A Review of Cases treated in the Glasgow Royal Maternity Hospital, 1941-1946

A. The Maternal Aspect

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I have the honour and pleasure to introduce the following figures from the records of the Glasgow Royal Maternity and Women's Hospital.

These figures represent a survey, conducted by Dr. Tennent and myself, of all cases of placenta praevia admitted to the hospital in the six-year period 1941 to 1946.

Dr. Tennent will shortly give you his figures and comments on foetal mortality and other points of related interest; I will confine my remarks to the maternal aspect of placenta praevia.

We have divided our cases into two groups—mild and severe, as we consider this distinction essential before attempting any assessment of results.

Mild cases are those in which the placenta did not reach to the edge of (or overlap in any way) the internal os, when the latter was one to two fingers dilated.

The severe group includes all cases in which the placenta was either over the os, or its margin lay within one inch of it.

The mild group therefore corresponds to "lateral placenta praevia," and the severe group includes the "marginal," "complete" and "central" types.

We have not used these common terms, because there does exist some difference of opinion as to their exact meaning, and because, from the practical point of view, the distinctions are often of academic interest only.

Further, as in the vast majority of the cases in our series the condition was ante-partum and the patient not in labour, the os was usually only one finger dilated (or multiparous os) and rarely was it more dilated than two fingers.

The severe cases, therefore, are those in which, in these conditions, placental tissue was easily felt by the examining finger, without anaesthetising the patient.

It is advocated by some that to confirm, indeed to make, the diagnosis of placenta praevia, examination under anaesthesia is essential, the whole hand being inserted into the vagina and the lower segment thoroughly explored.

This was not so in our series, anaesthetic examination being necessary in only 1 to 2 per cent. of the cases in the severe group.

We do not, therefore, believe that examination under anaesthesia should be carried out as a routine measure, as, while minor degrees of low implantation may not be confirmed by ordinary digital examination per vaginam, most of the severe degrees can be thus detected,
and the impalpable minor degrees are of relatively little practical importance.

Uroselectan and Perabrodil were not employed in any of the cases in the series.

This consecutive series consists of 505 cases of placenta prævia, of which 222 were classed as mild and 283 as severe.

With regard to Incidence, no reliable figures can be given, as the hospital incidence is out of all proportion to that occurring generally. Comyns Berkeley's estimate of 1:1000 cases is probably still fairly accurate, and though the hospital numbers have gone up, this is the result of policy rather than a rise in incidence generally.

Parity.—Of our 505 cases, 84 occurred in primigravidæ and 421 in multiparae.

In the former group, 53 were mild and 31 severe cases. In the latter, 169 were of mild and 252 of severe degree.

Apart, therefore, from the much higher incidence of the condition in multiparae, the severe types also occurred much more often than in primigravidæ.

In Age Grouping we found that, in primigravidæ, there were 43 cases in the decade 21 to 30 years, and 31 cases between 31 to 40 years, these two decades together accounting for 88 per cent. of all cases. However, the proportion of severe cases was much increased in the latter age group, i.e. 31 to 40 years.

In multiparae, in the group 21 to 30 years there were 135 cases; in group 31 to 40 years 237 cases; and over 40 years, 49 cases. Again, with increasing age, there was a marked increase of the severe degrees of placenta prævia.

Increasing age, therefore, would seem to be of some importance, though obviously there is a close association between multiparity and the higher ages.

Maturity of the pregnancy at the time of the first bleeding was investigated and average figures worked out. These figures corresponded closely in primigravidæ and multiparae, being 36 weeks' maturity in mild cases, and 34 weeks in severe cases; but considerable range occurred in exceptional cases in each group.

Third Stage Complications are recognised to be of frequent occurrence in placenta prævia. In this series there were 24 cases of post-partum haemorrhage in the mild group, an incidence of 10-8 per cent.; and only 8 cases in the severe group, an incidence of 2-8 per cent. This latter figure is explained by the fact that most of the severe cases were treated by caesarean section, with consequent control of the uterus and immediate completion of the third stage.

With regard to the blood loss, the cases of P.P.H. were classified as follows: 14 cases of moderate degree; 18 cases of severe degree; in all, 32 cases of P.P.H. (6 per cent. incidence). In 8 cases manual removal of placenta was necessary. There were three deaths.
These figures include 4 cases of secondary P.P.H., 3 of which were in the severe group.

**Blood Transfusion**, as distinct from other restorative measures, was employed in 109 cases, *i.e.* in 21 per cent. of the total series, or in almost 30 per cent. of the severe group alone. One patient died of an incompatible transfusion.

Of these 109 cases, in the mild group 12 were given blood antepartum and 9 post-partum; and in the severe group, 81 were transfused antepartum and 7 post-partum.

