

PLACENTA PRAEVIA

A Review of 242 Cases and the Principles of Management

BY

G. H. GREEN, B.A., B.Sc., M.B., M.R.C.O.G.

*Assistant Medical Director
National Women's Hospital*

*Senior Lecturer in Obstetrics and Gynaecology
The University of Auckland, New Zealand*

MACAFEE (1945, 1949) has been very prominent in drawing attention to the conservative management of cases of placenta praevia. He has stated concisely the guiding principles in these words ". . . placenta praevia is not an obstetrical emergency which must be dealt with at the first haemorrhage", which is of course a complete negation of Jaggard's formerly time-honoured dictum that "there is no place for the expectant treatment of placenta praevia". In 1955 Grant presented 200 cases, treated on Macafee's principles, which show the best results, from the point of view of perinatal and maternal mortality, of any series yet published. He wondered from a consideration of other series whether or not Jaggard's view still held sway in some quarters.

The National Women's Hospital, from which the present series of cases originates, was established in 1947 and, from the outset, the policy in cases of placenta praevia has been on the lines laid down by Macafee in 1945. Thus an opportunity arises for independent evaluation of these principles. Since the desideratum of a zero maternal mortality has been achieved by many centres another reason for presenting a series of cases is to examine closely the means whereby perinatal mortality may possibly be reduced still further.

GROUPING OF CASES

The 242 cases to be considered were treated in the 9 years April, 1948 to March, 1957. In

these 9 years 303 cases were listed in the records but after scrutiny of all case notes 61 cases were deleted as not being proven, i.e., the placental site was not felt on vaginal examination under anaesthesia, or seen at Caesarean section, or felt before manual removal of an attached placenta. The single exception made is one case where the placenta was born vaginally before the infant (which, although premature, survived).

NUMBERS, INCIDENCE AND CLASSIFICATION

TABLE I
(Percentages in brackets)

| Total | Booked Cases | Emergency Cases | Primi-gravidae | Multi-parae |
|-------|--------------|-----------------|----------------|-------------|
| 242 | 60 (25) | 182 (75) | 40 (16.5) | 202 (83.5) |

In the period considered there were 22,620 deliveries in the hospital giving an incidence of placenta praevia of just over 1 per cent. Berkeley (1936) and Mahfouz (1939) also give a 1 per cent incidence, although later series (Johnson, 1950, 1 in 250; Westgren, 1954, 1 in 380) give lower rates. Since the diagnostic criteria are fairly strict it is likely that our true incidence is higher than 1 per cent. The explanation is seen in the high proportion (75 per cent) of emergency cases in the series. The hospital is the only public one where abnormal obstetrical cases are handled in an area with a population of approximately half

a million. The incidence amongst booked cases is 0.32 per cent, slightly over one-third of all deliveries in the hospital being emergency cases.

TABLE II

| Type .. | 1 | 2 | 3 | 4 |
|----------|------|------|------|------|
| Numbers | 40 | 72 | 101 | 29 |
| Per cent | 16.5 | 29.8 | 41.7 | 12.0 |

The incidence shown of the more severe degrees is probably higher than actually exists since it is likely that many of the lesser degrees delivered themselves with minimal haemorrhage, and so passed unnoticed.

SEVERITY OF HAEMORRHAGE

In Table III this is shown according to type and simplified into that requiring transfusion or not. Since haemorrhage is an ever-present risk in this condition either before, during or after delivery, it does not include only those cases where the initial or any one episode of bleeding warranted transfusion but also those cases where repeated small haemorrhages produced undue lowering of the haemoglobin, where excessive bleeding during Caesarean section occurred, and where primary post-partum haemorrhage ensued.

TABLE III

| Type | Numbers | Transfused | Per cent Transfused |
|-------------|---------|------------|---------------------|
| 1 | 40 | 14 | 35.0 |
| 2 | 72 | 31 | 42.1 |
| 3 | 101 | 52 | 51.5 |
| 4 | 29 | 22 | 75.5 |
| Total | 242 | 119 | 49.1 |

It is worthy of note that over one-third of the Type I cases, a type usually regarded with equanimity, required transfusion. This is a point which will be referred to later with regard to foetal salvage.

