

# 'Once a Caesarean section'

THREE HUNDRED AND SEVENTY-SIX deliveries in women who have had one previous Caesarean section are studied. The aim is to find out the obstetric performance of these women. Elective repeat sections were carried out in 72 (19.1%) of patients. Of the remainder, 239 (78.6%) delivered vaginally. Recurrent indications for repeat Caesarean sections are not common apart from cephalo-pelvic disproportion. The lower segment scar was found to be intact in 94.8% of the patients examined. The morbidity rate is increased in patients who had repeat Caesarean sections. Patients who have not had any vaginal delivery before or after the primary Caesarean sections performed badly in the subsequent labours and deliveries.

It is concluded that the majority of these patients be given a trial of labour. More than 60% of these should be able to deliver vaginally.

These women are not always delivered by Caesarean section thereafter. On the contrary, this study sets out to investigate what exactly happens to these women in labour and delivery. Many studies on this problem have had results diluted by including patients who have had two or more previous sections.

Apart from patients who have had recurrent indications for Caesarean sections, there is little doubt that most women, who have had one previous section, should be given a trial of labour subsequently. Browne (1951) noted that it was "not an unduly hazardous venture" to deliver vaginally after a Caesarean section. In fact, Harris (1953) studied the work of Cosgrove and Avites and concluded that it was statistically more hazardous to have a repeat Caesarean section than a vaginal delivery following a Caesarean section.

The problem is one of balancing the risks of the rupture of a uterine scar of unknown quality with those of a repeat Caesarean section. Pauerstein (1966) analysed the results from six authors and showed that the maternal mortality from scar rupture

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is 0.02% while that from a repeat Caesarean section is 0.14%.

It would seem fair to allow all women with a previous Caesarean section to have a trial of labour unless: (1) there is an indication to deliver the present pregnancy by Caesarean section, e.g. a placenta praevia; or (2) the previous indication for Caesarean section still exists in this pregnancy e.g. definite cephalo-pelvic disproportion. This, in fact, is the policy of the Nuffield Department of Obstetrics and Gynaecology when the patients in this study were delivered.

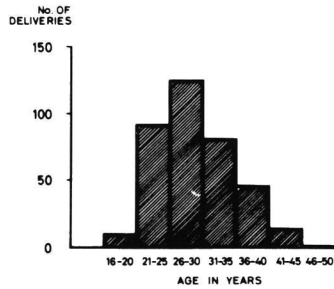
## MATERIALS

The study covers the period 1960 to 1967 inclusive. Three hundred and twenty-one patients, with one previous Caesarean section each delivered in this period. They had a total of 376 deliveries. The age distribution of these patients at the time of the study is shown in Figure 1. The commonest age group is 26 – 30 years.

## Mode of deliveries

The method of delivery of the babies is shown in Figure 2. Of the 376 deliveries, 63.6% were delivered vaginally. Seventy-two patients (19.1%) were not allowed to labour. Hence, of those allowed a trial of labour, 239 (78.6%) were delivered vaginally.

# CAESAREAN SECTION



AGE DISTRIBUTION OF PATIENTS IN STUDY

Fig. 1

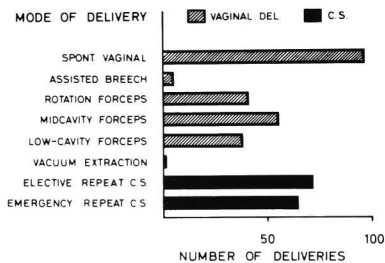


CHART SHOWING THE MODE OF DELIVERY OF THE 376 BABIES. 63.6% WERE DELIVERED VAGINALLY.

Fig. 2

PARITY	NUMBER	
	PRIMARY C.S.	DELIVERY IN STUDY
0	305	—
1	36	228
2	13	73
3	13	36
4	7	22
5	1	11
6	1	5
7	—	1
TOTAL	376	376

Parity of patients at the primary caesarean section and at the delivery in this study.

