

# MATERNAL AND FOETAL MORTALITY IN PLACENTA PRAEIVIA\*

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IN the 95 years between 1844–1939 the foetal mortality from placenta praevia remained at between 54 per cent and 60 per cent, while the maternal mortality fell from 30 per cent to 5 per cent.

TABLE I

Author	Date	Maternal Mortality	Foetal Mortality
		%	%
Simpson .. ..	1844	30	60
Berkeley .. ..	1936	7	59
Browne .. ..	1939	5	54
Belfast series ..	1945–52	nil	14·9
	1953–60	0·9	11·1

As can be seen from Table I the reduction in both maternal and foetal mortality in the 16 years since 1945 has been gratifying and to assess the reasons for this improvement a series of 425 cases of confirmed placenta praevia has been critically analyzed. At the same time the opportunity was taken of studying the factors contributing to maternal and foetal deaths to see if any further improvement was possible.

These 425 patients comprise all those dealt with in the Royal Maternity Hospital, Belfast, in the 16-year period between 1945–1960. For purposes of comparison and to indicate the trends in treatment, the series has been subdivided into two eight-year periods, 1945–1952 and 1953–1960.

\* Based on a lecture given by one of us (C.H.G.M.) in St. Mary's Hospital, 7th March, 1961.

During the first eight-year period 206 patients were dealt with and in the second period the number was 219. These two figures correspond so closely that they permit a good statistical comparison to be made between the two eight-year periods.

### *Expectant Treatment*

In recent years the value of this treatment has been recognized and is becoming more widely accepted even though it entails the occupation of antenatal beds sometimes for weeks. It is obvious that the nearer the pregnancy can be carried to full term the more favourable the outlook for the baby. The patients in whom expectant treatment is most likely to improve the foetal prognosis are those who have their initial haemorrhage between 30–36 weeks. One has to recognize, however, that even in these patients there is a limit to the length of time one can continue this method of treatment depending on whether the haemorrhage recurs or persists (or is more than normal).

The number of patients requiring treatment within 72 hours after admission varies in individual hospitals. Macafee (1945) found it necessary to treat 47·6 per cent of cases actively shortly after admission but Stallworthy (1950) interfered immediately in only 13·5 per cent of cases.

Reference to Table II shows that there is a remarkable similarity in the percentages in all the columns except the fifth where the percentage of cases who had had previous haemorrhage admitted after 36 weeks and requiring urgent

TABLE II  
Cases Requiring Treatment Within 72 Hours

Total Cases	No. Treated in First 72 Hours	No. Over 36 Weeks on Admission	No. with First Haemorrhage After 36 Weeks	No. Over 36 Weeks with Previous Haemorrhage	No. Admitted Before 37 Weeks	Incomplete Records
1945-1952: 206 .. ..	100 (48.5%)	73 (73%)	50 (50%)	18 (18%)	27 (27%)	5
1955-1960: 219 .. ..	111 (50.2%)	77 (69.5%)	64 (57.6%)	7 (6.3%)	34 (30.5%)	6

treatment has been reduced by one-third. The figures are small but may indicate that more attention is being paid to the initial haemorrhage resulting in the immediate admission of the patient.

In the entire series of 425 patients, 211 (49.6 per cent) were treated within the first seventy-two hours but 150 (71 per cent) of these were admitted after the thirty-sixth week when expectant treatment is not so essential or indeed may be unwise, as the likelihood of spontaneous labour commencing after this time will increase the risk of recurrent bleeding.

In both eight-year periods approximately the same number of patients were admitted before 37 weeks and required urgent treatment. There were 61 such cases and the indication for active treatment in most of these was persistent bleeding in spite of rest in bed.

In seven (11.4 per cent) of the 61 cases the onset of premature labour aggravated the bleeding making intervention necessary. Thus, approximately one in ten patients admitted before 37 weeks requires active treatment because of the onset of labour.

Of the 206 patients in the first eight-year period, 59 (29.6 per cent) were delivered within 24 hours of admission, and of the 219 patients in the second eight-year period the corresponding number was 73 (33.3 per cent). Thus, in contrast to Stallworthy, we still find it necessary to deliver almost one-third of the patients within 24 hours of admission, mainly because they are over 36 weeks, but a significant number, 26.5 per cent, were less than 37 weeks maturity.