MANAGEMENT

In general the aim in management was to prolong the pregnancy to at least 37 or 38 weeks and so gain a more mature infant, provided this did not conflict with the safety of the mother. Co-operation from a large number of general practitioners (there is practically no domiciliary midwifery performed by either doctors or midwives in the area) has been very good in that only 2 cases were admitted having had a diagnostic vaginal examination. In 72 patients (29.8 per cent) at least a fortnight elapsed from the initial admission with a presumptive diagnosis of placenta praevia to the time of delivery. A further 30 (12.4 per cent) were in hospital from 6 to 13 days before delivery so that altogether 42.2 per cent of the patients were treated conservatively to gain a more mature infant. For such patients cross-matched blood was always ready; unless transfusion was indicated immediately two pints of cross-matched blood were made available by the laboratory and, if not used, automatically renewed every fourth day until no longer required. This constant availability of cross-matched blood was of considerable value to many of the more severe cases who had significant haemorrhages whilst being managed conservatively. One such case had a very severe haemorrhage in the X-ray department, three weeks after admission. Adequate replacement with fully matched blood was possible within minutes.

Cases at or within two or three weeks of term were not managed any more conservatively than was necessary to type and cross type blood or treat any other condition present. X-ray placentography was performed (from 1952 onwards) in all cases where indicated, i.e., in most of the early cases and in the later cases (37 weeks and onwards) where there was any clinical doubt as to the diagnosis. Wherever possible, and if placentography had not been performed, a "straight" abdominal X-ray was taken to exclude foetal abnormality. Since only 2 such cases were recorded and also because other series (Grant, 1955, mentions 2 such infants) show a similarly low incidence, and because many abnormalities are not diagnosable by X-ray, it is considered that such examination

is indicated only when possible but that it should not be made obligatory before performing Caesarean section. Severe haemorrhage and the necessity of controlling it rapidly may justify Caesarean section even though the baby be dead or deformed.

In the conservative management of suspected placenta praevia there often arises the question of what to do with the patient who has ceased bleeding, since admission, and doubts have arisen as to the correctness of the diagnosis. Often the lie of the foetus is quite stable, the foetal head has begun to settle into the pelvic brim and the radiological findings are doubtful or even negative for placenta praevia. In such cases the policy has been to allow the patient to go home if she lives within reasonable distance of the hospital and can return quickly if further haemorrhage occurs. If the head has engaged and the X-ray is unequivocally negative for placenta praevia the patient is allowed home even if she lives at a distance. No hard and fast

rules can be laid down but it is felt that if due regard is given to the clinical and radiological findings it is possible to pick the patient whom it is safe to discharge. We therefore agree with Watson *et al.* (1957) that the results of radiological technique are sufficiently reliable and can be trusted—especially when negative findings are taken in conjunction with clinical evidence. Many obstetricians will quarrel with this view and possibly some (Olney, 1957) will make gloomy prophecies of disaster. We can only say that since we have learned how helpful and reliable radiology can be in the diagnosis of placenta praevia we have discharged undelivered many patients over the last 5 years with a history of vaginal bleeding late in pregnancy, and have not yet had cause to regret it.

TREATMENT

Treatment according to the degree of placenta praevia is shown in Table IV.

TABLE IV

| Treatment | Type 1 | Type 2 | Type 3 | Type 4 | Total |
|--|--------|--------|--------|--------|-------|
| Caesarean section | 19 | 57 | 92 | 28 | 196 |
| Artificial rupture of membranes and/or vaginal delivery .. | 19 | 12 | 6 | 1 | 38 |
| Breech extraction | 1 | 2 | 2 | — | 5 |
| Artificial rupture of membranes and Willetts forceps .. | 1 | 1 | 1 | — | 3 |
| Total cases | 40 | 72 | 101 | 29 | 242 |

TABLE V

| Author | No. of Cases | Percentage Incidence of Caesarean Section | Maternal Mortality (Per cent) | Perinatal Mortality (Per cent) |
|---|--------------|---|-------------------------------|--------------------------------|
| Fitzgerald <i>et al.</i> , 1954 | 283 | 19.4 | 0.7 | 59.2 |
| Parks and Barter, 1950 | 187 | 31.1 | Nil | 52.8 |
| Westgren, 1954 | 356 | 45.0 | 2.9 | 38.0 |
| Stallworthy, 1951 | 245 | 40.0 | 0.4 (not associated) | 18.0 |
| Macafee, 1949 | 275 | 46.0 | 0.72 | 20.0 |
| Grant, 1955 | 200 | 76.0 | Nil | 11.9 |
| Present series | 242 | 81.0 | Nil | 12.6 |

The incidence of Caesarean section is thus 196 sections in 242 cases or 81·0 per cent. Seven of the operations were of the classical type, 6 in the first 2 years and only 1 in the last 7 years of the series. No apology need be given for such a high proportion of sections for a glance at a few series (Table V) of recent years should show that as regards the chief aim of obstetrics—to produce a live baby and healthy mother—there is now no place for the “old-fashioned” methods in the vast majority of cases, and that apology is only needed if the Caesarean section is not high enough.

