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CAESAREAN SECTION IN MODERN
OBSTETRIC PRACTICE

by

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While the subject of my talk this evening is *modern* Caesarean Section, a few historical references would not, I feel, be out of place by way of introduction.

The origin of this operation is lost in the mists of antiquity, older writers such as Hippocrates, Galen and Soranus make no reference to it. But those of you who remember your Virgil will recall that Dionysus was delivered out of the belly of Semele, and excerpts from the Talmud make it clear that it must have been known to the ancient Jews long before the Christian Era. A record by a certain Dr. Felkin, travelling amongst uncivilised tribes in Uganda in Central Africa, gave a graphic description of an operation performed on a young primigravida aged 20 who was first reduced to a state of semi-intoxica-

tion with banana wine. The patient was fixed to the bed with bands of cloth placed over the thighs and thorax, while the ankles were held by an assistant. The operator evidently possessed distinctly more knowledge of asepsis than his civilised comperes of that period since, before commencing the operation, he washed the patient's abdomen and his own hands with banana wine instead of deferring the cleansing of the hands until after the operation, as was customary amongst civilised practitioners of that time. The surgeon then made a rapid mid-line incision from the pubis to the umbilicus through the whole thickness of the abdominal wall, and through the uterus. Bleeding was arrested by a red hot iron. The child was removed, the cord clamped, and the child handed to an assistant. The uterus was massaged and the cervix dilated with the fingers. The uterus was not sutured. A porous grass mat was placed over the wound, secured

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there, and the various bands which secured her arms being removed, the patient was turned over so that the fluid in the abdominal cavity would run out on to the floor. She was then replaced in the former position, and the mat being removed the edges of the abdominal wound were brought into close apposition with seven thin iron spikes, well polished and resembling acu-pressure needles, being used for the purpose and fastened by a string made from bark cloth. The wound was dressed with a paste made from roots, covered with a warm banana bag and a firm cloth placed round the abdomen. The woman stood the operation in silence until the pins were placed in position."

Historically, the post-mortem caesarean section ordained by the Roman emperors under the "Lex Caesarica", whereby it was law to remove the child by operation if the pregnant woman died in the last few weeks of pregnancy, is worthy of mention, because almost certainly it was from this origin that the operation was given its official name of caesarean section. Apart from sporadic cases recorded from time to time, and accounts of self-inflicted operations, it was not until 1582 that caesarean section on the living woman found a serious medical advocate in Francis

Rousset, a Frenchman. During the next 300 years the operation waxed and waned in popularity, but it was mostly condemned because of the appalling maternal mortality.

It is odd that the Porro operation which removed the uterus by subtotal hysterectomy should have preceded the first attempts to suture the wound, which were first made by Sanger as late as the end of the last century.

A hundred years ago, in Great Britain, the maternal mortality from caesarean section was 60 to 80%. Today we embark upon the operation with scarcely a thought concerning the maternal risk, and with our eyes focussed more upon the question of foetal survival. In this very safety there is, I think, a real danger that the operation may be undertaken for indications that might not always bear the most careful scrutiny.

Even today the maternal mortality in caesarean section in Great Britain is ten times that of the overall maternal mortality (3.5 per 1000 births).

If we look at the facts over the last 50 years, we can see how maternal mortality figures have progressed. My first table shows a series of cases that were presented by Eardley Holland, which covered the period

TABLE 1
Comparative Figures of Maternal and Foetal Mortalities

	Holland 1911-21	Marshall 1936	Marshall 1949	Ministry Report 1955-57	Present Series
Total sections	3372	1263	7762	59000 Estimated	703
Maternal mortality	4.1%	1.42%	0.99%	0.4%	0.3%
Foetal mortality	8.1%	—	7.4%	—	5.9%
Foetal mortality excluding diabetics	—	—	7.2%	—	4.4%

1911-1921, in the first column; in the second column the figures of Mackintosh Marshall in 1935; in the third column a further series that Marshall presented to the 12th British Congress in London in 1949. In the fourth column is the estimated maternal mortality which is shown in the Ministry of Health Report 1955. In the last column is the present series which I shall analyse in some detail, as they are drawn from my own hospital.