TABLE I

## Parity

The parity of the patients at the time of delivery is shown in Table 1. It is seen that most of the patients (228) have had only one baby, i.e. the one delivered by the primary Caesarean section.

## Indications for Caesarean Section

The indications for the primary Caesarean sections are set out in Table II. For the primary operation, it is noted that prolonged labour (including incoordinate uterine action) forms the largest single group of patients. Fetal distress and placenta praevia are the next commonest groups. It is noted that apart from those sectioned for cephalo-pelvic disproportion, only a small percentage of patients was operated on for a recurrent indication. A scar in the uterus plus an unfavourable feature, such as an unripe cervix, high presenting part or a presenting part that is off centre, is the commonest new indication for a repeat Caesarean section.

INDICATIONS	PRIMARY C.S.	REPEAT C.S.	
		RECCURENT INDICATION	NEW INDICATION
PROLONGED LABOUR	97	7	3
FETAL DISTRESS	54	4	7
PLACENTA PRAEVIA	53	1	5
CEPHALO-PELVIC DISPROPORTION	39	17	12
TOXAEMIA OF PREGNANCY	30	2	—
CORD COMPLICATIONS	14	—	1
ABRUPTIO PLACENTAE	11	—	1
FAILED INDUCTION	10	—	13
MISCELLANEOUS	68	7	22
PREVIOUS C.S. + UNFAVOURABLE FACTOR	—	—	49

TABLE II INDICATIONS FOR CAESAREAN SECTIONS

TYPE OF SCAR		NUMBER
LOWER SEGMENT	TRANSVERSE	368
	VERTICAL	1
UPPER SEGMENT		1
INVERTED T		1
HYSTEROTOMY		4
UNKNOWN		1

State of Scar	Number of patients
Sound	148 (94.8%)
Weak	5 ( 3.2%)
Window defect	1 ( 0.6%)
Incomplete rupture	1 ( 0.6%)
Complete rupture	1 ( 0.6%)
Total	156

TABLE IV: STATE OF UTERINE SCAR AT DELIVERY

TYPE OF SCAR IN THE UTERUS

TABLE III

The Uterine Scar

The type of scar in the uterus is shown in Table III. The commonest type of scar is the lower segment transverse scar.

The uterine scar was palpated and recorded in 156 patients at the time of delivery. Of these, 148 (94.8%) were found to be sound. (Table IV). In the other patients, it is presumed that the scar was either not palpated or if palpated, the entry into the case records was overlooked. There were three cases of uterine rupture.

Dilation of the os and subsequent delivery

In 253 patients, the state of the cervical os at the primary Caesarean section was known. In relating this to the performance of the subsequent labour and delivery, it is only fair to exclude those who did not labour but had repeat elective Caesarean sections. Table V shows the results. Though shown, the number of patients who had repeat elective Caesarean sections are excluded in calculating the duration of labour and the birth-weights of the babies.

The perinatal loss in this small series is not contributory.

There is evidence to show that those who had their primary Caesarean section when the os is not dilated do well at the subsequent labour. This may be due to

the fact that many of these are, in fact, patients who have not laboured at all because of elective Caesarean sections before labour. The average duration of labour for this group is 461.5 minutes. There does not seem to be evidence to support the belief that the greater the dilatation of the os at the primary Caesarean section, the better the performance at subsequent deliveries.

Maternal morbidity and mortality

This is shown in Figure 3. There is no maternal mortality. This result has to be studied in relation to the fact that 239 vaginal deliveries and 137 Caesarean sections were studied. There is a definite increase in blood transfusion, puerperal anaemia, puerperal pyrexia and urinary tract infection in patients who were delivered by repeat Caesarean sections. The patients with rupture of uterus sustained the injury during the trial of labour and are therefore not complications of the sections.

