

Outcome of Subsequent Labour After Primary Caesarean Section For Arrest Disorders in Teenage Pregnancies

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Abstract

Context: Teenage mothers are at risk of numerous problems among Which is cephalopelvic disproportion or obstructed labour because of small and immature pelvis. This leads to a tendency to allowing trial of scar in subsequent pregnancies because the teenage pelvis might have not reached full capacity as at the time of the previous caesarean section. Despite the fact that some of the patients had a height of more than 152cm. Complications of scar dehiscence, haemorrhage, sepsis etc., and perinatal morbidity / therefore imperative to examine the outcome of labour in teenage mothers with one lower uterine segment caesarean section scar in which the section was done because of obstructed labour or CPD.

Objective: To determine the outcome of trial of labour after one Previous lower uterine segment transverse caesarean section. The main focus is possibility of vaginal delivery and associated morbidity mortality and mortality.

Design: A longitudinal study (1993-1999).

Participants And Methods: teenage mothers with one previous lower transverse uterine segment caesarean section scar which was performed 2-3 Years earlier were allowed to labour. All these caesarean sections were primarily done because of cephalopelvic disproportion with or without obstructed labour.(excluded were those with more than 3 Years- as these were already over 19 Years).

Setting: University of Maiduguri Teaching Hospital, Maiduguri, Nigeria.

Main Outcome Measures: The possibility of vaginal delivery, the fetal outcome and associated morbidity and mortality.

Results: 66 women were eligible for the study. 67% successfully achieved vaginal delivery. There was no maternal mortality even though there were 2 cases of ruptured uterus.

Conclusion: Mothers aged 19 years and under with one previous transverse lower uterine segment caesarean section scar performed for cephalopelvic disproportion or obstructed labour should be allowed to labour with the aim of achieving vaginal delivery. This was found to be very possible and of benefit in this study.

Introduction

The Caesarean Section (C/S) rate tends to be high in teenage pregnancies because of disproportion and eclampsia. The disproportion tends to be common in teenage pregnancies because of the incomplete pelvic growth^{1,2}. This subsequently may improve as the maternal age advances.

The pelvic shape and size, are genetically determined, but there is evidence that other factors, particularly chronic malnutrition and infections adversely affect the growth of the pelvis in childhood. Even if nutrition is subsequently improved; the reduced capacity and deformities persist resulting in obstructed labour^{2,3}. It is paramount to note that teenage mothers aged 18 Years and under in the absence of above added childhood disorders are at greater risk of obstructed labour. Routine maternal height measurement during antenatal bookings is to identify mothers with a height of 150cm or less because below this level the risk of obstructed labour increases. Teenage mothers with height above 155cm have been found to be obstructed in labour because of an immature small pelvis³. The ossification of the female pelvic bone starts about the age of 15 years and stops about the age of 25 years². The presence of a caesarean section scar greatly increases the risk of

morbidity especially with a previous history of obstructed labour^{3,14,15}.

However, considering the economic hardship in Nigeria, there is the need to reduce the rate of caesarean sections. A trial of labour after previous caesarean delivery has been accepted as means of reducing the overall caesarean delivery rate^{4,5}. Any caesarean section is likely to require longer hospitalisation and increased cost^{1,5}.

Although there is a strong consensus that trial of labour is appropriate for most adult females who had had a previous lower uterine transverse caesarean delivery; increased experience with vaginal birth after caesarean delivery indicates there are still several potential problems like scar dehiscence, haemorrhage, maternal and perinatal mortality etc^{2,3,6,7}. Therefore, where a trial of labour is contemplated, effort must be made to select the patients, and teenage mothers qualify for selection because their growing pelvis could have reached a pelvic capacity compatible with vaginal delivery after previous caesarean section.

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Among women who attempted a trial of labour after a previous lower uterine transverse caesarean section, 60 to 80 percent may achieve vaginal delivery and with a lower morbidity^{7,8,9}. The relevant issues now is the mortality and morbidity associated with the trial of labour.

We therefore studied the outcome of labour in teenage mothers with primary lower uterine segment transverse caesarean section scar. (I⁰LSCS) The main aim was to determine the chances and safety of vaginal delivery in our center and to highlight factors that can be used in reducing the morbidity and mortality in trial of labour after a previous lower uterine segment transverse caesarean section.

Materials and Methods

This longitudinal study was conducted at the University of Maiduguri Teaching Hospital, maiduguri, Nigeria. 1998. The main criteria for inclusion (i) Teenage mothers aged 19 Years and under, (ii) with one previous lower uterine segment transverse caesarean section scar, (iii) indication for that primary caesarean section was either cephalopelvic disproportion with or without obstructed labour. (iv) unbooked mothers were admitted and their heights taken later and (v) These were single fetuses at term presenting cephalic with fully flexed head. The same patients who had caesarean section done 2-3 Years earlier were the same ones that were followed and studied. Some of the exclusion criteria were adopted in the second delivery.