From the foregoing details it can be deduced that the cases in our series constituted a "mixed bag," with a large incidence of the severer types of placenta praevia. I make this observation before going on to consider, in detail, maternal mortality and morbidity.

**Mortality and Morbidity.**—Firstly, taking the series as a whole, there were 18 deaths, a mortality rate of 3.6 per cent. In the mild group (222 cases) there were 4 deaths, 1.8 per cent. mortality. In the severe group (283 cases) there were 14 deaths, 5 per cent. mortality.

With regard to the causes of death, combining the two groups:

*Haemorrhage and shock* accounted for 8 cases, of which 3 were due to P.P.H.; 3 died of *puerperal sepsis*; 2 died of *respiratory infection*; and 3 died under anaesthesia, on the operating table. In addition one case died (undelivered) of *acute cardiac failure*, and one case died (undelivered) following an *incompatible transfusion*.

In all, 4 cases died "unavoidably," *i.e.* 2 within half an hour of admission to hospital (one case died within ten minutes and one was B.B.O. with retained placenta); one case of cardiac disease, not blood-loss; and one of acute pulmonary oedema, not directly due to placenta praevia.

Deducting these cases, the corrected mortality rates therefore are:

| Type            | Mortality Rate |
|-----------------|----------------|
| Total series    | 2.8 per cent.  |
| Mild group      | 0.9 "          |
| Severe group    | 4.2 "          |

By way of comparison, F. J. Browne quotes the results of eleven teaching hospitals as follows: Total cases, 3103; overall mortality, 5.9 per cent.; partial P.P., 4.4 per cent.; complete P.P., 11.8 per cent. Stratz, employing the method of bipolar version, claimed a mortality of 0.6 per cent. in 173 cases; and Macafee, in 174 cases, a mortality of only 0.57 per cent.

Secondly, with regard to *morbidity*, complications in the puerperium occurred in 69 cases *in toto*, giving an overall rate of 13.7 per cent. In the mild group there were 20 cases, an incidence of 9 per cent.; and in the severe group 49 cases, a morbidity of 17.3 per cent.

These figures include all types of post-natal complication and are therefore somewhat high. Excluding all "non-notifiable"
conditions the *morbidity rates* are: Total series, 10 per cent.; mild group, 5.4 per cent.; severe group, 13.8 per cent.

With regard to the *causes of morbidity* we found that: 17 cases were due to respiratory infection; 8 to puerperal sepsis; 6 to wound sepsis; 3 to localised utero-vaginal sepsis; 6 to urinary infection; 5 to thrombophlebitis; 2 to secondary P.P.H.; 2 to mastitis; and 18 were described as P.U.O. The last were probably of mild infectious origin, but all investigations were negative.

METHODS OF TREATMENT.—The results obtained with different methods of treatment were classified, and the following figures abstracted:

**Mild Group**

| Treatment          | Cases | Deaths (per cent.) | Morbid |
|--------------------|-------|--------------------|--------|
| No treatment       | 120   | 2 (1.66)           | 5      |
| A.R.M.             | 65    | 2 (3.0)            | 6      |
| Packing            | 3     |                    | 1      |
| Version            | 7     |                    |        |
| Caesarean section  | 27    |                    | 5      |

The deaths occurred in the two largest groups and, of these 4 fatal cases, 2 were "unavoidable." The corrected mortality, therefore, is 0.8 per cent. in the "no treatment" group and 1.5 per cent. in the "A.R.M." group, the others being nil.

The choice of treatment in these mild cases does not, therefore, appear to be of first importance.

For comparison, the results obtained in the previously quoted series (F. J. Browne) were: A.R.M., 2.1 per cent. mortality; Willett’s forceps, 3.5 per cent.; version, 0.9 per cent.; hydrostatic bag, 5 per cent. The Willett’s forceps method has never been popular in Glasgow and was not employed in any case in our series. The hydrostatic bag is regarded as a museum piece.

**Severe Group**

| Treatment          | Cases | Deaths (per cent.) | Morbid |
|--------------------|-------|--------------------|--------|
| No treatment       | 4     | 2 (50.0)           | 0      |
| Packing            | 2     |                    |        |
| Version            | 25    | 3 (12.0)           | 4      |
| Caesarean section  | 252   | 9 (3.6)            | 45     |

One death was "unavoidable" in the "no treatment" group, dying ten minutes after admission. One death in the "caesarean section" group was due to the anaesthetic, giving a corrected mortality of 3.2 per cent. Caesarean section, therefore, seems to be easily the best procedure in the severe cases, giving the lowest maternal mortality.

