

BLEEDING IN LATE PREGNANCY *

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Throughout the years obstetricians have been faced with bleeding in late pregnancy and have always regarded this sign with grave suspicion and respect. Efforts have been, and are continually being, made to find what the different causes of the loss of blood may be and how this dangerous phenomenon can best be diagnosed and treated. Abnormal bleeding, at any time as a rule heralds formidable underlying pathology. In pregnancy it immediately spells danger to the ex-

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* See references 12-15, 19, 20 and 27.

pectant mother and her baby. In the efforts throughout the years strong characters have laid down strong views, which were often based on sound facts and led to an immediate improvement in results. At times they have based their arguments on grounds which though stated in good faith, have not been quite sound, and then no improvement, or worse results, have followed. It usually takes many years to disprove a generally accepted statement. Fifty years after Jaggard²⁵ dogmatically stated that there was no room for expectant treatment in placenta praevia, Macafee¹⁷ proved that in most cases the reverse was the truth. Inventions and discoveries may also alter the whole approach to a

subject. What held good and true before goes by the board because of a complete change of attitude wrought by almost magical aids. Modern methods of blood transfusion, antiseptics and antibiotics and the great advances in anaesthesia have certainly altered many approaches. Whereas only 2 decades ago Caesarean section was a most serious undertaking, especially when following upon vaginal examinations, at present, with the help of modern aids, very little extra risk is incurred.

Constant watch, however, should be kept that not too much is staked upon these aids, for they may well tend to make the user complacent. They may lead to chances being taken which are altogether unjustifiable,

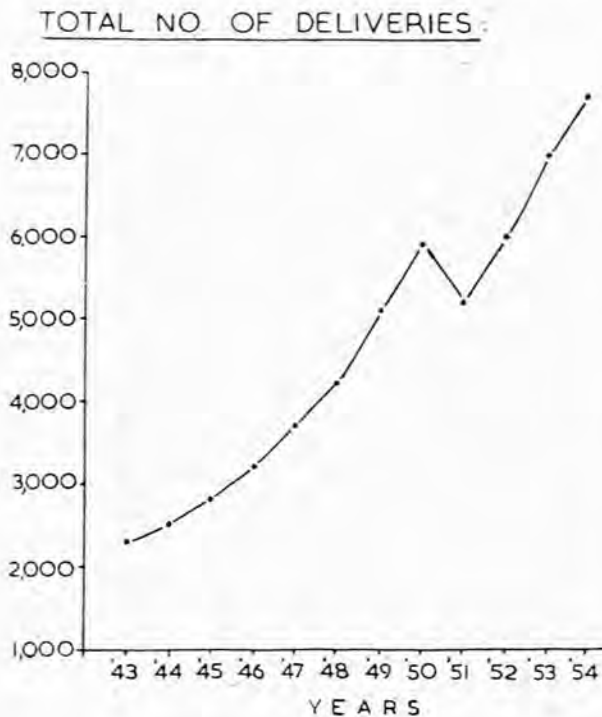


Fig. 1. Graph showing deliveries in the University of Cape Town maternity hospitals.

the worst of these being overcrowding in hospitals. Overcrowding means a more rapid hospital 'turnover', and more patients to the same number of staff might simply lead to inferior work. Fig. 1 shows that, without an increase in the maternity bed state since 1948, 'turn-over' in the University of Cape Town maternity hospitals has increased at a dangerous rate. As the beds are limited in number, the emergency admissions are great. This is the reason why the incidence of antepartum haemorrhage in our institutions is, comparatively speaking, so high.

CAUSES OF BLEEDING IN LATE PREGNANCY *

In the majority of cases the cause is unknown and remains unknown even after delivery.²⁹ Classically, the main obstetrical causes for bleeding late in pregnancy are:

1. *Placenta Praevia*, the result of low implantation of the placenta.

2. *Accidental Haemorrhage*. The cause of the placental separation in this baffling condition is not known. It must be remembered that accidental haemorrhage does not depend upon the situation of the placenta; it can take place whether the placenta is situated in the uterine fundus or in its lower segment. No patient is exempt from the risk of this acute condition in pregnancy. It has a tendency to occur in patients suffering from hypertension, it may be associated with toxæmia of pregnancy, and it may take place 'out of the blue'.