Excluded were cases of face presentation, brow and malrotated heads as primary indications for the first Caesarean section simply because they could be causal factors. Also excluded were mothers with antepartum haemorrhage, intrauterine fetal death, abnormal lies and preeclampsia and eclampsia in index pregnancy.

The data information included, maternal age height, booking status and the socio-economic class status. Lateral x-ray pelvimetry was not done for 2 reasons. One, because majority of patients could not afford it and secondly its value has been greatly questioned². The duration of labour, mode of delivery and labour outcome were also noted. These findings were collated and where appropriate the students test and chi-square were used for statistical analysis.

A p-value of less than 0.05 was taken as significant.

Control: The patients acted as their own controls.

Results

Within the period under study, there were 9, 268 total deliveries and teenage deliveries constituted 1402 (15.1%) cases.

Total deliveries by caesarean section was 722 giving a caesarean section rate of 7.8%. The overall caesarean section rate in teenagers was 14% (n=132) this constituted 18.3% of all caesarean sections.

The C/S rate among teenagers was 9.4% (132/1402). Among the teenagers 72 (5.1%) had C/S due to CPD; (72/1402) out of these, 66 were studied; 46

of them suffered obstructed labour, 16 of whom were booked for antenatal care. Patients who received oxytocin did not have any problems.

In first labour, 7 were induced for postdatism and 4 were augmented for dysfunctional labour. In the second labour 2 were induced and 2 augmented.

In the first labour, 81% presented later or in obstructed labour while in the second labour about the. Same proportion presented before 7cm cervical dilatation.

The ages, heights, booking status and socio-economic class status of mothers in the first and second pregnancies is shown in table 1.

Table 1
Demographic Characteristics Of The Patients

Patient Characteristics	First Delivery	Second Delivery
Mean Age (YEARS)	16.3 (SD± 074)	18. 1(SD ± O. 93)
		P 0.001
Mean Height	155 (SD± 4. 77)	157.4 (SD ±4. 67)
Booking Status		P= 0.002
Booked	28 (24. 4%)	24 (36.4%)
Unbooked	38 (57.6%)	24 (63.6%)
Social Class		P 0.003
Upper	27(40. 9%)	26 (39. 4%)
Lower	39 (59.1%)	40 (60. 6%)
		P 0.004

= t = 1.274. P 0.0.5

Table1: showed a mean age and height differences of 1.1 Years and 2.4cm between first and second deliveries respectively. Most of the patients were either unbooked or in the low social class order.

Table 2: Outcome Of Labour

Outcome Of Labour	First Delivery	Second Delivery
Spontaneous Vaginal Delivery		
Booked		19 (28.8)
Unbooked		16 (24.2)
		P 0.004
CAESAREAN SECTION		
Elective	3 (4.5)	3(4.5)
Emergency	63 (95.5)	17 (25.6)
		P 0.004
FORCEPS/ VACUUM		
Booked	-	2 (3.0)
Unbooked		7 (10.6)
LAPAROTOMY DUE TO		
UTERINE RUPTURE	-	2 (3.0)
MEAN DURATION OF LABOUR (hrs)		
Booked	11. 5	9.67 t = 1. 274
Unbooked	15. 28	13. 05 t= 1. 159

% in parenthesis

Table II Indicated that about 66. 7% (n= 44) achieved vaginal delivery with or without assistance with either forceps or vacuum extractor.

Of the emergency caesarean operation, 16 were for CPD, 4 for fetal distress and one each for breech presentation and fetal distress respectively.

Maternal exhaustion was the main indication for assisted vaginal delivery. Uterine rupture occurred in unbooked mothers.

There is no statistical difference in the duration of labour between the 1st delivery and the second delivery in unbooked mothers. However labour duration was shorter in booked mothers who were slightly better in the second deliveries.

Table 111 shows the birth weights and Apgar scores were significantly better in second pregnancies and booked mothers:

Tables 3: Foetal Outcome

Foetaloutcome	First Delivery	Second Delivery
MEAN BIRTH WEIGHT (KG)	3.0(SD = 0.311	3.28(SD =0.305)
Booked	2.77 (SD= 223)	2.83(SD=0.219)
Unbooked	8/ 10	P <0.002
APGAR SCORE		9/ 10
Booked	7/8	
Unbooked		P<0.003
PERINATAL DEATH	4=(143/1000)	2=(83/1000)
Booked		
Unbooked	8= (211/ 1000)	4=(95 /1000)
		P< 0.001)

Table 111: Shows the birth weights and Apgar scores were significantly better in The overall perinatal mortality was significantly higher in first pregnancies and unbooked mothers.