In Table III it is seen that approximately the same number of babies required delivery before

TABLE III  
Foetal Mortality in Relation to Maturity

Maturity	28-32 Weeks		33-36 Weeks		Over 36 Weeks		Total	
	1945-52	1953-60	1945-52	1953-60	1945-52	1953-60	1945-52	1953-60
Result:								
Alive .. ..	5	3 (4)	45	53 (54)	125 (127)	138 (141)	175 (177)	194 (199)
Stillborn ..	4	10	5	5	7	3	16	18
Neonatal death	4	4	7	1	4	2	15	7
Total .. ..	13	17 (18)	57	59 (60)	136 (138)	143 (146)	206 (208)	219 (224)
Mortality ..	8	14	12	6	11	5	31	25
Percentage loss ..	61.6	77.7	21.0	10.0	7.9	3.4	14.9	11.1

Note: Figures in brackets include extra babies due to twins.

37 weeks in each eight-year period. This, taken in conjunction with the details in Table II, shows that our use of expectant treatment has been consistent over the 16 years.

In the first eight years the total foetal loss was 14.9 per cent compared with 11.1 per cent in the second eight years. The difference between these two figures is not very great and at first glance would suggest that there has been little or no improvement.

If, however, the cases delivered after 32 weeks are considered the change can be appreciated. In spite of the need for early intervention it will be noted that the foetal mortality between 33–36 weeks in the second eight-year period has been reduced by half and the same feature is noticeable in the group over 36 weeks where the foetal loss is 3.4 per cent in the second eight-year period as compared with 7.9 per cent in the first period. It is, however, worth noting that the foetal loss after 36 weeks in both eight-year periods is one-third of the loss between 33–36 weeks, another strong argument for trying to delay intervention until after 36 weeks.

The reason why there appears to be little difference between the gross figures for the two eight-year periods is the occurrence of a 77.7 per cent foetal loss at 28–32 weeks in the second eight years. By comparing the three maturity groups it will be noted that over-loading with mature babies in the second eight-year period has not accounted for the reduced foetal loss. If every baby over 32 weeks maturity could have been saved there would still have been a foetal mortality of 5.1 per cent as the result of the loss in the 28–32 weeks group. This would suggest

that a foetal loss of approximately 5 per cent is the irreducible minimum for all cases of placenta praevia from the twenty-eighth week onwards. It also stresses the importance of knowing the maturities of the infants when comparing results from different centres!

Had we been able to eliminate the very premature babies of 28–32 weeks in both eight-year periods, the foetal mortality in the remaining groups taken together would have been 11.3 per cent for the first eight years and 5.3 per cent in the second.

It is important to try to estimate the size of the baby in the 28–32 weeks group and, if possible, before embarking on any treatment, ensure that the mother has not made a mistake in her dates. This is borne out in one patient who was an obese multipara and stated that she was only 32 weeks pregnant. On the strength of this statement and because the baby felt small on abdominal palpation, a version was performed which revealed that one was dealing with a baby of at least 35 weeks maturity and Caesarean section would have been the treatment of choice.

As one would expect, throughout the analysis of this series the importance of foetal maturity has been increasingly apparent. To some extent it is influenced by whether the patient is booked or unbooked and the details of this aspect are given in Table IV.

In the unbooked cases, the foetal loss in the two eight-year periods was 16.9 per cent and 15.2 per cent respectively. In the booked cases the foetal loss was 12.2 per cent in the first eight years and only 3.7 per cent in the second. The reduction in the foetal mortality in the

TABLE IV  
*Foetal Mortality and Maturity at Delivery in Booked and Unbooked Cases*

Maturity	28–32 Weeks		33–36 Weeks		Over 36 Weeks		Total	
	Years	1945–52	1953–60	1945–52	1953–60	1945–52	1953–60	1945–52
Booked .. ..	3 (2)	3 (2)	22 (4)	20 (1)	64 (5)	56	89 (11)	79 (3)
							12.2%	3.7%
Unbooked .. ..	10 (6)	14 (12)	35 (8)	39 (5)	72 (6)	87 (5)	117 (20)	140 (22)
							16.9%	15.2%
Total .. ..	13 (8)	17 (14)	57 (12)	59 (6)	136 (11)	143 (5)	206 (31)	219 (25)
							14.9%	11.1%

Note: Figures in brackets are babies lost.

booked cases is associated partly with the fact that the maturity on delivery is greater and partly that the duration of expectant treatment tends to be longer. Also, the booked patient attending the antenatal clinic regularly will be admitted at the first warning haemorrhage, however slight, while the unbooked non-attending patient is more likely to ignore the first slight bleeding.