This now brings me to a consideration of the *delayed or expectant treatment* of placenta praevia. Delay is of course undertaken in the interests of the child. Dr Tennent will go into this point fully and will indicate our attitude and our joint conclusions. My present object is merely to try to assess the added risks, if any, to the mother when delay is adopted. It is to be understood that where delayed treatment was undertaken, the patient was retained under close
observation, facilities for transfusion were at hand, and treatment could be instituted immediately.

First, we had to determine what we would class as "delayed treatment." After considering this point from several angles, we decided that we would define treatment as "delayed" in those cases where it was not carried out within twenty-four hours of admission to hospital.

It may be objected that, in so doing, we have included in our delayed group some cases in which the delay was not intentional, and many more where it was unsuccessful.

We considered, however, that as placenta praevia is generally reckoned to be a serious obstetrical emergency, some form of active treatment would be instituted within twenty-four hours of admission unless delay was thought justifiable. Within twenty-four hours every case, even though collapsed on admission, ought to be in a fit enough state for active treatment.

Secondly, we considered that where delay in a case was adopted, and perhaps two or three days later, recurrent or continued haemorrhage made active treatment imperative, then such a case was a failure of the delayed method and should be included as such in the delayed treatment group.

With this explanation of our definition in mind, the figures obtained for "immediate" and "delayed" treatment are as follows:

**Mortality**

**Mild Group**

Immediate—151 cases; 3 death—2.0 per cent.; corrected 0.66 per cent.

Delayed—71 cases; 1 death—1.4

**Severe Group**

Immediate—216 cases; 9 deaths—4.1 per cent.; corrected 3.7 per cent.

Delayed—67 cases; 5 deaths—7.5

The corrected rates shown were obtained by deducting the "unavoidable" deaths, which do not affect the issue here between the two forms of treatment.

There is, therefore, a slight increase in the maternal mortality in the delayed treatment, this being largely accounted for by failures in that group.

**Morbidity**

**Mild Group.**

Immediate—151 cases; 12 morbid—8.0 per cent.; "notifiable"—6 per cent.

Delayed—71 cases; 8 morbid—11.4 per cent.; "notifiable"—4.2 per cent.

**Severe Group.**

Immediate—216 cases; 32 morbid—14.8 per cent.; "notifiable"—12.7 per cent.

Delayed—67 cases; 17 morbid—25.4 per cent.; "notifiable"—18.0 per cent.

In the mild cases, therefore, the morbidity rates were about the same in the two groups. In the severe cases, morbidity rate was considerably higher in the delayed group than in the immediate.
Puerperal sepsis—of the septicæmic type—was, it is interesting to note, confined to the immediate group.

With regard to the methods of treatment employed, there was no indication that any one method was more suited to immediate than to delayed treatment, or vice versa.

In general terms, therefore, these figures appear to show that some slight but definite added risk to the mother ensues when delay in treatment is adopted.

Finally, it may be of interest to note the results from caesarean section in particular, and from the use, in these cases, of general and spinal anaesthesia.

In the mild group of cases, 27 sections were performed with no mortality. In several of these cases, however, placenta praevia was not the condition of primary importance.

In the severe group, 252 sections were performed with 9 deaths in all, a mortality of 3.6 per cent. The overall mortality, in 279 cases, was 3.2 per cent.

The lower segment operation was performed in 9 cases, with one death.

Anaesthesia.—In the severe group alone, spinal analgesia was employed in 82 cases, general anaesthesia in 170. There was one death on the operating table in the spinal series, giving a mortality of 1.25 per cent. There was one death under general anaesthesia, a mortality of 0.6 per cent.

There was one death on the table, in which a spinal had been given but to which chloroform was added because of complaint of pain when the abdomen was being closed. This patient was a primigravida, aged 41 years, and she had a pre-eclamptic toxaemia. Post-mortem, the only notable lesion was "pre-eclamptic mottling of the liver."

I have not included this case in the comparison of anaesthetics, there being a doubt as to which caused death, though personally I would attribute the latter to the chloroform.

Taking into account the deaths occurring after operation, there was only one additional death, from sepsis, in the spinal series. In the general series there were 5 more deaths, 2 from pneumonia, 2 from secondary haemorrhage, and one from sepsis and ileus.

Fatal complications were therefore more common after general than after spinal anaesthesia.

While it is true that general anaesthesia may have been used in some cases where spinal was considered undesirable, the results from the use of the latter do not indicate (contrary to general belief) that spinal analgesia is highly dangerous in the type of case under review.

In concluding, though I have given you some comment and occasionally indicated an opinion, I feel that you must hear Dr Tennent's evidence before any summing up is possible.

I therefore leave our conclusions to be presented by him in due course.