Previous vaginal delivery and the present performance

In this study the patients are divided into the following four groups:

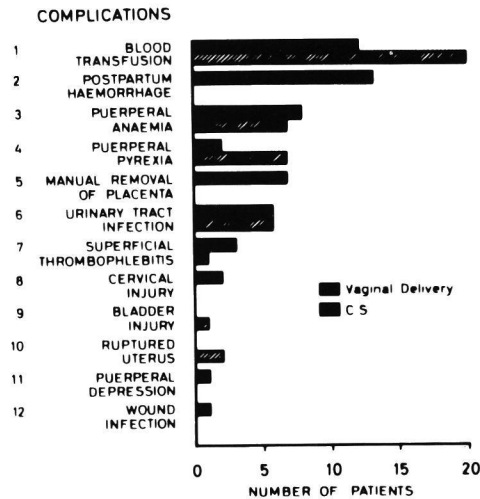
Group I: Patients with vaginal deliveries before and after the primary Caesarean section.

Group II: Patients with vaginal deliveries before the primary Caesarean section.

DILATATION OF OS AT 1st C.S.	MODE OF DELIVERY			AVERAGE DURATION OF LABOUR (mins)	AVERAGE BIRTH-WEIGHT (gms)	PERINATAL LOSS			
	VAGINAL EMER.	C.S. ELECT.				VD	CS	SB VD	NND CS
0 cm	64	13	22	461.5	3334	2	1	—	—
1—3 cms	26	12	10	770.6	3497	1	1	—	1
4—6 cms	31	12	12	692.3	3540	1	—	—	—
7—9 cms	16	9	5	700.4	3685	1	—	—	—
10	6	2	3	322.5	3538	—	—	—	—

TABLE V RELATION BETWEEN THE CERVICAL DILATATION AT THE PRIMARY C.S. AND SUBSEQUENT LABOUR

## CAESAREAN SECTION



**MORBIDITY FOLLOWING VAGINAL DELIVERIES AND CESAREAN SECTIONS**

Fig. 3

Group III: Patients with vaginal deliveries after the primary Caesarean section.

Group IV: Patients who had not had any vaginal delivery at all.

The results are shown in Table VI. For babies of about the same birth-weights, i.e. 3.5 kgm. (except Group I, 3.0 kgm.) it is seen that the patients in Group IV laboured for 854.1 minutes, which is about twice as long as those of the other groups who laboured 420.0 minutes (Group I); 501.8 minutes (Group II) and 400.7 minutes (Group III).

Group I patients had 72.2% delivering spontaneously by the vaginal route and only 11.1% delivering by repeat section. This seems the best obstetric

performance of the lot. On the other hand, Group IV patients showed a high incidence of repeat sections and forceps deliveries, while only 10.3% delivered spontaneously by the vaginal route.

### DISCUSSION

Many studies in labour and deliveries following Caesarean sections do not make the distinction between those who have had only one previous section and those who have had more than one section. This may be an important factor as the patients who have had only one previous section are expected to perform better.

Of the 376 deliveries, 63.6% took place vaginally. This compares favourably with other reports which range from 16.0% reported by Lane and Reid (1954), to 73.8% reported by Riva and Teich (1961). In this study, 78.6% of those allowed to labour produced their babies vaginally.

The percentage of these women delivering vaginally will depend to a great extent on the line of management adopted by the obstetrician. For most patients who have a scar on the uterus and who are allowed a trial of labour, 60% vaginal delivery should be within the reach of most centres. This is so because, as can be seen in Table II, the majority of indications for the primary Caesarean section are non-recurrent, like prolonged labour, fetal distress and placenta praevia. It is also noted that the common indication for a repeat Caesarean section is a uterine scar plus an unfavourable factor. The other common indication is failed induction of labour.