It will be noted from Table IV that 19 out of 40 patients with Type I placenta praevia required Caesarean section. Other reasons in 9 of these were:

| | | |
|--|---------|---------|
| Toxaemia of pregnancy | | 2 cases |
| Previous successful repair for stress incontinence | | 1 case |
| Breech presentation | | 2 cases |
| Previous Caesarean section | | 1 case |
| Cord presentation | | 1 case |
| Misleading positive X-ray findings | | 2 cases |

In the other 10 cases the amount of bleeding (including 3 with bleeding following examination under anaesthesia), and the clinical diagnosis, were sufficient to warrant Caesarean section. One case with a Type I placenta praevia required a transfusion of 3 pints of blood following a spontaneous bleeding at the onset of labour.

RESULTS OF TREATMENT

Since no mothers were lost this need only be considered with regard to perinatal mortality.

TABLE VI

| | | |
|---------------------------|----|---------------------------|
| No. of infants born | .. | 246 |
| Total perinatal mortality | | 31 or 12·6 per cent |
| Full-term infants lost | .. | 10 in 179 or 5·6 per cent |
| Premature infants lost | | 21 in 67 or 31·4 per cent |

Two premature infants (one with anencephaly, the other with meningocele and exomphalos) have not been corrected for since it is generally thought that placenta praevia may predispose to such abnormalities. Twenty-one premature infants (including the 2 abnormal ones) were delivered vaginally and 9 of the 19 without congenital abnormalities (47·4 per cent) were lost; of 46 premature infants delivered abdominally only 10 (21·8 per cent) were lost. Of the full-term infants the death rate was 16·5 per cent (5 in 27) for vaginal delivery, and 3·3 per cent (5 in 152) for Caesarean section. The combined rates are 7·6 per cent (15 in 198) perinatal mortality for Caesarean section and 33·3 per cent (16 in 48) for vaginal delivery. The perinatal loss for Caesarean section generally in the hospital is 6·9 per cent, averaged over the last 9 years.

TABLE VII
Perinatal Mortality According to Type and Contribution of Prematurity

| Type | No. of Infants | Perinatal Mortality | | Perinatal Mortality Associated With | | Percentage Contribution of Prematurity to Type Mortality |
|-------------|----------------|---------------------|----------|-------------------------------------|-----------|--|
| | | No. | Per cent | Prematures | Full Term | |
| 1 | 42 | 4 | 9·5 | 2 | 2 | 50·0 |
| 2 | 74 | 7 | 9·5 | 5 | 2 | 71·4 |
| 3 | 101 | 13 | 12·9 | 10 | 3 | 77·0 |
| 4 | 29 | 7 | 24·1 | 4 | 3 | 57·1 |
| Total | 246 | 31 | 12·6 | 21 | 10 | 67·7 |

FACTORS IN PERINATAL MORTALITY

Table VII shows the perinatal mortality according to type and also the contribution of prematurity to that mortality.

This table shows clearly that, despite the policy of withholding interference for as long as possible in the interests of maturity of the infant, prematurity still plays a considerable part in the perinatal mortality of placenta praevia.

A further analysis of the 31 infants lost shows that haemorrhage on the part of the mother also played a considerable part in this loss, for in no fewer than 27 of the 31 cases transfusion was necessary.

TABLE VIII

Severity of Bleeding in 27 Cases Where Infant was Lost

| Transfusion required | 500 c.cm. | 500– 1,500 c.cm. | 1,500 c.cm. + |
|----------------------|-----------|---------------------|------------------|
| Number of cases | 8 | 12 | 7 |

The other 4 cases where the infant died were:

- (1) Two premature infants with abnormalities incompatible with life.
- (2) Breech delivery of a 1 pound 13 ounces infant.
- (3) Full-term infant. Examination under anaesthesia following a brisk haemorrhage late in labour revealed a Type II placenta praevia and brow presentation. Infant dead before extension to face presentation and forceps delivery achieved.