You will see in the first column that of 3,372 operations undertaken for contracted pelvis, the maternal mortality was 4.1%, and I may add that in cases carried out after any attempts at vaginal delivery it was 28.3%.

In the second column the maternal mortality had fallen to 1.42%, and by 1949 to 0.99%.

The first report of the Ministry of Health on maternal mortality estimated that the maternal mortality in caesarean section in Great Britain was 4 per 1000. A later report in 1960

shows that this maternal mortality had declined slightly, and in the year 1957 was 3.5. You will see from Table II that the incidence of caesarean section in Great Britain at the present time is approximately 2.5 per 1,000 live births.

In my own smaller series the maternal mortality was 0.3%, which corresponds with the general figure in Great Britain at the present time.

The immediate cause of death has been published by the Ministry, and Table 3 is taken from the report. This shows that haemorrhage, embolism, and shock are by far the commonest causes of death. Sepsis and ileus, which were such prominent causes of mortality 30 or 40 years ago, have fallen to a comparatively low figure. The danger involved in anaesthesia for caesarean sections is emphasized because it accounts for 6.9% of the maternal deaths in that series.

We have found these Ministry of Health reports in Great Britain of tremendous value, and you might

TABLE 2
Estimated Number of Caesarean Sections and Death Rate
(From Report on Confidential Enquiries into Maternal Deaths in
England and Wales, 1955-57)

	1955	1956	1957
Total births in N.H.S. Hospitals	411,700	433,194	448,176
Total births in non-N.H.S. Hospitals	28,146	28,028	27,620
All hospital births	439,846	461,222	475,796
Percentage of caesarean sections in N.H.S. Hospitals (in-patients sample)	3.8	3.9	3.8
Estimated number of caesarean sections in all hospital deliveries	16,539	18,133	17,950
Total births, England and Wales	683,640	716,740	739,996
Percentage of caesarean sections for all births	2.4	2.5	2.4
Deaths from caesarean sections (true maternal and associated deaths)	58	66	60
Estimated number of deaths per 1,000 caesarean sections	3.5	3.6	3.3

TABLE 3

Caesarean Section: Immediate Cause of Death

(From Report on Confidential Enquiries into Maternal Deaths in England and Wales, 1952-1954)

Immediate cause of death	Number of cases	Percentage
Haemorrhage	35	20.0
Pulmonary embolism	32	18.3
Shock or collapse	30	17.1
Sepsis	14	8.0
Ileus	12	6.9
Asphyxia from inhalation of vomit during anaesthesia	12	6.9
Nephritis	7	4.0
Cardiac failure	6	3.4
Pneumonia	5	2.9
Eclampsia	5	2.9
Other causes	17	9.7
Total	175	100.0

like to hear just a little bit more about them in this connection. Each region has appointed a regional assessor. All maternal deaths are reported to him in great detail, and the information so collected is regarded as completely confidential. There is no publication of either the patient's name or the doctors involved in the case. All the regional assessors then meet together and pool the informa-

tion they have been able to gain from a scrutiny of the maternal deaths that have occurred in each region, and ultimately a statistical report is published. An attempt is made wherever possible to assess avoidable factors, and in the case of caesarean section avoidable factors were thought to be present in approximately one-third of the maternal deaths. The important thing that emerges

TABLE 4

Caesarean Section: Deaths with Avoidable Factors according to Immediate Cause of Death

(From Report on Confidential Enquiries into Maternal Deaths in England and Wales, 1952-1954)

Immediate cause of death	All deaths	Deaths with avoidable factors	
		Number	Per cent
Haemorrhage	35	13	37.1
Shock or collapse	30	9	30.0
Pulmonary embolism	32	4	12.5
Sepsis	14	5	35.7
Ileus	12	5	41.7
Inhalation of vomit	12	5	41.7
Others	40	11	27.5
Total	175	52	29.7

from the study of these reports is the danger of the operation in the presence of severe pre-operative anaemia, and the need for adequate replacement of blood loss during and following operation. If the operation is to be undertaken, it must be undertaken in surroundings where there is adequate staff and equipment. If these criteria cannot be fulfilled, then in many instances it would be far safer for the baby to be delivered by the vaginal route. This would mean a better maternal mortality figure, but possibly a worse peri-natal loss.