Under present day obstetric practice, the quality of all types of uterine rupture is 1.8%. This is a little high when compared with other series. Thus, Salzmann (1964) reported 0.6%; Browne (1951) and Chong (1968) reported 1.08% while Chesterman

	NUMBER OF PATIENTS	AVERAGE DURATION OF LABOUR IN MINUTES	AVERAGE BIRTH-WEIGHT (gms)		MODE OF DELIVERY					
			PREVIOUS BABIES	PRESENT BABIES	SPONTANEOUS VAGINAL DELIVERY	FORCEPS DELIVERY	FORCEPS ROTATION & DELIVERY (* INCLUDES 1 VENTOUSE DELIVERY)	ASSISTED BREECH DELIVERY	ELECTIVE C.S.	EMERGENCY C.S.
VD BEFORE & AFTER C.S.	18	420.0	3487	3042	13 (72.2%)	2 (16.7%)	1	-	1 (11.1%)	1
VD BEFORE C.S.	44	501.8	3590	3501	19 (43.2%)	4 (15.9%)	3	-	9 (40.9%)	9
VD AFTER C.S.	76	400.7	3522	3526	38 (50.0%)	18 (30.2%)	5*	3	8 (15.4%)	4
NO VD BEFORE OR AFTER C.S.	234	854.1	3350	3574	24 (10.3%)	69 (43.6%)	33	2	54 (44.9%)	51

**RELATIONSHIP BETWEEN PREVIOUS VAGINAL DELIVERIES AND LABOUR PERFORMANCE**  
**TABLE VI**

(1953) recorded an incidence of 1.8% rupture. When one takes into consideration that the three uterine scars ruptured as a result of 321 patients delivering 376 babies, the actual incidence of rupture is in fact less. The maternal mortality from scar rupture is reported as 0.1% to 4.0% (Muller et al 1961 ; Pauerstein 1966 ). Hence the risk of a patient losing her life as a result of the rupture of a uterine scar is not unduly great. Pauerstein (1966) concluded that the presence of a transverse lower segment uterine scar seemed to add little maternal and fetal risk to that inherent in labour and vaginal delivery.

There is reason, from this study, to question the belief that the chance of vaginal delivery is better, the greater the dilatation of the os at the time of the primary section. Apart from those who had no dilatation of the os at all at the primary section, there is no correlation between these factors.

The incidence of blood transfusion is greatly increased in patients who required repeat section. The risks of blood transfusion has been well taken by Graham-Stewart (1960) Other complications, like puerperal pyrexia, puerperal anaemia and urinary tract infection, are also increased in this group of patients. These, coupled with the inherent risks of an anaesthetic and a major operation, make it desirable that as many patients as possible should be allowed trials of labour with the hope of vaginal delivery. Many of the complications listed in the group who delivered vaginally are, in fact, complications encountered in any spontaneous vaginal delivery. Workers like Allhbadia (1963) and Klinges and Gambrell (1967) also reported low incidences of morbidity in patients with uterine scars who deliver vaginally in subsequent pregnancies.

Feeny (1954) cautioned against any patient with a uterine scar who has not delivered a baby vaginally before being allowed a trial of labour. The results of this study agree that these patients do not perform well and great vigilance is required during the trial of labour. The results in Table VI put a heavy premium on these patients, both as regards to the average duration of labour as well as to the success of vaginal delivery.

In conclusion, a plea is made for careful assessment of patients with a scar in the uterus with a view to allowing a trial of labour. With due vigilance, the

risks should only be minimally increased, both for the baby and the mother. The outcome of 60% to 75% of patients delivering vaginally is gratifying both to the obstetrician and to the mother.

### Summary

1. Three hundred and seventy-six deliveries following one previous Caesarean section each are studied. Of these 72 (19.1%) had selective repeat sections. Of the remainder, 239 (78.6%) delivered vaginally.
2. Recurrent indications for repeat Caesarean sections are not common apart from cephalopelvic disproportion.
3. The lower segment scar was found to be intact in 94.8% of patients.
4. Blood transfusion, puerperal anaemia, puerperal pyrexia and urinary tract infection are increased in the patients who had repeat Caesarean sections.
5. Those patients who have not had any vaginal deliveries, before or after the primary Caesarean section, performed badly in the subsequent labours and deliveries.

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