The fact that haemorrhage of major degree (in the 27 such cases it was spontaneous in 25 and only twice provoked by diagnostic vaginal examinations) played such a part in perinatal mortality might seem to indicate that there is an irreducible minimum of foetal loss. In an attempt to see if it were possible to reduce infant loss still further the notes of each patient where the infant was lost were again reviewed. This showed that it seems possible that the policy of conservatism may be carried too far in some cases.

A detailed survey of these 31 cases shows that there were 20 cases where it can be considered that it was almost impossible to have salvaged

the infant. In 14 of these there was sudden and severe haemorrhage, mostly preceded by one or more warning haemorrhages. There was no delay in instituting active treatment and undertaking delivery in 5 of these, but in 5 delay of from 2 to 4 hours was necessitated by the mother's condition. In one other case there was calculated delay, despite quite severe haemorrhage, because of extreme prematurity of the infant (1 pound 13 ounces). In another case the patient herself actually delayed calling a doctor until her own condition was parlous and the infant dead. The remaining 6 of this group of 20 cases comprised infants whose mothers all had persistent haemorrhage giving rise to concern but which were all 3½ pounds and less in weight. It is possible that earlier Caesarean section might have saved one or two of this group but in the presence of such a degree of prematurity this is very doubtful. Table IX summarizes this group.

TABLE IX

"Unsalvageable" Group—20 Cases

| | | | | | |
|--|----|----|----|----|----|
| Severe haemorrhage: | | | | | |
| No delay in treatment | .. | .. | .. | .. | 5 |
| Delay for maternal condition | .. | .. | .. | .. | 5 |
| Delay by patient | .. | .. | .. | .. | 1 |
| Delay for extreme prematurity | .. | .. | .. | .. | 1 |
| Total | .. | .. | .. | .. | 12 |
| Persistent but not alarming haemorrhage: | | | | | |
| Infants 3½ pounds and less | .. | .. | .. | .. | 6 |
| Abnormal infants | .. | .. | .. | .. | 2 |

This leaves 11 cases where possibly with different obstetrical management the infant might have been saved. In 2 of these cases there was severe haemorrhage provoked by vaginal examination before admission. One of these had actually had two examinations, one for surgical induction for mild toxæmia (despite two previous small warning haemorrhages) which provoked some bleeding, followed by a further examination to find out the cause of the bleeding. Severe bleeding ensued and the patient was then sent 30 miles by ambulance to the hospital. It is a fortunate chance that this patient did not become the only maternal loss. The other case

examined vaginally had been admitted to a small public hospital in the city dealing mainly with normal cases and examined there. The infants in these 2 cases and in another where there was unaccountable delay by the referring doctor in sending the patient to hospital were all dead on admission of the mother. Infant loss in such cases can only be avoided or lessened by education of the general practitioners handling maternity cases. All 3 cases occurred prior to 1953 and the establishment of regular teaching courses for practitioners as part of the activities of the University of Auckland Postgraduate School of Obstetrics and Gynaecology.

In the remaining 8 cases it is possible that conservatism may have been carried too far and that earlier interference, particularly in the direction of Caesarean section, might have salvaged all 8 infants. All infants were 4 pounds or more in weight and therefore of reasonable maturity, and in every case persistent haemorrhage which had failed to settle following admission had given warning that a conservative policy was unlikely to give a more mature infant before labour ensued. A summary of these cases is given here:

Case 1. 50.2428

Persistent alarming loss after admission at 34 weeks was allowed to continue for 24 hours before examination under anaesthesia showed a Type IV placenta praevia and Caesarean section was undertaken. The 5-pound infant died 24 hours later.

Case 2. 50.3454

The history was almost exactly the same as in Case 1 except that it was a Type III placenta praevia and the infant weighed 5 pounds 3 ounces. It is easy to be wise after the event of course but conservatism would seem to have been allowed to degenerate into procrastination in these 2 cases.

Case 3. 51N.253

Persistent loss for 24 hours following admission at 35 weeks. One severe loss gave rise to foetal cardiac irregularity which apparently recovered. No action undertaken until another 24 hours had elapsed when, after a further heavy loss, the foetal heart sounds disappeared. EUA showed a Type II placenta praevia and artificial rupture of the membranes was followed by the delivery of a stillborn infant weighing 4 pounds 10 ounces.

Case 4. 51N/1088

Heavy loss before admission at 34 weeks by dates. Foetal heart satisfactory. Further severe bleeding 6 hours

later but foetal heart still satisfactory. EUA three hours later still at the onset of labour showed a Type III placenta praevia and foetal heart no longer heard. A.R.M. performed. Stillborn infant weighing 6 pounds 10 ounces.