Whenever caesarean section is undertaken, one should always ask oneself certain questions:—

1. Is the indication present without doubt?
2. Are all the facilities present which could make the operation safe, whatever complications might arise during the course of the operation?
3. If the operation is being under-

taken, primarily in the interests of the baby, is the risk to the mother being increased so much as to make the procedure unwise?

I should like now to turn to the indications for caesarean section as we see them in Great Britain.

The figures drawn from my own hospital are fairly typical of the indications in most hospitals in Great Britain, with the exception that my hospital has a very large diabetic clinic and we deal in consequence with a very large number of diabetic patients—approximately 50% of whom are delivered by caesarean section. This affects not only the incidence of the operation in the hospital, but also the peri-natal mortality, which is particularly high in diabetic pregnancy. I think these figures which appear in Table 5 indicate certain trends in the modern operation that I think are important, and require further emphasis.

TABLE 5
Indications for Operation and Perinatal Mortality

	Total	Per cent	Perinatal mortality	
Disproportion	213	30.3	4	1.8%
Diabetes	162	23.0	18	11.1%
Inertia	84	11.9	0	0
P.E.T.	50	7.1	10	20%
Foetal distress .. .	46	6.5	3	6.5%
Placenta praevia .. .	34	4.8	2	6%
Repeat (excluding repeats for diabetes and disproportion) ..	27	3.8		
Bad history	22	3.1		
Fibroids	14	2.0	1	
Prolapsed cord	11	1.5	1	
Previous colporrhaphy	10	1.4		
Age alone	9	1.2		
Accidental haemorrhage	6	0.8		
Miscellaneous	15	2.6	3	
	703	100	42	

With regard to disproportion, this is still the commonest indication, but here a change has taken place during the last few years. In the series collected by Holland in 1921, no less than 80% of the total caesarean sections were undertaken for contracted pelvis. The vast majority of these were done either electively or very early in labour which had started before the operation was carried out. By the time Marshall collected his figures in 1949 instances of disproportion had fallen to 53.2%, and that is a figure which in his paper includes cases of prolonged labour associated with inco-ordinate uterine action and the occipito-posterior position of the foetal head. In my own series, if you include the 84 cases that have been labelled inco-ordinate uterine action we have a group of cases that we can label "disproportion", but even with this inclusion the percentage of the total operations has fallen to 42.2%. We can conclude from this that brim disproportion requiring elective caesarean section has become compara-

TABLE 6
Caesarean Section for Disproportion including Inco-ordinate Uterine Action

	Total C.S.	C.S. for disproportion	Per cent
Holland 1921	4197	3372	80.0
Marshall 1949	7762	4133	53.2
Present series	703	297	42.2

than 80% of the total caesarean sections were undertaken for contracted pelvis. The vast majority of these were done either electively or very early in labour which had started before the operation was carried out. By the time Marshall collected his figures in 1949 instances of disproportion had fallen to 53.2%, and that is a figure which in his paper includes cases of prolonged labour associated with inco-ordinate uterine action and the occipito-posterior position of the foetal head. In my own series, if you include the 84 cases that have been labelled inco-ordinate uterine action we have a group of cases that we can label "disproportion", but even with

tively rare. In the present series only in 10% of the total cases of so-called disproportion was the operation an elective one before the onset of labour, and in over half of these there was an additional factor to minor disproportion, namely the fact that the baby was lying as a breech with extended legs.

Secondly, the disproportion that is now encountered is of a minor character, usually of the cavity or outlet of the pelvis, and it is often associated with a posterior position of the foetal head and inco-ordinate uterine action.

Caesarean section is therefore often undertaken late in labour. In the present series 62.8% of the total

TABLE 7
Caesarean Section for so-called Disproportion including Inco-ordinate Uterine Action
297 cases out of 703 = 42.2 per cent

	Number	Per cent	
Failed trial labour	103	34.6	} 62.8
Inco-ordinate action	84	28.2	
Repeat	63	21.2	
Failed forceps	18	6.0	} 10.0
Extended breech	15	5.1	
Elective	14	4.9	
Total	297	100.0	

caesarean sections for disproportion fall into this category. Deliberate repeat section is only 21.2% of the total. You will see in Table 7 another interesting facet of the modern caesarean section. It was undertaken after the application of forceps had been attempted on 18 occasions. This is 6% of the total cases of disproportion, whereas in Marshall's figure in 1949 only 1% of the disproportion cases fell into this category.