In the series of 425 cases 71·4 per cent of the booked cases were over 36 weeks maturity at delivery compared with only 61·5 per cent of the unbooked. This difference holds for the two eight-year periods, being 71·9 per cent as against 61·5 per cent for the first eight years and 70·9 per cent as against 62·1 per cent in the second eight years, showing that there has been no favourable loading of booked cases over 36 weeks in the second eight-year period and yet the mortality in this group of booked cases was nil. Undoubtedly, the foetal prognosis is better in the booked patients than in those admitted as emergencies. Although not shown on the table the prognosis for the baby improves if an unbooked case is seen early and can be treated expectantly in hospital.

There must be some additional factors to explain the lowered foetal mortality in the booked cases of the second eight-year period and it will be shown that increasing use of Caesarean section has contributed to this.

In the unbooked, the number requiring blood transfusion was 10 per cent greater than in the booked patients. The main difference is that the unbooked emergency admission may have lost a considerable amount of blood before admission, whereas the booked patient in hospital should be dealt with before excessive bleeding occurs.

#### RECOGNITION OF CERTAIN IMPORTANT ANATOMICAL FEATURES OF THE PLACENTA

In the majority of cases a placenta praevia covers a much larger area of the uterine cavity, is often thinner than the normally situated placenta and is frequently markedly lobulated.

(a) *Position of the placenta:* It has long been recognized that in the majority of cases the placenta in a placenta praevia is situated posteriorly. In this series of 425 patients the

TABLE V  
*Presentation*

	Degree				Total
	1	2	3	4	
Breech .. ..	9	7	26	13	55
Transverse .. ..	10	24	15	33	82
Vertex .. ..	62	89	69	68	288
	201		224		425

position of the placenta was noted on 381 occasions. It was posterior in 53·8 per cent, anterior in 30·2 per cent, and both anterior and posterior in 16 per cent.

The posterior placenta is believed to be especially dangerous, particularly if the cord is attached in the region of the internal os. According to our figures, this is also applicable to the anterior placenta.

(b) *Influence of position of placenta on malpresentation:* When the placenta occupies the lower segment the presenting part is prevented from entering the brim but its level varies with the amount of placenta in the lower segment. In a major degree of placenta praevia the head or breech may lie very high and free or the foetus may be lying transversely.

In 67 per cent of the series the vertex presented, in 20 per cent the lie was transverse and the breech presented in 13 per cent of cases. (Table V.)

In the 201 cases of first or second degree, 50 (24·8 per cent) were transverse or breech presentations whereas in the 224 cases of major degrees, 87 (38·8 per cent) were malpresentations, a definitely higher incidence.

During this study it soon became apparent that there was a very high foetal loss in cases of breech and transverse presentations delivered vaginally and this will be referred to later.

(c) *Degree of placenta praevia:* Table VI shows the degrees of placenta praevia met with over the sixteen years.

It will be seen from this table that the various degrees in the two eight-year groups under study correspond so closely that from this aspect there is no favourable loading with minor degrees which might account for the lowered foetal

TABLE VI  
*Degree of Placenta Praevia*

Degree	1	2	3	4				
Years	1945-52	1953-60	1945-52	1953-60	1945-52	1953-60	1945-52	1953-60
Parity:								
Primigravida	15	10	7	10	9	7	10	7
1 to 4	19	24	39	36	34	31	36	31
5 and over	5	8	13	15	8	21	11	19
Total	39	42	59	61	51	59	57	57
Foetal loss	5		11		19		21	
Foetal loss percentage	6.1		9.1		17.3		18.4	

mortality in the second eight-year series. When one correlates the degree of placenta praevia with its effect on foetal mortality it is seen from Table VI that the foetal loss rises proportionately with the increasing severity in degree of placenta praevia and in the major degree the loss is approximately three times greater than with the first degree.

