

**POST-CAESAREAN PREGNANCY AND LABOUR†**  
(An Analysis of 110 Cases)

by

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*Introduction*

Post-caesarean pregnancy and labour is an obstetric problem confronted rather frequently in the present day obstetric practice. The wider range of safety afforded by modern facilities has caused a considerable increase in the incidence of both primary and repeat caesarean section. There had been a great deal of controversies regarding the dictum "Once a caesarean section, always a section." But the medical literature in the last few decades throughout the world reveals a change in the previous trends of management of post-caesarean pregnancy and labour. Most of the authors are of the opinion that all patients with history of previous caesarean section should in all future pregnancies be admitted for hospital delivery where all facilities are available to tackle any obstetric emergency that may arise. Under such favourable circumstances vaginal delivery may be permitted in suitable cases with close supervision (Jacob and Bhargava 1971).

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*Material and Methods*

The present prospective study of 110 cases of post-caesarean pregnancy and labour was carried out in the Department of Obstetrics and Gynaecology, Gauhati Medical College, during the period between 1st September, 1974 and 30th November, 1975. The cases were properly evaluated clinically and managed according to individual suitability. Repeat section was not performed as a routine. A special note was taken on the nature and type of previous caesarean section, indications, weight of the babies at birth, post operative morbidity and number of deliveries following the last section. Elective caesarean section was performed in patients with cephalopelvic disproportion. Patient allowed to go into labour for vaginal delivery were closely supervised and nature of uterine contraction, progress of labour and development of scar tenderness if any, were carefully noted. At the time of repeat section tissue from previous caesarean scar was taken for histological study.

*Results and Observations*

1. *Incidence of Post Caesarean Delivery:* In the present study the incidence of post-caesarean delivery in relation to the total number of deliveries in the hospital is 2.4 per cent. Table I shows

TABLE I  
Incidence of Post Caesarean Delivery

Authors & Year	Total No. of deliveries	Total post Caesarean deliveries	Incidence per cent.
1. Wilson 1951	—	—	1.5
2. Peel & Chamberlain 1968	40,225	1,440	3.58
3. Ghose 1973	—	1,022	1.07
4. Present series 1974-75	4,556	110	2.4

the comparative incidence reported by other authors.

There is a gradual rise in the incidence of post-caesarean delivery and this is due to the increase in the caesarean section rate at the present time. Peel and Chamberlain (1968) reported a slightly higher (3.58%) and Ghose (1973) slightly lower (1.07%) in incidence than that of the present series (2.4%).

**2. Age and Parity:** The maximum number of patients was found in the age group of 21 to 30 years (87 cases) and in para 1 (76 cases) (Tables II and III).

**3. Mode of Delivery:** The overall vaginal delivery rate was 34.55 per cent (38 cases) and repeat section was performed in 65.45 per cent (72 cases). Out of 110 cases, 61 cases were selected for repeat section and 49 cases for vaginal delivery. Table IV shows the selection of patients for the method of delivery.

Successful vaginal delivery in the present series (34.55%) is comparable to that of Wilson (1951)—33.6 per cent and

TABLE IV  
Selection of Patients for the Method of Delivery

Total No. of patients	110
Cases selected for repeat section	61 (55.45 per cent)
Cases selected for vaginal delivery	49 (44.55 per cent)
Vaginal delivery took place in	38 (77.55 per cent)
Repeat section after failure of attempted vaginal delivery	11 (22.45 per cent)

Ghose (1973)—32.14 per cent. It is not significantly lower than other authors as shown in Table V.

**4. Vaginal Delivery in Selected Cases:** In the present study of 110 cases, 49 cases (44.55%) were selected for vaginal delivery. Of the 49 cases selected for vaginal delivery, 40 comprised of previous non-recurrent indication, 5 of previous section for suspected disproportion who showed no cephalopelvic disproportion in the

TABLES II & III  
Age and Parity Distribution

Age group in years	15-20	21-25	26-30	31-35	36 & above	Total
No. of cases	12	42	45	10	1	110
Parity	1	2	3	4	5	110
No. of cases	76	23	5	5	1	110

TABLE V  
Incidence of Vaginal Delivery

Authors & Year	Total vaginal delivery	Percentage
1. Wilson 1951	167	33.6
2. Menon 1962	324	45.8
3. Jacob & Bhargava 1971	53	40.8
4. Ghose 1973	230	32.14
5. Present series 1974-75	38	34.55

present pregnancy and 4 of previous unknown indications who were found to have adequate pelvis on clinical examination. Fifteen cases with non-recurrent indication for previous section were not selected for vaginal delivery because of the following reasons—transverse lie 1, unstable lie 1, bad obstetric history 1, cord prolapse 1, previous classical section 1, placenta previa 4, pre-eclamptic toxæmia with antepartum haemorrhage 1, post-maturity 4, and obstructing cyst in vaginal canal 1 case.