It is becoming increasingly common in Great Britain in these cases of minor disproportion to arrange for the patient to be in an operating theatre when the attempt to deliver by forceps is undertaken. In these cases, the foetal head is usually in the mid-cavity, and may be in the occipito-posterior or transverse position. The application of forceps by way of trial should only be undertaken by the experienced and expert obstetrician. His experience will tell him whether delivery can be safely effected or not, but the possibility of carrying out caesarean section even at this last minute stage of the confinement may well be a life-saving procedure from the point of view of the baby, and may save the mother a very great deal of soft tissue trauma. There is one point I would like to make in connection with caesarean section undertaken late in the course of prolonged labour. In this series in approximately a quarter of the cases that were delivered by caesarean section after prolonged labour the pregnancy had advanced beyond the 42nd week.

The incidence of caesarean section for prolonged labour in the absence of foetal distress is three times as great in cases where the pregnancy

has become definitely post-mature, compared with the mature group.

The justification for caesarean section in these cases of prolonged labour rests on the results. There can be no doubt at all that the perinatal mortality has been greatly improved without any added risk to the mother. The types of case that are now being safely delivered of live baby by caesarean section were, twenty years ago, being delivered by means of difficult forceps extraction of dead or mutilated babies, and with a correspondingly high maternal morbidity.

The availability of antibiotics and blood transfusion has made this dramatic transformation in obstetric practice possible.

I should like to turn now to some of the other indications for caesarean section and to comment briefly on the trends in modern practice.

1. *Pre-eclamptic Toxaemia*

Operation is undoubtedly undertaken for this condition rather more commonly than heretofore. In my own hospital the incidence was 7.1% of the total caesarean sections. It is claimed that not only is the maternal risk from the development of eclampsia reduced, but also that the perinatal mortality is reduced. In my own series, the perinatal mortality was, in fact, 20% which is not a particularly low figure. In any individual case the imminence of the eclamptic state should be the primary indication for caesarean section, rather than induction of labour, if it is thought that eclampsia will develop if the pregnancy is not terminated in the most rapid way possible.

Foetal survival is of secondary importance under these circumstances. The parity of the mother, the maturity of the pregnancy, are two other factors of great importance. If the pregnancy is less mature than 34-35 weeks, a long time may be anticipated between induction and ultimate delivery. Against this must be weighed the fact that caesarean section carries with it a great risk to the foetus, because the premature baby delivered abdominally runs a greater risk of developing the pulmonary syndrome of the newborn. There seems no justification for undertaking caesarean section primarily in the interests of the baby in cases of pre-eclampsia.

2. Foetal Distress

The undertaking of caesarean section for foetal distress in labour is another modern trend which is becoming increasingly obvious from a study of hospital reports. In my series there were 46 cases, or 6.5% of the total. Doumalin and Martin analysed 130 cases where caesarean section was done for this indication, and they state that the incidence of foetal distress requiring caesarean section was approximately 1% of all deliveries. Here I think it is important to sound a note of caution. My own feeling is that in England the operation is being undertaken rather too frequently and too casually for the indication of foetal distress. Nevertheless, in this group we had three cases where the baby was actually stillborn, which is an indication of the foetal risk involved in leaving the operation too late in the course of labour. It is even doubtful, in some cases, what constitutes foetal

distress. The old teaching that the membranes must be kept intact as long as possible has now been superseded by the more ready artificial rupture of the membranes once the cervix has become partially dilated. This enables the accoucheur to take note of the presence of meconium in the liquor. This in itself should not be taken, however, as a definite sign of foetal distress unless there is associated irregularity or slowing of the foetal heart.

3. Placenta Praevia

There is a steadily rising incidence of caesarean section in cases of placenta praevia in my country. It is now generally accepted that between 60% and 70% of all cases of placenta praevia are best delivered by caesarean section. Tremendous improvement in the perinatal mortality more than justifies this trend. Twenty-five years ago the perinatal mortality in this condition was between 60% and 70%; it has now been reduced in most hospitals in my country to a figure nearer to 10%. This has been achieved without any added risk to the mother, but I would emphasise once more the grave danger of carrying out caesarean section on an exsanguinated and shocked patient.