(d) *Position of the cord*: In placenta praevia the cord is often situated excentrically or has a velamentous insertion. If the insertion is near the internal cervical os the risks to the foetus are greatly increased and Caesarean section is the only safe treatment. In a series of 174 cases (Macafee, 1945), nine (27 per cent) of the 32 babies lost died as a result of a low attachment of the cord, while in the present series a low attachment contributed to the death of nine babies and is next to prematurity as a major cause of foetal loss.

When doing a lower segment Caesarean section, especially if the placenta lies anteriorly, one must be conscious of the possible danger of the cord being attached to the area of the placenta which is incised when entering the amniotic cavity. It is such a complication which may account for the anaemic babies recorded in the literature as requiring blood transfusion after delivery. Incision of an anteriorly situated placenta is an indication for rapid delivery of the baby to prevent blood loss from a severed cord or umbilical vessel. In the present series no baby required transfusion as a result of this complication.

(e) *Placenta accreta-praevia*: This is a rare complication but one with which the surgeon must be prepared to deal at very short notice. Abnormal adherence of the placenta is recorded on ten occasions but in only two was there histological confirmation of placenta accreta. It has been shown that in cases of placenta accreta there is a relatively high incidence of placenta praevia (Millar, 1959). If the complication is encountered in a multipara hysterectomy is probably the safest method of treatment but when met with in a primigravida patient the question of conservative surgery must be considered and the abnormally adherent portion left attached.

This complication accounted for one maternal death, a death which will be discussed later.

#### FOETAL MORTALITY AND METHOD OF DELIVERY

In Table VII the method of delivery is correlated with the foetal loss in the different maturity groups.

In analyzing Table VII one outstanding feature is the value of the increased incidence of Caesarean section in the 33-36 weeks group. In the period 1945-52, 68.4 per cent of the babies in this group were delivered by Caesarean section with a loss of 17.7 per cent, whereas in 1953-60, 86.4 per cent were delivered in the same way with a foetal loss of 5.7 per cent. The much higher foetal salvage in the second eight years must be attributed to improved paediatric care as well as the increased incidence of Caesarean section.

TABLE VII  
Type of Delivery with Different Maturities and Corresponding Foetal Loss

Type of Delivery	1945-1952										Total								
	28-32 Weeks			33-36 Weeks			Over 36 Weeks												
	Alive	SB	NND	Total	Alive	SB	NND	Total	Alive	SB		NND	Total						
Normal labour including A.R.M.*	..	..	..	3	-	-	3	9	1	1	1	11	26	1	-	27	41	(2)	
L.U.S.C.S. and classical C.S.	..	..	..	1	1	3	5	32	1	6	39	6	96	3	4	103	147		
Version and/or leg traction	..	..	..	3	-	-	3	3	3	-	6	1	1	3	-	4	13		
Willitt's forceps and normal deliveries	..	..	..	1	-	1	2	1	-	-	1	2	2	-	-	2	5		
Total	..	..	..	5	4	4	13	45	5	7	57	7	125	7	4	136	206	(2)	(2)
1953-1960																			
Normal labour including A.R.M.*	..	..	..	2	1	-	3	4	-	-	4	-	4	26	1	-	27	34	
L.U.S.C.S. and classical C.S.	..	..	..	1	2	2	5	48	2	1	51	1	106	-	1	107	163		
Version and/or leg traction	..	..	..	(1)	-	-	(1)	(1)	-	-	(1)	-	(2)	2	2	4	16	(4)	
Willitt's forceps and normal deliveries	..	..	..	-	7	2	9	-	3	-	3	-	2	(1)	-	(1)	(1)		
Total	..	..	..	3	10	4	17	53	5	1	59	1	138	3	2	143	219	(3)	(5)

\* This includes deliveries as vertex and breech. Figures in brackets =twins.