Case 5. 51N/3192

Persistent loss for 48 hours following admission at 36 weeks. Foetal heart normal. EUA showed a Type III placenta praevia. Section not done because of maternal bronchiectasis. This was a mistake since the bronchiectasis was a contra-indication to the anaesthetic—which had already been given. Stillborn infant weighing 5 pounds 9 ounces.

Case 6. 53N/81

Persistent loss over 12 hours following 2 weeks conservative management necessitated transfusion. Increased by onset of labour. No interference for further 4 hours when EUA showed a Type III placenta praevia and the cervix almost fully dilated. Infant stillborn and weighed 4 pounds 3 ounces.

Case 7. 54N/1207

Considerable and persistent loss with irregularity of the foetal heart for three hours following admission. EUA showed Type I placenta praevia. Artificial rupture of the membranes was followed by a five-hour labour and the neonatal death of an infant weighing 4 pounds.

Case 8. 56N/1757

This case was similar to Case 4 in that a mistake in maturity was made, the patient being thought to be 34 weeks by dates. The X-ray was also misleading in that a Type I or II was reported, whereas EUA (after 24 hours of persistent haemorrhage) showed a Type IV. The infant delivered by section weighed 6 pounds 9 ounces and died 48 hours later.

Consideration of all these cases shows that the factors which persistently militate against the infant's chances of survival are four in number:

- (1) Pregnancy of less than about 34-weeks duration.
- (2) Maternal haemorrhage severe enough to warrant transfusion.
- (3) Interference or delay by the doctor before admission.
- (4) Persistent haemorrhage in cases of reasonable maturity (34 weeks or later) which fails to settle within a few hours of admission and which may lead to unwarranted delay in treatment.

The first two are more or less unavoidable, the third is completely avoidable. Close attention

to the fourth factor and the avoidance of undue delay seem to be the most promising avenues leading to increased foetal salvage.

THE X-RAY DIAGNOSIS OF PLACENTA PRAEVIA

Since 1951 extensive use of radiology has been made as an aid to diagnosis so that it is worth enquiring briefly into the value of the procedure. From 1951–1952 to 1956–1957 inclusive there have been 169 proven cases of placenta praevia and X-ray help in the diagnosis has been sought in 112 of these. This includes all the cases treated conservatively (i.e., 6 days or more in hospital before delivery) in those years. The cases not X-rayed were those where haemorrhage necessitated active intervention without waiting for X-rays or the clinical diagnosis was so clear that radiology was deemed unnecessary. Radiology was also used in a great number of cases of antepartum haemorrhage which were either not proven cases of placenta praevia or due to other causes. These other cases are not considered here so the figures about to be quoted are probably only a conservative indication of the accuracy of the method. At the same time they will also not indicate the number of false positive radiological diagnoses.

In 95 cases the X-ray diagnosis was correct or substantially so as revealed by subsequent findings at EUA or Caesarean section. In 9 the X-ray was regarded as being either unassessable or unreliable and in a further 8 the report was either wrong or misleading. In this latter 8 was only one case (Case No. 8 above) where the report might have deleteriously affected the infant's chances of survival—by leading to greater delay than was warranted.

These last 8 cases where the report was judged wrong or misleading were subsequently reviewed with the 3 radiologists concerned. In 7 of them it was unanimously decided that it was the man and his experience of the method and not the method itself which was at fault. In the remaining case the radiological findings of anterior placenta praevia of moderate degree (Type I to II) were obviously correct on reviewing the film even to the eyes of a non-radiologist. Yet the findings at EUA and Caesarean section were quite unequivocally

those of Type II posterior placenta praevia. If the method is to be accepted as reliable, and the figures given (i.e., an accuracy of at least 85 per cent, for only proven cases of placenta praevia are considered) indicate this is so, this case can only be explained on the basis of a mix-up of patients or their X-rays. If cases other than placenta praevia and those placenta praevias unconfirmed clinically but demonstrated radiologically were considered as well as the proven cases the accuracy would probably be well over 90 per cent and comparable with those quoted by Watson *et al.* (1957).