4. There are a variety of other indications which appear in any series of cases of caesarean section; these include such conditions as bad obstetric history, fibroids, prolapsed cord, previous colporrhaphy and sometimes the elderly primigravida with no other indication than age. Accidental antepartum haemorrhage is a condition which does not often call

for caesarean section, but I would emphasise that we find that it can be done with safety to the mother and with a better hope of foetal survival on some cases of mild early accidental haemorrhage where the baby is still alive. In most of the cases of more severe accidental haemorrhage the baby is already dead when the patient is first seen, and the traditional methods of resuscitation and induction of labour are far safer, but in early cases a baby's life may be saved by timely caesarean section.

It is interesting to note the virtual disappearance of cardiac disease and pulmonary tuberculosis as indications for caesarean section.

Maternal Morbidity

The amazing transformation that has taken place in morbidity from caesarean section is exemplified in my own series which shows an incidence of a notifiable pyrexia of 14.6%. Bearing in mind the fact that the majority of these operations were undertaken on patients in established labour, this is remarkable when compared with figures of 25 years ago or more. In fact, in only a quarter of these cases was the

morbidity due to genital tract infection.

It has not been my practice to employ antibiotics routinely in all cases, but only in those where the operation is undertaken in an infected case. In others, I think it is preferable, if pyrexia occurs, to determine the causative organism bacteriologically before antibiotic therapy is started.

Perinatal Mortality

If we look at the comparative figures under this heading, we see that the improvement has been much less dramatic than has the maternal mortality. The perinatal mortality in Holland's series from 1911-1921 was 8.1%, improved to 7.4% by 1949, and in my present series to 5.9%. The main foetal risk in caesarean section is in those cases where the operation has to be carried out before the 36th week. In 482 caesarean sections where the baby was mature, the perinatal mortality was only 1.7%, whereas in the 66 cases in which the operation was done before the 36th week, the perinatal mortality was 22.8%. This emphasises again that one should not do caesarean section primarily in the interests of the baby

TABLE 8
Morbidity after 103 Operations. 14.6 per cent

Genital tract infection		Extra-genital infection		Undiagnosed
<i>B. coli</i>	9	Urinary	25	No organisms isolated
<i>Staph. aureus</i>	7	Wound	11	
Non-haemolytic streptococci	6	Chest	7	
<i>B. proteus</i>	3	Breasts	6	
Enterococci	2	Thrombo-phlebitis	5	
Total	27	Total	54	Total 22

TABLE 9
Perinatal Mortality in Caesarean Sections

Stillbirths		Neo-natal deaths				
Foetal distress	3	Diabetes			16	
Diabetes	2	P.E.T.	} All premature	9		
		P.P.		under	2	
P.E.T.	1	Rhesus		5½ lbs.	2	
Fibroids	2	P. Cord			1	14
		Congenital abnormality			1	
		Long labour			3	
Total	8 = 1.1%	Total		34 = 4.8%		

Perinatal mortality, 42 cases = 5.9 per cent.
Less 18 diabetics, 24 cases = 4.4 per cent.

before the 32nd week of pregnancy, unless there is a very clear maternal indication to the operation, such as placenta praevia, where the bleeding demands immediate action.

verse lie.

3. Cases where there are fibroids in the lower segment which makes the extraction of the infant from the lower segment

TABLE 10
Perinatal Mortality excluding Diabetics, Mature and Premature Babies

	Total	Mortality	Per cent	Marshall
Mature babies	482	9	1.7%	4.18%
Premature babies less than 5½ lbs.	66	15	22.8%	33.12%

Type of Operation

In the present series, out of a total of 703, a lower segment caesarean section was undertaken on 692 occasions. There were only 3 classical caesarean sections, and I might say what I consider are the occasional remaining indications for this operation:

1. Some cases of transverse lie, especially if associated with bi-cornuate or uni-cornuate uterus or other developmental anomaly of the uterus.
2. In some cases of placenta praevia associated with a trans-

virtually impossible.

4. In some cases of repeat caesarean section where there are multiple adhesions which make the isolation of the lower segment extremely difficult.