These are the two outstanding causes of antepartum haemorrhage. Other causes, like vasa praevia, placenta circumvallata, polyps, carcinoma of the cervix, varices and acute infections, are mentioned for the sake of completeness. The wary will not fall into the trap of missing causes not directly concerned with pregnancy.

Symptoms and Signs

The classical symptoms of placenta praevia are the age-old painless, causeless, possibility repeated, vaginal haemorrhages, the blood being of a bright red colour. In accidental haemorrhage, on the other hand, the onset of the condition is heralded by severe abdominal pain, which is followed by vaginal bleeding; and usually the blood is dark red. As is obvious, there may be variations in these symptoms. In placenta praevia, should the bleeding coincide with the onset of labour, it may be associated with pain; should the blood escape slowly and pool in the posterior fornix before appearing externally, it will be dark red in colour. In accidental haemorrhage, especially if the placenta is posteriorly situated and the infarction and separation are slight, there may be no pain or minimal pain; if a large sinus or group of sinuses is involved, blood may pour out of the vagina and be bright red in colour. All the intermediate symptoms, varying from the one extreme to the other, may obviously be found. It is almost unnecessary to state that in severe cases of accidental haemorrhage there may be no external bleeding.

The signs in these two conditions are of great interest. Obviously it is our duty to be on the continual look-out for trouble and to take the necessary precautions to prevent it. If a patient receives adequate antenatal supervision, *placenta praevia* should often be diagnosed before any bleeding has occurred (Stallworthy²⁸).

The diagnostic sign of placenta praevia obviously is feeling the placenta vaginally. It must be emphasized that it should be considered the worst possible obstetrics to make a vaginal examination in a patient suspected of suffering from a placenta praevia unless that examination is properly indicated, and then it should only be done in an operating theatre on the patient fully prepared for Caesarean section.

Abdominal palpation may reveal:

(a) A high head which overrides the symphysis—indicating a posteriorly situated placenta. An effort to push the head into the pelvis often affects the foetal heart-rate to a marked degree.

(b) The presenting part may be deflected into one or

other iliac fossa—which may mean that the placenta is laterally situated, occupying the opposite iliac fossa.

(c) It may be difficult to palpate the presenting part—as if a soft cushion is present between the examiner's hand and the part. Obviously this cushion in all probability is the anteriorly situated placenta.

Should any one of these signs be present in a patient who gives the classical symptoms, an excellent pointer to the diagnosis is at hand. Antenatally, however, it is of the utmost importance to note abnormalities in presentation and then to rule out placenta praevia by radiographic measures. Placentography^{1,2} in the diagnosis of placenta praevia has now claimed for itself a very firm place. There is evidence from American and British sources^{9,10,23,24} that the situation of the placenta can be reliably diagnosed in 98-99% of cases. Radiographic studies are obviously invaluable in cases of minor antepartum haemorrhage at about 30-34 weeks gestation. With accurate localization of the placenta many of these patients may be sent home, thus relieving the acute bed shortage and saving the patient the unnecessary anguish and boredom of staying in hospital possibly for 8 weeks.

The severe case of accidental haemorrhage, on the other hand, does not present much of a diagnostic problem. The patient looks shocked and is shocked. The abdomen is rigid, the uterus tender and broad-like. The uterine size as a rule is greater than is warranted by the period of gestation. The foetus cannot be palpated and its heart cannot be heard. The patient's blood-pressure may be within normal limits—which, considering her shocked state, is relatively high. Albumen may be, and usually is, present in the urine, which in turn may be grossly diminished in quantity. All variations in signs, ranging from less severe grades of shock and uterine rigidity to no detectable abnormality and loud foetal heart sounds, are found. Generally speaking, the less severe the condition the more difficult the diagnosis.

