida women with a breech presentation intended to be delivered by an elective caesarean section, "aiming at reduction of perinatal morbidity and mortality", about the good chances of a successful vaginal birth of their second baby with a cephalic presentation and also provides more information about mode of delivery in the presence of previous one caesarean section.

**Key words:** previous caesarean section, breech, second delivery

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### Introduction

The overall incidence of a breech presentation is 3-4% with its management being an area of intense controversy and at least 30% of babies presenting by the breech are now delivered by elective caesarean section, because of possible long-term damage, which can result from a vaginal birth<sup>[1]</sup>. Mauriceau described a maneuver for the gentle delivery of the after-coming head in the sixteenth century, and the mode of delivery of the breech remained essentially unchanged until the late 1950s, when caesarean section was first recommended on a routine basis. It was thought that this might minimize the perinatal morbidity and mortality of the breech presenting fetus<sup>[2]</sup>.

A feature of modern obstetrics has been the increase in the incidence of elective caesarean section for breech presentation. A total of 24 studies that compared planned vaginal delivery with planned caesarean section for the term, singleton breech fetus were analyzed by Cheng and Hannah (1993) and the perinatal mortality rate (corrected for lethal congenital anomalies and antepartum fetal death) was found to range from 0 - 48 per 1000 births and was higher among infants in the planned

vaginal delivery groups. The main causes of death were head entrapment, cerebral injury and hemorrhage, cord prolapse, and severe asphyxia<sup>[3]</sup>.

Similarly, Gifford and co-workers (1995) performed a meta-analysis of outcomes after term breech delivery and observed that, given many methodological limitations of published studies, their analysis suggested an increased risk of injury or death after a trial of labour<sup>[4]</sup>. This was also confirmed by the recent multicenter trial on planned caesarean section versus planned vaginal birth for breech presentation at term<sup>[5]</sup>.

As a consequence of these results, it is expected that the incidence of elective caesarean sections for breech presentation will increase worldwide in the future. The latest Royal College of Obstetrics and Gynaecology (RCOG) Guidelines on the management of breech presentation are also likely to accelerate this trend<sup>[6]</sup>. In many countries, the caesarean section rate for a breech presentation is now of the order of 80%<sup>[7]</sup>.

Although some have calculated a relative risk of maternal mortality in caesarean section of 7, decreasing to 5 after exclusion of women with

medical or life threatening complications, most of the surplus risk occurred in emergency caesareans, when the relative risk was 11, compared with elective caesareans when the risk was only 4<sup>[8]</sup>. This excess risk for emergency caesareans has led one set of authors to use decision analysis to recommend routine elective caesarean section for the delivery of the term breech presentation. They calculated that the overall risk to the population when more than 30% of caesareans were emergency exceeded that of 100% elective Caesareans<sup>[9]</sup>.

This increase in the incidence of elective caesarean sections for a breech presentation has implications not just for the index pregnancy, however, but also increases the likelihood of a woman, particularly a primigravida, requiring a repeat caesarean section in subsequent pregnancies<sup>[10]</sup>.

Factors affecting the outcome of a trial of labour after caesarean section were shown by Troyer et al (1992), Learman et al (1996) and Weinstein et al (1996)<sup>[11,12,13]</sup> to be the followings:

\*Reason for the primary caesarean section

	Success rate
-dystocia	66%
-malpresentation	84%
-fetal distress	75%
-other	78%

\*Previous vaginal delivery

\*Uterine incision type

\*Gestational age at previous caesarean section

\*Scar integrity

\*Oxytocin usage

\*Number of prior caesarean delivery

Previous reports have suggested that women who have a caesarean section for a breech presentation are more likely to deliver vaginally subsequently than women who have a caesarean section for other indications<sup>[14, 15]</sup>. To eliminate the important confounding variables of parity and previous labour that might make these reports inconclusive, we included only those women who presented for delivery of their second baby with an elective caesarean section for their first pregnancy.

The aim of this study was to evaluate the fetal presentation and the mode of delivery in the second pregnancy for women who had an elective caesarean section for a breech presentation in their first pregnancy.

## Methods

This study, that was carried out in Al-Yarmouk Teaching Hospital/ department of Obstetrics and Gynaecology for the period Jan 2002 -Jan 2004, enrolled 189 women who presented for delivery of their second baby (> 34 weeks of gestation) with a history of an elective caesarean section for a breech presentation in their first pregnancy at or near term 1 - 4 years before the index pregnancy. The fetal

presentation and the mode of delivery for the second baby in these women were compared with the fetal presentation and mode of delivery of 144 women who had a cephalic presentation at the time of elective caesarean section for their first baby at or near term and who were admitted to this hospital during the same period for delivery of their second baby of the same gestational age.