*Analysis of Table VII*

<p>33-36 Weeks Group: { 1945-52--11 with loss of 2 (18%) { 1953-60-- 4 with no foetal loss { 1945-52--39 (68.4%) with loss of 7 (17.7%) 6 N.N.D. 1 S.B.</p>	<p>Normal deliveries after A.R.M.</p>	<p>Normal deliveries after A.R.M.</p>	<p>Over 36 Weeks Group: { 1945-52-- 27 with loss of 1 S.B. (3.7%) { 1953-60-- 27 with loss of 1 S.B. (3.7%) { 1945-52--103 (75.7%) with loss of 7 (6.7%). 4 N.N.D. 3 S.B.</p>
<p>1953-60--51 (86.4%) with loss of 3 (5.7%) 1 N.N.D. 2 S.B.</p>	<p>Caesarean section</p>	<p>Caesarean section</p>	<p>{ 1953-60--107 (74.8%) with loss of 1 N.N.D. (0.9%)</p>
<p>{ 1945-52-- 6 with loss of 3 (50%) { 1953-60-- 3 with loss of 3 (100%) { In each group there was one case, with no foetal loss.</p>	<p>Version and/or leg traction</p>	<p>Version and/or leg traction</p>	<p>{ 1945-52-- 4 with loss of 3 S.B. { 1953-60-- 4 with loss of 2 S.B. { 1945-52-- 2 with no loss. { 1953-60-- 5 with loss of 1 N.N.D.</p>
<p>A.R.M. = artificial rupture of the membranes. N.N.D. = neonatal death. S.B. = stillbirth.</p>	<p>Willitt's</p>	<p>Willitt's</p>	

TABLE VIII  
*Stillbirths and Neonatal Deaths*  
*Cause of Death*

Prematurity (28–32 weeks) .. .. .	13 (6)
Cord insertion near os .. .. .	9 (4)
I.U.D. before treatment .. .. .	9 (8)
Foetal cyanotic attacks .. .. .	8
Abnormalities .. .. .	4 (2)
Mismanagement .. .. .	4 (2)
Accidental haemorrhage .. .. .	2 (1)
Maternal shock .. .. .	2
Unexplained .. .. .	2
Rhesus incompatibility .. .. .	2
Anaesthesia .. .. .	1
Total .. .. .	56 (23)

Figures in brackets refer to version and/or leg traction when the baby was presenting as a breech, transverse or vertex.

The incidence of Caesarean section in the over 36-weeks group is unchanged (75·7 per cent and 74·8 per cent) in the two periods but the foetal loss has been reduced from 6·7 per cent to 0·9 per cent. It is especially gratifying to note that in 107 Caesarean sections performed at this maturity in 1953–60 there were no stillbirths and only one neonatal death, a perinatal mortality which is probably lower than that associated with any complication for which a Caesarean section is indicated.

Undoubtedly, as has already been indicated, improved paediatric care has contributed to the reduced perinatal mortality, especially in the more premature groups. We must express our

thanks to the medical and nursing staff of the hospital nursery for their care of these infants. The decision to perform Caesarean section should not be unduly delayed lest foetal hypoxia will have produced irreversible changes which even good paediatric care cannot overcome.

Prematurity is the largest single factor accounting for 23·2 per cent of all stillbirths. (Table VIII.)

Cord complications and intra-uterine death before treatment are next in importance as factors causing foetal loss. Each accounted for 16 per cent of the foetal mortality. Maternal shock associated with a marked fall in blood pressure appeared to be a factor responsible for foetal hypoxia and death in two cases.

Maternal cyanosis under anaesthesia was probably the factor in another case.

The great danger of delivering any presentation vaginally as a breech following version or even bringing down a leg in a breech presentation can be seen in Table IX.

Of 26 cases of breech and transverse presentations, 15 babies were stillborn. Of these, four had died *in utero* before treatment was instituted. Thus, there were 11 stillbirths that might have been avoided, i.e., 45 per cent of the breech and transverse presentations delivered as breech. From the study of these 11 stillbirths seven were over 33 weeks and died some hours after bringing down a leg. The other four babies were under 33 weeks maturity and their chances of survival were problematical. Even if we were

TABLE IX  
*Breech Deliveries*

	Number	Loss
<b>Breech presentation:</b>		
A. Delivered as assisted breech .. .. .	8 (2)	1
B. Leg brought down .. .. .	5	4—I.U.D.
<b>Transverse presentations:</b>		
Delivered as breech after version .. .. .	13	10
<b>Vertex presentations:</b>		
Delivered as a breech following version and bringing down a leg	11 (1)	9—4 I.U.D.
<b>Total breech deliveries .. .. .</b>	<b>37 (3)</b>	<b>24</b>
		<b>60 per cent loss</b>
<b>Total version and/or leg traction .. .. .</b>	<b>29 (1)</b>	<b>23—8 I.U.D.</b>

Figures in brackets are extra babies due to twins.

justified in eliminating them there were still seven stillbirths (26.9 per cent) that were possibly avoidable. This represents 12.5 per cent of all stillbirths in the series. From this analysis it is obvious that, when dealing with a transverse or breech presentation in association with a placenta praevia, pulling down a leg must be avoided in the interests of the baby, even in cases where it might be considered as justified. In the 11 vertex presentations delivered as a breech following version there were nine deaths of which all were under 33 weeks maturity and four were intra-uterine deaths.