One thing which has arisen from the consideration of radiology in the diagnosis of placenta praevia is that the radiologist often has much difficulty in deciding what degree of praevia exists. It is felt that the classification at present in vogue (Type I to IV) is too fine a subdivision. This is not a difficulty confined to radiologists alone of course. In the flurry of cutting through or pushing aside a placenta to get the cord clamped and the baby delivered before it becomes anaemic (Butler and Martin, 1954), the average obstetrician may not give much attention to the degree of placenta praevia and when asked afterwards will often be uncertain whether it was Type II or III or even IV. Also a Type I (which may give rise to quite severe haemorrhage) is not easily felt sometimes by vaginal examination. One which, with the patient not in labour, does not quite reach the level of the internal os by an inch or so and is therefore by definition a Type I, may after some hours in labour become quite definitely a Type II when the lower segment is well retracted. Experience with a recent case in this hospital proves this. The case was diagnosed as a Type I by EUA before the onset of labour; with the cervix approaching full dilatation a further vaginal examination (for possible forceps delivery) showed that clearly it was a Type II.

Our own radiologists (Dr. A. F. Crick and Dr. J. H. Stewart) have resorted to a simpler classification in reporting the presence of placenta praevia:

- (1) Minor (Type I).
- (2) Moderate (Type I to II).
- (3) Major (Type III to IV).

We think this is a much more practical classification especially since it is more in line with treatment, i.e., most of the "minor" cases can be delivered vaginally, a proportion of the "moderate" cases will require Caesarean section, whilst all the "major" cases should be delivered abdominally. It is felt that a return to the older classification of marginal, lateral and central placenta praevia (which is what the above classification is, in effect) could be made with advantage.

DISCUSSION

The management and results of treating a series of 242 cases of placenta praevia over a 9-year period (April, 1948 to March, 1957, inclusive) have been reviewed. Because of the diagnostic criteria used it does not include all cases of placenta praevia seen and treated in that time. At least 61 cases which possibly were examples of placenta praevia have been excluded. Several considerations are worthy of final discussion.

- (a) The conservative approach to the problem of haemorrhage due to placenta praevia, as first definitely propounded by Macafee, undoubtedly gives results as regard maternal and foetal loss much superior to those obtained with the older viewpoint that the condition is an obstetrical emergency. Especially is this so when it is combined with a high Caesarean section rate as regards actual treatment.
- (b) Conservatism must not be carried too far or babies will be lost unnecessarily. Where haemorrhage fails to settle within a few hours of admission to hospital an attempt to delay intervention because of infant maturity is unlikely to succeed. Because of the availability of blood transfusion and operating theatre facilities the safety of the mother is unlikely to be jeopardized but that of the infant is. The 8 cases summarized above seem to indicate this quite definitely. If haemorrhage is still present after 10 to 12 hours and the infant is of reasonable maturity, i.e., 33-34 weeks onwards, its chances of survival, even though premature, are higher if Caesarean section is undertaken without further delay. Only in the presence of extreme prematurity does it seem justifiable to temporize in the face of severe or oft-repeated haemorrhage.
- (c) Is examination under anaesthesia to confirm a clinical and/or radiological diagnosis of placenta praevia always necessary? Experience suggests that it is not and may in fact be most undesirable on occasions. We agree with Watson *et al.* that radiology in this condition is now extremely reliable, so much so that the combination of positive clinical and radiological findings seems sufficient justification for elective Caesarean section where a major degree of placenta praevia has been diagnosed. This policy has come to be accepted as a result of the experience gained in the series, and only when the degree of praevia is thought to be so minor as to justify artificial rupture of the membranes and vaginal delivery, or where clinical and radiological findings are at variance, is vaginal examination in the operating theatre performed. Only twice has this led to possibly unnecessary sections—in both cases, clinically and radiologically, the patient had a major degree of placenta praevia but the sections performed revealed Type I posterior placenta praevia. Despite great care and gentleness vaginal examination sometimes provokes alarming haemorrhage, even in Type I cases, so that it is difficult to justify it where there is good clinical and radiological evidence that a severe degree of placenta praevia exists. The essential thing is to take a balanced view of both clinical and radiological findings and act accordingly. By so doing we do not, as Mills (1957) suggests that Watson *et al.* do, i.e., "decry the value of the traditional examination under anaesthesia" but only wish to remark that it is unnecessary in a fair number of cases.
- (d) There can be considerable difficulty in distinguishing between some degrees of placenta praevia, especially between Types III and IV. As Grant says, there is much to be said for combining the latter into one group. Logically this means, as suggested previously, a return to the marginal, lateral and central classification.

(e) Good results, i.e., zero maternal and low perinatal mortality, in placenta praevia can only be obtained, and maintained or improved, by early diagnosis, late interference, adequate preparation for dealing with sudden or persistent haemorrhage, high Caesarean section rate and the possession of facilities for handling a fair proportion of premature infants.

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