The indications for the elective first caesarean sections were taken from the patients themselves directly and from their previous discharging cards and those who were not sure of the exact indication and those with chronic medical diseases were not included in the study. Those women with breech fetal presentation were delivered by repeat caesarean section. Those cases who were remote from term were not included to improve the result about fetal presentation although it was found by many studies that the management of labour with a cephalic presentation between 24 and 34 weeks should not differ significantly from that past 34 weeks<sup>[16,17,18]</sup>, with perhaps the preterm breech presentation having special consideration<sup>[19]</sup>. Vaginal birth was encouraged for those with a cephalic fetal presentation unless an indication for repeat elective caesarean section was present. Careful observation of the fetal heart rate was done during labour "though not continuously" by the aid of sonic-aid devices because of shortage of electronic cardiotocographic monitors as part of the deteriorations that took place in Iraqi hospitals as a result of the economic sanctions imposed on Iraq. Oxytocin was needed to be used in a minority of patients after careful evaluation by a senior obstetrician with a very close observation throughout labour.

In this study, percentages and the relative risks (RR) and their 95% confidence interval (CI) were estimated using computer facility (SPSS 11.5)

[Statistical Package for Social science – Version 11.5].

## Results

The indications for the elective caesarean section in first pregnancy with a cephalic presentation ( n=144 ) were: intrauterine growth restriction (IUGR) with or without pre-eclampsia (PE) [n = 73] , post-term pregnancy with poor fetal condition [n = 49] , placenta previa [n = 9] , transverse lie [n = 3] , other indications [n = 10] as shown in table (1).

As shown in table (2), it was found that women who had an elective section with a breech presentation in their first pregnancy were more likely to have a breech presentation in their second pregnancy than women with a cephalic presentation, 8.5% Vs. 2.1% respectively ( RR 4.06 [ 95% CI [ 1.20 to 13.67 ] ) .

**Table1: The indications for elective caesarean section with a cephalic presentation in first pregnancy.**

Indication	No.	%
IUGR with or without PE	73	50.7%
Post-term with poor fetal condition	49	34%
Placenta previa	9	6.3%
Transverse lie	3	2.1%
Other	10	6.9%
<b>Total</b>	<b>144</b>	<b>100%</b>

**Table (2): The fetal presentation at repeat elective caesarean section for the second baby.**

Presentation	Previous breech N=189	Previous cephalic N=144
Breech	16 (8.5%)	3 (2.1%)
Cephalic	35 (18.5%)	50 (34.7%)
<b>Total</b>	<b>51 (27%)</b>	<b>53 (36.8%)</b>

As shown in table(3),the overall repeat section rate was lower in women with a previous breech presentation (41.3%) compared with 59% in women with a previous cephalic presentation ( RR 0.70 [ 95% CI 0.56 to 0.86 ] ).

Of those women allowed to labour after elective section as primigravidae, the vaginal birth rate was higher 80.4% (111 of 138) if the

Presentation previously was breech, compared with 64.8% (59 of 91) if the presentation previously was cephalic (RR1.24 [95%CI 1.04 to 1.47]). As shown in table (4), the frequency of caesarean section for

dystocia was 8.7% in the previous breech group compared with 15.4% in the previous cephalic group (RR 0.56 [95% CI 0.27 to 1.16]) .There was no significant difference in the mean birth weight in the two groups that might explain the more frequency of dystocia in the previous cephalic group although it didn't reach the level of significance. Mean birth weight in the previous breech presentation was 3.123 Kg  $\pm$  0.501 Vs. 3.210 Kg  $\pm$  0.498 in the previous cephalic presentation (p > 0.05).

Table (3): The mode of delivery for the second baby after elective caesarean section for the first baby.

Mode of delivery	Previous breech N=189	Previous cephalic N=144
Spontaneous vaginal	91 (48.1%)	44 (30.6%)
Instrumental vaginal	20 (10.6%)	15 (10.4%)
Emergency section	27 (14.3%)	32 (22.2%)
Elective section	51 (27%)	53 (36.8%)

Table (4): The indications for repeat emergency caesarean section in labour for the second baby.