It is regrettable that four cases in the series are considered to have been mismanaged. The first case has already been mentioned where the patient was believed to be 32 weeks and was really more mature.

Another patient was left with membranes ruptured for too long without being delivered and the child died from an intra-uterine infection.

The third patient had a profuse haemorrhage for which she required a transfusion but her necessary Caesarean section was postponed to a convenient time, 8 hours later. In the interval she had a further haemorrhage after which the foetal heart could not be heard. The fourth case was at term with a third degree placenta praevia and a breech presentation. Instead of delivering the patient by Caesarean section a leg was pulled down a short time after which the foetal heart could not be heard.

It was interesting to find that there were only four cases of foetal abnormality in the series, an incidence of 0.9 per cent. This incidence is also lower than that (3.4 per cent) recorded by one of us (Macafee, 1945) in an earlier series. Two of the babies were anencephalic, one a hydrocephalic and one had multiple intestinal abnormalities. All were stillborn accounting for 7.1 per cent of the foetal mortality.

#### REVIEW OF MATERNAL MORTALITY

There were two maternal deaths in the 425 cases (0.47 per cent). The first occurred in 1954 in a grande multipara aged 43 years who had had eight previous deliveries, the last five being Caesarean sections. She had a small haemorrhage at 32 weeks for which she was admitted

to hospital. At 36 weeks she had a further haemorrhage which necessitated an immediate section, the classical operation being performed. A placenta accreta-praevia was then discovered and attempts to remove the placenta were associated with haemorrhage and shock. A hysterectomy was performed but the patient died as this operation was completed.

The second death occurred in 1956 in a patient aged 36 who had had two previous pregnancies both terminated by Caesarean section for disproportion. She was admitted at the twenty-sixth week of her third pregnancy with vaginal bleeding and had ten episodes until the thirty-fifth week when profuse bleeding started. A classical Caesarean section was performed on account of adhesions to lower segment and bladder and there was no difficulty in dealing with a fourth degree placenta praevia.

There was a moderate degree of shock at the end of the operation with a blood pressure of 90/60 mm. Hg. A pint of blood was transfused but two hours later there was a profuse haemorrhage from an atonic uterus from which two pints of blood clot were evacuated. In spite of active resuscitative measures the patient died 11 hours after operation.

In retrospect, there are obvious avoidable factors in these two cases. In the first, recognition of a placenta accreta in this patient was an indication for a hysterectomy which should not have been delayed. In the second patient it would appear that the uterine atony was unrecognized before irreversible shock had occurred.

While two deaths in 425 cases is a maternal mortality of 0.47 per cent we cannot really be satisfied with this as the mortality should have been nil.

Table X shows the figures from the Registrar-General's reports for the years 1942-49 during which time 395 women are registered as having died from placenta praevia in England and Wales. Since 1949 the Registrar-General has not distinguished between placenta praevia and other causes of ante-partum haemorrhage as a cause of death during pregnancy or after childbirth. Further details from 1952-57 have been obtained from the two *Reports on Confidential Enquiries into Maternal Deaths in England and Wales* (Ministry of Health, 1957, 1960). We see



TABLE X  
Deaths Attributed to Placenta Praevia  
England and Wales, 1942-49

Year	During Pregnancy	During or After Childbirth
1942 .. ..	10	58
1943 .. ..	11	47
1944 .. ..	9	59
1945 .. ..	6	42
1946 .. ..	15	48
1947 .. ..	5	27
1948 .. ..	3	33
1949 .. ..	6	16
	65	330
1952-54 ..	6	23 (55.2%)
1955-57 ..	9	19 (43%)

Figures in brackets are avoidable factors.

that while the maternal mortality rate from placenta praevia fell up to 1949, the improvement has not been maintained.