TREATMENT

In general it must be emphasized that, should a patient present herself with an antepartum haemorrhage, after preliminary sedation and admission to hospital the first essentials are blood-grouping and Rh typing, and to have compatible blood ready. The main aim in the treatment of a patient with placenta praevia should be directed towards the attainment of foetal viability. Macafee's work has revolutionized the treatment of placenta praevia. For about 50 years the dictum was that there was no place for expectant treatment in placenta praevia. Both Macafee and Johnson proved that with modern aids the reverse was the truth. By following a conservative attitude and tiding the patient over to 36-37 weeks of gestation, fewer mothers are lost and the infant mortality has dropped to as low as 8% in certain centres (Liverpool 1952—Maternity Hospital report). However, immediate treatment is essential if the patient is bleeding or in labour, or both, or if the foetus is viable.

As stated above—in suspected placenta praevia under no circumstances should a vaginal examination be done

at any other time or place than on a patient fully prepared for Caesarean section in a theatre prepared for the operation. To a great extent the situation of the placenta, the bleeding and the labour determine treatment, e.g.:

(a) If the placenta is totally 'praevia', the treatment with few exceptions, is section.

(b) A partial placenta praevia, laterally or anteriorly situated, with no bleeding or minimal bleeding, in a patient in labour with an engaging suitable presentation, necessitates rupture of the membranes followed by diligent observation both for further bleeding and of the foetal heart rate. Should the bleeding persist or

TABLE I. PLACENTA PRAEVIA : TREATMENT

Method	Type 1	Type 2	Type 3	Type 4	Total
Conservative ..	22	9	4	5	40
A.R.M. (with or without Willett's) ..	4	15	3	0	22
Version ..	4	4*	4*	2	14
Caesarean section ..	3	27	57	55	142
Leg brought down ..	0	2	2	0	4
Forceps ..	0	2	0	0	2
Total ..	33	59	70	62	224

* Indicates 1 maternal death.

increase, or should the foetal heart tones indicate distress, Caesarean section is indicated. However, if there be no further abnormality, normal delivery will ensue. Version, application of Willett's forceps, and any other interference, may be of value when in a tight corner, but results hardly justify their employment under any other circumstances. This fact is well demon-

TABLE II. PLACENTA PRAEVIA : STILLBIRTHS

Method	Total No. Treated	Foetal Heart Heard on Admission	Foetal Heart not Heard on Admission	Total No. of Stillbirths
Conservative ..	40	2	7	9
A.R.M. ..	22	7	4	11
Version ..	14	8	3	11
Caesarean section ..	142	11	3	14
Leg brought down ..	4	1	2	3
Forceps ..	2	—	—	—
Total ..	224	29	19	48

strated by the figures for 1952, 1953 and 1954 of the maternity institutions falling under the aegis of the University of Cape Town (Tables I and II).

These figures demonstrate the fact that in 3 years, out of 224 mothers with placenta praevia, 2 were lost. Both were emergency admissions and both had versions performed upon and within them.

Manipulations other than Caesarean section carry with them a very high stillbirth rate. The importance of accurately gauging foetal distress after rupturing the membranes cannot be overstressed. After all is said and done, if the foetus is used to compress its own placenta in order to arrest haemorrhage, obviously by the same mechanism it interferes with its own supply of oxygen.

Two other factors to be kept in mind when dealing with placenta praevia are:

(a) A posteriorly situated placenta, lying over the sacral promontory, diminishes the antero-posterior diameter of the inlet and thus may interfere with labour by producing disproportion, and the foetus, by its passage between placenta and symphysis, may interfere with its own oxygen supply.

(b) When a Caesarean section is done for an anterior placenta praevia, the foetal haemoglobin should always be estimated, for the baby may be anaemic because of the loss of blood incurred whilst the placenta is incised during the operation.⁷

(c) The lower segment operation should almost invariably be done, for bleeding can then readily be controlled by packing²² or ligation of the uterine vessels. The pack may be removed vaginally 12-24 hours later.

Placenta praevia is a formidable complication of pregnancy, and still is the cause of a number of maternal deaths, as will readily be observed from our figures for 1943-54 (inclusive).