Indication	Previous breech Presentation n=138	Previous cephalic Presentation n=91
Dystocia	12 ( 8.7% )	14 ( 15.4% )
Fetal distress	10 ( 7.2% )	11 (12.1% )
Other	5 ( 3.6% )	7 ( 7.7% )
<b>Total</b>	<b>27 ( 19.5% )</b>	<b>32 ( 35.2% )</b>

As shown in table (5) less women [ 27% ( n= 51 ) ] with a previous elective section for breech presentation needed a repeat elective section as compared with [ 38.8% ( n= 53 ) ] of women with a previous elective section with a cephalic presentation although it didn't reach the level of significance ( RR 0.73 [ 95% CI 0.53 to 1.05 ] ). From the birth data of Al-Yarmouk Teaching Hospital/ department of Obstetrics and

Gynaecology of the year 2001, it was found that the frequency of breech presentation was 4.5% and in the same year the caesarean section rate for a breech presentation was 61.3%. As for primigravidae there were 220 caesarean sections; 85 of them (38.6%) were elective for breech presentation. These findings raised the need for such a study.

**Table (5): The Indications for repeat elective section for the second Baby.**

Indication	Previous breech Presentation n=189	Previous cephalic presentation n=144
Breech presentation	16 ( 8.5% )	3 ( 2.1% )
Other	35 ( 18.5% )	50 ( 34.7% )
<b>Total</b>	<b>51 ( 27% )</b>	<b>53 ( 38.8% )</b>

**Table (6): The indications for repeat elective section with a cephalic presentation in the index pregnancy.**

Indication	Previous breech n=189	Previous cephalic n=144
PET	8 ( 4.2% )	12 ( 8.3% )
Post-term with poor fetal condition	8 ( 4.2% )	13 ( 9% )
Cephalo-pelvic disproportion	7 ( 3.7% )	10 ( 6.9% )
IUGR	6 ( 3.2% )	8 ( 5.6% )
Other	6 ( 3.2% )	7 ( 8.9% )
<b>Total</b>	<b>35 ( 18.5% )</b>	<b>50 ( 34.7% )</b>

**Discussion:**

There has been a trend in this and other hospitals in Iraq towards increase elective caesarean section rate for primigravida with breech presentation in the past years , probably trying to reduce the possible associated increased risk of fetal morbidity and mortality accompanying vaginal breech delivery taking into account the bad influence these complications might impose on a nulliparous woman .

In 1989 Enkin M. <sup>[14]</sup>, did a large review of delivery following previous caesarean section and the incidence of vaginal delivery with a trial of labour in women with a previous caesarean section was analyzed by the indication for primary section. The incidence of vaginal birth with previous breech was 84%, this compares well with a vaginal birth rate of 80.4% shown in our study.

In 2002 Carol Coughlan et al <sup>[20]</sup>, viewed that analysis by indication for primary section may be unreliable because it may be affected by variables such as a previous labour or previous vaginal delivery and to eliminate these variables they confined their study only to women who had an elective caesarean section for their first pregnancy . In our study the same concept has been followed and our results compared well with those showed by them .

Our study showed that women who had an elective caesarean section for breech presentation in their first pregnancy are more likely to have a vaginal delivery for their second baby than those who had the elective section with a cephalic presentation for their first baby, therefore , are less likely to need a caesarean section for their third and subsequent deliveries ; since the presence of two

caesarean sections is an indication to repeat the operation in subsequent deliveries in our hospitals and other parts of the world because of the higher incidence of uterine rupture in the presence of two or more uterine scars than after one scar<sup>[21]</sup>, despite the appearance of several papers that supported the safety and feasibility of the vaginal route after more than one section<sup>[22,23,24]</sup>.

It was found that there is a higher breech presentation in second pregnancy in women with previous breech than in women with previous cephalic presentation. This agrees with the general concept that women who have had a breech presentation at term are significantly more likely to have another in a subsequent pregnancy and this is usually associated with extended fetal legs<sup>[25,26]</sup>.

### Conclusion:

The high success rate, shown in this study, of vaginal birth in the second pregnancy for those women allowed to labour with a history of elective caesarean section for a breech presentation in their first pregnancy can be used to counsel primigravida women with breech presentation. It is recommended that they should be presented with the options for mode of delivery after careful evaluation and they should know that a vaginal breech delivery is probably more risky for their fetuses, and one can alleviate their fears of certainly having a repeat caesarean section for second and subsequent pregnancies by this high success rate of vaginal birth found in this and other studies. This Study also provides more information about trials of labour in the presence of one lower segment caesarean section scar, yet more research is needed in this field.

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