It will be noted that between 1942-49, 65 women died from placenta praevia during pregnancy and 330 during or after childbirth. Naturally, one cannot arrive at accurate conclusions as to the various causes of death, but in view of the two reports mentioned one can deduce certain things. It is probable that all these women died as a result of some of the following avoidable factors:

- (1) Vaginal examination following a warning haemorrhage.
- (2) Rupture of the uterus following bipolar version, a method of treatment commonly used in the earlier years under review.
- (3) Failure to recognize severe anaemia.
- (4) Post-partum haemorrhage superimposed on anaemia and ante-partum haemorrhage.
- (5) Puerperal sepsis.

If we believe that maternal deaths from placenta praevia should rarely, if ever, occur and then only in exceptional circumstances, then 395 women, or 49 per annum, died unnecessarily.

In 1945, this subject was discussed at the Royal Society of Medicine and the ways in which the results might be improved were published. In 1950 the subject was again ventilated at the Royal Society of Medicine and received wide publicity. Yet, both mothers and babies are dying because family doctors and

consultants are not prepared to pay attention to details which have been recognized as valuable for sixteen years.

The two reports on confidential enquiries into maternal deaths published in 1957 and 1960 are disturbing.

The first report deals with only 1,410 out of the 1,800 deaths recorded by the Registrar-General and the second report with 1,200 out of 1,450 deaths registered. Among the missing numbers there may be some deaths from the complication of placenta praevia.

While individual hospitals all over the United Kingdom have excellent results showing a maternal mortality of nil or under 1 per cent and foetal mortalities approaching 10 per cent it is impossible to be satisfied or complacent when one reads these two reports.

It will be seen that in the six years under consideration 57 women, or almost 10 per year, died from a complication which should be associated with no maternal death, or only an occasional unavoidable one.

Reading the comments in the two reports makes one feel that some radical change is necessary in the outlook of some hospitals, family doctors and the patients themselves. For example, "of the hospital cases two were discharged after admission for warning haemorrhages" makes one despair of ever putting across the basic principles of expectant treatment. Another sentence "the responsibility for two women was left to comparatively junior registrars" would suggest that the consultant concerned was failing in his duty because these cases should be dealt with by either a consultant or the most experienced senior registrar present.

It is stated in the 1955-57 report published in 1960: "In four cases the patient herself was at fault by refusing to stay in hospital." One appreciates the many difficulties with which these mothers have to contend, especially if they have left young children at home, but if the consultant in charge will take the time and trouble to have a personal talk with the patient he is unlikely to fail to convince her of the need for a further stay in hospital. While the almoner and the sister in charge of the ward can be of the greatest help the advice must be given by the most senior member of the team, the consultant.

When we realize that a report on these confidential enquiries was published four years ago and the various avoidable factors noted it is disturbing to find that the second report published in 1960 does not show any reduction in maternal mortality from that in the previous report and repeats the avoidable factors of four years ago.

In Northern Ireland a report similar to the two reports from England and Wales is about to be published. In the four years under review there were 116 maternal deaths of which seven were due to placenta praevia. Of these seven deaths two were regarded as unavoidable, two were classified as avoidable and three as doubtfully avoidable. On the whole the picture in Northern Ireland is much the same as in England and Wales. (Table XI.)

These three reports would suggest that all those concerned have become too complacent

TABLE XI

	Deaths	Avoidable Factors
England and Wales, 1952-54	29 (2.1%)	55.2%
England and Wales, 1955-57	28 (2.3%)	43.0%
Northern Ireland, 1956-59 . .	7 (6%)	28.5%

Figures in brackets = percentages of all deaths.

about the results of treatment of placenta praevia. It is only by the most careful supervision and constant attention to detail that the maternal mortality associated with placenta praevia can be reduced to, and maintained at, nil.

## ACKNOWLEDGMENTS

Our thanks are due to our colleagues in the Royal Maternity Hospital, Belfast for permission to use their cases; to the Resident Medical Staff of the Royal Maternity Hospital for their assistance in collecting data; to Mr. J. D. Merritt and Mrs. J. McCabe of the Department of Social and Preventive Medicine, The Queen's University of Belfast for statistical help, and to Miss M. Weller for secretarial assistance.

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