Out of 49 cases selected for vaginal delivery 38 (77.55%) had successful vaginal delivery and 11 (22.45%) required repeat section. The result of the present study (77.55%) is comparable to that of Ghose (1973)—77.28 per cent. But Peel and Chamberlain (1968) obtained a much higher result (89.9%) (Table VI).

5. *Mode of Vaginal Delivery:* Out of

38 vaginal deliveries in the present study 14 were spontaneous (36.85%), 22 low forceps (57.89%), 1 assisted breech delivery (2.63%) and 1 vacuum extraction (2.63%).

6. *Indication of Previous Caesarean Section: Mode of present delivery:* Out of 110 cases, the indication for previous Caesarean section was recurrent in 49, non-recurrent in 55 and unknown in 6. Successful vaginal delivery occurred in only 10.2 per cent (5 cases) in recurrent group as opposed to 56.36 per cent (31 cases) in non-recurrent group (Table VII).

7. *Vaginal Delivery in Non-recurrent Indications:* Vaginal delivery took place in 31 cases out of 55 cases with non-recurrent indication—an incidence of 56.36%. The result is comparable to that of Subhadra Devi (1964) and Jacob and Bhargava (1971). But Parikh (1964) and Jhaveri (1965) reported a much higher incidence of vaginal delivery (Table VIII).

8. *Vaginal Delivery in Recurrent Indications:* In the present study 10.2% of patients with recurrent indications of previous caesarean section delivered vaginally. Herd (1949) reported a high incidence of vaginal delivery (43%) in such cases. This raises doubt regarding

TABLE VI  
Vaginal Delivery in Selected Cases

Authors & year	Total No. of patients selected	No. of patients delivered vaginally	Percentage
Menon 1962	504	323	64.1
Peel & Chamberlain 1968	774	696	89.9
Ghose 1973	427	330	77.28
Present series 1974-75	49	38	77.55

TABLE VII  
Indications of Previous Caesarean Section; Mode of Present Delivery

Indication of previous section	Total No. of cases	Mode of present delivery			
		Vaginal	Percent	Repeat section	Percent
A. Recurrent (Disproportion)	49	5	10.2	44	89.8
B. Non-recurrent	55	31	56.36	24	43.64
(a) Foetal distress	29	21	72.41	8	27.59
(b) Postmaturity	6	2	33.33	4	66.67
(c) Cervical dystocia	8	3	50.0	3	50.0
(d) Placenta previa	10	3	30.0	7	70.0
(e) Bad obstetric history	1	-	-	1	100.0
(f) Cord prolapse	1	-	-	1	100.0
(g) Transverse lie	1	1	100.0	-	-
(h) Brow presentation	1	1	100.0	-	-
C. Unknown	6	2	33.33	4	66.67
Total	110	38	34.55	72	65.45

TABLE VIII  
Vaginal Delivery in Non-recurrent Indications

Authors & Year	Total No. of cases	Incidence of delivery
1. Subhadra Devi 1964	69	59%
2. Parikh 1964	222	77%
3. Jhaveri 1969	45	73%
4. Jacob & Bhargava 1971	75	57.3%
5. Present series 1974-75	55	58.36%

TABLE IX  
Vaginal Delivery in Recurrent Indications

Authors & Year	Total No. of cases	Cases delivered
1. Parikh 1964	318	104 (32.7%)
2. Jacob and Bhargava 1971	49	10 (20.4%)
3. Jhaveri 1969	19	5 (26%)
4. Present series 1974-75	49	5 (10.2%)

the correctness of the diagnosis of disproportion. Clinical examination by different observers is likely to vary. Diagnosis by X-ray pelvimetry or sonar would be most helpful in these cases. Incidence of vaginal delivery in recurrent indications reported by different authors is shown in Table IX.

9. *Rupture of Uterus*: The general consensus of opinion is that rupture of the lower segment scar occurs mostly in labour and that of classical scar both during pregnancy and labour. There

were 2 cases of rupture of the uterus in the present study. Both the ruptures were of lower segment scar and occurred during labour (incidence 1.82%). Each of them had 2 previous caesarean sections. Of the 2 cases, 1 case admitted as emergency in labour was suspected to have rupture of uterus. Following laparotomy lower uterine segment rupture was detected and caesarean hysterectomy was performed. In the other case admitted in labour, a dehiscence of  $1\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " was detected in previous lower segment scar during emergency caesarean section. The

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defect was repaired following delivery and ligation of fallopian tubes was done. The rupture of uterus following previous caesarean section by different authors are shown in Table X.

TABLE X  
Incidence of Rupture of Uterus

Authors & Year	Classical	L.S.C.S.
1. Dewhurst 1957	2.2	0.5
2. Subhadra Devi 1964	Nil	0.5
3. Jacob and Bhargava 1971	16.6	0.8
4. Menon 1962	8.4	2.3
5. Present series 1974-75	Nil	1.82

There was no classical scar rupture in this series as both the patients with such history had elective repeat section.