Table IV: Maternal Complications

COMPLICATIONS	FIRST DELIVERY	SECOND DELIVERY
Uterine rupture	-	2 (3.0)
Vesico vagina fistulae	3 (4.5)	-
Puerperal sepsis	11 (16.7)	8 (1.1)
Abdominal wound sepsis	5 (7.6)	5 (7.6)

% in parenthesis . P<0.002.

There were more complications in the first labour especially VVF. (Table IV).

Discussion

Cephalopelvic disproportion due to contracted pelvis as an indication for caesarean section in an adult may be considered a recurrent factor and therefore fulfill a textbook requirement for either a short trial of labour or in most cases a repeat caesarean section for most obstetricians practicing in the tropics.

This is even more possible in developing countries where chronic childhood diseases e.g malnutrition, infection and anaemia affect the desired matured pelvic bone development and growth^{2,11} .

Caesarean section in a teenage mother aged 16 Years and under is of special obstetric interest especially when the primary indication is CPD. Previous reports showed that many patients with a previous diagnosis of dystocia due to CPD were able to deliver successfully per vaginam but at much lower rate¹¹⁻¹³.

Moerman² demonstrated that growth of the pelvic bone continues during adolescents period, but at a lesser rate than the bones associated with heath. He further demonstrated that the pelvic bone capacity growth attains a level of optimal obstetric function at the age of 18 Years. The growth continues during this period; labour outcome 2 to 3 Years after CPD may be expected to have a favourable prospects of vaginal delivery. The success rate of 66. 7% for vaginal delivery in this study supports Moerman's observations. This figure is less than the 86% successful vaginal delivery observed in teenagers by Cunningham et al in 1993.¹⁰ .

This difference is not surprising, while our study dealt with CPD as the primary indication for the caesarean delivery, their study included all indications and parity. The results of this study and that reported by Cunningham et al¹⁰ truly testifies that trial of vaginal delivery in teenagers with one caesarean section scar should be attempted and encouraged. In addition appropriate selection must be done and facilities for surgical intervention must be available.

The lack of significant improvement in booking status in some of the patients was due to fear of repeat caesarean section in the subsequent pregnancy which was largely attributed to ignorance, illiteracy and poor socio-economic status.

Traditional beliefs, pressure from elders, ignorance or poverty encourage at least one offspring be delivered at home to satisfy the customs of the people. These home labours in which no modern facility is allowed usually end in prolonged labour so that by the time hospital assistance is sought the effect of prolonged labour on the mother and fetus usually indicate or in some case prejudices the working staff to opt for a caesarean delivery.¹⁴

The improvement in vaginal delivery in the second labour was for two reason; the patients presented early to be properly managed and secondly it was possible that significant pelvic bone growth contributed in successful vaginal delivery.

Labour that is properly supervised in the hospital as seen carries a better prospects of a shorter duration, better chance of vaginal delivery, Apgar score and lesser

chance of complications. This is clearly demonstrated in this study. Assisted vaginal delivery with the aid of forceps/vacuum was successful in some of the patients. The main indications were maternal exhaustion, fetal distress and delayed second stage of labour. The values of these procedures in reducing the number of caesarean section is remarkable especially when assessment and judgment are reasonably followed³.

The perinatal mortality was more in unbooked mothers and those who laboured initially at home. However the figure obtained was less than earlier reported by Aimakhu in a population of mixed ages¹¹.

The two cases of uterine rupture were due to obstructed labour and in unbooked mothers. There was obvious intra- uterine sepsis at the primary caesarean. They were also anaemic and did not receive optimal antibiotics. These were likely primary reasons for a weak scar. In addition they reported late to the hospital after scar disruption had occurred¹⁵. The three patients who had a successful VVF repair following the first delivery were electively delivered by caesarean section. Some mothers who subsequently presented in obstructed labour were aggressively managed to prevent VVF complication. Another reason why VVF was prevented in the second labour was due to the fact that booking for antenatal care and early presentation in labour were improved.

Likewise more cases of abdominal wound and puerperal sepsis were noted in unbooked patients principally because these mothers could not afford blood processing and antibiotics.

In conclusion, teenage mothers with lower uterine segment transverse caesarean section done because of CPD should be allowed to attempt vaginal delivery after excluding contracted pelvis and rulling out other indications and factors that predispose to caesarean section.

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