I do not wish this evening to discuss points of operative technique, but I would just like to say a word about anaesthesia. I would like to emphasise the great risk associated with general anaesthesia given to patients who have been in labour some considerable time and who may have a full stomach. Prolonged labour is frequently associated with

intestinal paresis and dilatation and delayed absorption from the stomach, consequently the stomach may be full, even many hours after the last meal. There are many instances in which caesarean section may have to be undertaken without the availability of an experienced anaesthetist, and I am sure that you must experience this even more frequently than we do in England. I would like to commend to you, therefore, both local and regional anaesthesia. At one time I had a great experience of doing caesarean sections under caudal and extradural anaesthetics. Whilst it is rather more time consuming, it is unquestionably much safer for both mother and child under many circumstances, and particularly if an experienced anaesthetist for general anaesthesia is not available.

I should like now to say a word about the question of repeat caesarean section, and the possibility of vaginal delivery following the operation. The old adage — once a caesarean always a caesarean — is still held in some parts of the world as an obstetric dictum. Those who adhere to this practice maintain that the risk of a rupture of the scar of a previous section is great enough to justify a repetition of the operation even in the absence of any other indication. Most obstetricians today, however, do not believe this, and their reasons are, firstly, that the lower segment

transverse section has almost completely replaced the upper classical operation, secondly, the risk of rupture of the lower segment scar is far less than of the classical one, the incidence is about 0.5%. Thirdly, the immediate danger to the mother and the child if the lower segment does rupture is far less than if the classical scar ruptures. Nevertheless, the fact that once a caesarean section is done the uterus is scarred and may rupture in a subsequent pregnancy or labour must never be forgotten, and for that reason the primary operation never lightly undertaken. In my own hospital we pursue a policy of not repeating caesarean sections unless the indication remains as in the first pregnancy. There is one exception to this, namely, if there is clear-cut evidence of severe uterine or wound infection after the first operation, which may have rendered the scar thin and poor in quality. I should like to make reference to a series of 241 pregnancies in my own hospital which we managed in patients who had previously been delivered by caesarean section. The operation was, in fact, repeated deliberately on 128 of these. Of these 128, 54 were diabetics and of course the indication remained in the second and subsequent pregnancies. In the remaining 74 an elective repeat operation was undertaken because we considered that the primary indication still existed. That left 113,

TABLE 11

Series of 241 Pregnancies with Previous Caesarean Section

Repeat Caesarean Section (elective)	Repeat C.S. after attempted vaginal delivery	Successful vaginal delivery
128	16	97

in which we decided to allow a vaginal delivery if possible in the second or subsequent pregnancy. This was, in fact, successful in 85%, and section had to be undertaken during the course of labour only in 16 cases (15%).

There were 101 primary operations, and in twelve cases more than one subsequent vaginal delivery took place. In 39 the primary operation was done as an elective procedure, the patient not being in labour.

for prolonged labour associated with disordered uterine action.

This group of prolonged labour, frequently categorised as disproportion, is particularly prominent in any series of caesarean sections, as I have already mentioned, and emphasises the comparative rarity of elective caesarean section for disproportion. It emphasises the difficulty that the obstetrician may encounter in any of these cases in deciding whether the prolonged labour is due primarily to

TABLE 12
Indications for 101 Primary Caesarean Sections

Elective		In labour	
Placenta praevia	10		
Disproportion	8	Disproportion	29
Breech	7	Inco-ordinate uterine action	25
P.E.T.	7	Foetal distress	4
Diabetes	3	Failed forceps	4
Oblique lie	2		
Postmaturity	1		
Presentation of cord	1		
Total	39	Total	62

Table 12 gives the indications for operation, and Table 13 summarises the subsequent deliveries in 66 cases in which the operation was done either for suspected disproportion or

minor cavity and outlet disproportion, to abnormal position of the foetal head, or simply to uterine inertia.

There were 8 cases in which the

TABLE 13
Mode of Subsequent Delivery following 66 Primary Operations for Suspected Disproportion

Primary operation	No.	Subsequent delivery	No.
Disproportion elective	8	Vaginal	5
		repeat C.S.	3
Failed trial labour	29	Vaginal	24 + 3
		repeat C.S.	5
Inco-ordinate uterine action	25	Vaginal	19 + 3
		repeat C.S.	6
Failed forceps	4	Vaginal	3 + 1
		repeat C.S.	1

first pregnancy was terminated by an elective caesarean section for disproportion. Most of these cases were done in another hospital, and yet five of these cases delivered themselves vaginally without any difficulty in the subsequent pregnancy.