10. *Duration of Labour in Vaginal Delivery:* The average duration of labour in the vaginal delivery group in the present study was 11 hours 44 minutes. Wilson (1951) reported a similar result of 12 hours and 24 minutes. In Menon's series (1962) the duration in the vaginal delivery group varied from 10 to 18 hours.

11. *Average Birth Weight of the New-born:* The average birth weight of the babies delivered vaginally was 5.74 lb. and those delivered by repeat section was 5.93 lbs. The relative smaller size of the babies may be a cause of successful vaginal delivery in some cases.

12. *Number of Type of Previous Section:* The chance of successful vaginal delivery decreases with increase in the number of previous caesarean sections.

In the present study, out of 16 patients with 2 previous caesarean section, only 2 (12.5%) delivered vaginally as opposed to 38.3 per cent (36 out of 94 cases) in patients with 1 previous caesarean section. Two cases with previous 2 caesarean sections admitted in labour showed satisfactory progress on admission with successful vaginal delivery.

13. *Vaginal delivery Before/After the Previous Section and Mode of Present Delivery:* Of the 25 cases with history of previous vaginal delivery, 16 had vaginal delivery prior to last section and 9 had vaginal delivery after the last section. Of these 25 cases, 12 (48%) delivered vaginally and 13 (52%) needed repeat section in the present pregnancy. It shows that patients with such history are favourable for vaginal delivery in subsequent pregnancies.

14. *Incidence of Complications:* In the present study scar tenderness occurred in 1 (0.9%), rupture of caesarean scar in 2 (1.82%), post-partum haemorrhage in 2 (1.82%) and retained placenta in none.

15. *Maternal and Perinatal Mortality and Morbidity:* Maternal mortality was nil in this study. Morbidity was detected in 20 patients out of which 17 were in repeat section group and 3 in vaginal delivery. There were 10 premature births (7 at repeat sections and 3 at vaginal delivery), 1 macerated stillbirth and 1 asphyxiated baby which could not be revived. Out of the 7 premature babies delivered by caesarean section, 3 died within 7 days of delivery. The uncorrected perinatal mortality is 4.5%. The corrected perinatal mortality (correction for prematurity and I.U.D.) is 0.9 per cent.

16. *Histological Study of Uterine Scar Removed at Repeat Section:* It is very

difficult to assess the condition of the caesarean scar clinically. Clinical evaluation of scar rupture from scar tenderness is also not always helpful as we found in our study. Hystero-graphic study as suggested by Poidevin (1965) though very helpful, could not be carried out in this study.

However, uterine scars removed in 40 cases at repeat section were subjected to histological study. It showed both muscular and fibrous tissue elements but mostly fibrous. No significant correlations could be found with previous post operative convalescence.

#### *Comments*

In the management of post-caesarean pregnancy and labour expectant attitude is justifiable in selected cases. Individualisation of the patients is essential and each case must be judged on its own merit. Consideration of number and type of previous caesarean section, indications, post operative convalescence, size and presentation of the foetus, and type of pelvis is essential before selecting the method of delivery. Yet it is difficult to predict the behaviour of the caesarean scar during labour. Patients with previous classical scar, with more than 1 caesarean scar, or with disproportion are best delivered by elective repeat caesarean section. A history of full term vaginal delivery in patients with previous lower segment caesarean section is another favourable point for considering vaginal delivery, but this does not necessarily mean the safety in present delivery.

Clinical evaluation of the caesarean scar and the size and capacity of the pelvis may not be always accurate. X-ray pelvimetry or sonar study of foetal biparietal diameter and hystero-graphic study

of uterine scar following caesarean section are useful methods for evaluation of the cases.

#### *Summary*

1. Analysis of 110 cases of post caesarean pregnancy and labour studied prospectively is presented. The incidence of post caesarean delivery during the period of this study is 2.4 per cent.

2. Successful vaginal delivery occurred in 38 (34.55%).

3. Out of 40 cases selected for vaginal delivery, 38 (77.55%) delivered vaginally and 11 (22.45%) required repeat section.

4. Out of 55 cases with non-recurring indications, vaginal delivery was achieved in 31 (56.36%) cases.

5. The incidence of rupture of the lower segment caesarean section scar in this study is 1.82 per cent.

6. The maternal mortality in the present study is nil and perinatal mortality is 0.9% (corrected).

7. The histological study of previous caesarean scar showed preponderance of fibrous tissue elements.

#### *Conclusion*

Vaginal delivery can be allowed with reasonable safety in post caesarean pregnancy in suitable cases after proper clinical evaluation under close supervision.

#### *Acknowledgement*

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