In 29 cases of a failed trial labour, 24 were delivered vaginally in subsequent labour, and 3 of them had further successful vaginal deliveries in a third labour.

Even more interesting is the fact that in 4 cases of failed forceps requiring caesarean section to terminate the first labour, 3 of them delivered successfully by the vaginal route in the next pregnancy.

which repeat caesarean section was carried out after attempted vaginal delivery had failed, the cervix in the first labour was less than half dilated in only 3, in 10 the cervix was more than half dilated. This seems to suggest that the degree of dilatation of the os in the first labour has very little bearing on the subsequent success or failure of vaginal delivery.

Table 15 gives further details of the second and subsequent deliveries of all cases, and it will be seen that in 59 of them a spontaneous vaginal delivery took place. It is of further interest that in 16 instances where the first labour was terminated because of failed trial for disproportion or in-

TABLE 14
Details of First Labour in 62 Pregnancies

Presentation		Hours in labour		Dilatation of os	
Occipito-anterior	37	0-24	15	2 cm.	17
		24-48	24	Half	26
Occipito-posterior	25	48 +	18	Three quarters	6
		Not known	5	Full	6
				Not known	7
Total	62	Total	62	Total	62

Table 14 shows the preponderance of the occipito-posterior positions of the foetus in the first labours that had to be terminated by caesarean section. It is commonly stated that if the first caesarean section were an elective one, or one carried out early in labour where the cervix was less than two fingers dilated, the prognosis for vaginal delivery in a subsequent labour was poor. My experience does not bear this out. In no less than 43 cases the cervix was less than half dilated at the time when the caesarean section was done. Contrarywise, in the 16 cases in

coordinate action, foetal weight, was actually greater in the subsequent vaginal delivery.

Table 16 summarises the incidence of spontaneous and induced labour in the subsequent pregnancies, and also indicates the mode of delivery in individual groups.

The obvious risk in vaginal delivery following caesarean section is that the scar may rupture. This is an ever present risk, and so any patient who is to have a vaginal delivery with a scar in the uterus must be confined in an institution where a repeat

TABLE 15

Mode of Delivery in 101 Second and 12 Subsequent Labours

Primary operation			Second and subsequent delivery	
Disproportion	..	.. 29	Spontaneous	10 + 3
			Forceps	14
			Repeat C. S.	5
Inertia	..	.. 25	Spontaneous	9 + 3
			Forceps	10
			Repeat C. S.	6
Foetal distress	..	.. 4	Spontaneous	0
			Forceps	3
			Repeat C. S.	1
Failed forceps	..	.. 4	Spontaneous	3 + 1
			Forceps	0
			Repeat C. S.	1
Elective (not in labour)	..	.. 39	Spontaneous	25 + 5
			Forceps	11
			Repeat C. S.	3

TABLE 16

Second Deliveries in 113 Pregnancies

Onset		Duration of 2nd labour		Mode of delivery	
Spontaneous	65 + 12	0-24 hours	75	Spontaneous	48 + 12
Induced	36	24-48 "	24	Forceps	37
		48 + "	2	Repeat C.S.	16
Total	113	Total	101	Total	113

caesarean section in emergency may be undetaken.

If we can be sure that the patient's first puerperium was not complicated by gross infection, and conclude that the scar is good, and if we are satisfied that there is no disproportion and that the indication for the primary operation no longer exists, I believe a vaginal delivery can be safely allowed. The patient must be watched very carefully, and any undue pain or tenderness over the site of the previous scar should indicate immediate laparotomy.

I believe it is wiser to terminate the second stage by means of forceps

unless a rapid spontaneous termination is obvious.

I think there is a place for induction of labour in some cases where the primary disproportion in the first labour was associated with post-maturity and an abnormally large baby rather than any degree of contraction of the pelvis.

I do not think it is apparent that the risks involved in vaginal delivery are no longer to be looked upon as greater than those in repeating caesarean section. These risks in either case can only be minimised by sound obstetric judgment in the necessity for the primary operation.