TABLE III. PLACENTA PRAEVIA : MATERNAL DEATHS

1943	..	..	..	2	Both non-booked
1944	..	..	..	0	
1945	..	..	..	1	Non-booked
1946	..	..	..	1	Booked
1947	..	..	..	0	
1948	..	..	..	3	All non-booked
1949	..	..	..	2	Both non-booked
1950	..	..	..	0	
1951	..	..	..	0	
1952	..	..	..	2	Both non-booked
1953	..	..	..	2	Both non-booked
1954	..	..	..	0	

From these figures it will be seen at a glance that since 1943, i.e. in 12 years, only 1 booked case was lost; 12 out of the 13 mothers who died were non-booked patients. This alone is adequate proof that every pregnant woman should receive antenatal supervision.

The treatment of accidental haemorrhage can best be tackled by dealing with the most severe type first. For descriptive purposes the grading of cases of accidental haemorrhage according to Page, King and Merrill²¹ is as follows:

Grade 1. Mild cases, with slight external bleeding and possibly slight abdominal tenseness, without associated shock.

Grade 2. Moderately severe cases, with relatively profuse vaginal bleeding, abdominal tenseness and tenderness. No shock is present.

Grade 3. Severe cases, with abdominal tenseness and tenderness. All these patients are shocked. External bleeding may be absent, slight or severe.

Should the patient be bleeding, it is of the utmost importance to note whether the blood clots. The absence of clotting may be indicative of a degree of fibrinogenopenia.^{3,4,5,10,18,26,30}

It is obvious therefore that in dealing with the severe case the first line of treatment should be directed towards shock. In addition to grouping and typing the patient's blood, the fibrinogen level is also estimated. In transfusing these patients fresh blood should be used.¹⁰

Whilst shock is being treated the following details should be observed and recorded at intervals of not less than $\frac{1}{2}$ hour:

1. Pulse rate and blood-pressure readings
2. Measurement of the height of the fundus
3. Girth measurement
4. Whether there is vaginal bleeding and whether the blood clots. Should there be no clotting, estimations of fibrinogen,^{3,4,5,18,26,30} and possibly factor 5, are imperative.¹¹
5. An accurate intake/output chart should be kept. Urinary excretion is of vital importance.

6. A vaginal examination should be made as soon as the patient is comfortable, in order to assess the degree of dilatation of the cervix.

The question whether the membranes should be ruptured naturally is foremost in the minds of most obstetricians today.^{4,8,11,13,15,18,19,26,30} On cold theoretical, non-mechanical argument there seems to be every indication for rupturing the membranes. The liquor amnii, which contains vast amounts of thromboplastin, is thus drained off and thus diminishes the risk of fibrinogenopenia and the fatal or near fatal haemorrhage that may follow in its wake.³⁰ Termination of pregnancy may also be hastened by the rupture of the membranes. Pregnancy should be terminated by Caesarean section in the rare cases in which the pulse rate, girth, or fundal height increases despite treatment. Should the uterus not contract to stimuli, hysterectomy is indicated. However, fresh blood and possibly fibrinogen should be at hand before such radical steps are taken.

Our series of cases of accidental haemorrhage since 1949, according to de Villiers,¹¹ is relatively small but, although it is dangerous to come to any conclusion based upon these figures, they are of interest (Table IV).

TABLE IV. ACCIDENTAL HAEMORRHAGE (1949-54)

Grade	Patients admitted not in labour (83)					Patients admitted in labour (216)				
	Induction of labour or Abdominal delivery		Spontaneous onset of labour awaited:			Induction of labour or abdominal delivery		Spontaneous onset of labour awaited		
	Cases	Deaths	Cases	Deaths	Type of Death	Cases	Deaths	Cases	Deaths	Type of Death
2	14	0	27	3	P.P.H. (2) Oliguria (1)	4	0	111	1	Oliguria
3	17	0	25	1	Oliguria (undelivered)	9	0	92	3	P.P.H. (1) Oliguria (2)
Total	31	0	52	4	P.P.H. (2) Oliguria (2)	13	0	203	4	P.P.H. (1) Oliguria (3)

It will be noted that with rupture of the membranes or Caesarean section not a patient was lost. With our conservative measures, no fewer than 8 mothers were lost—3 from haemorrhage and 5 from renal causes. However, this comparison is not quite fair as 44 cases were dealt with 'surgically' and 255 conservatively.

In the less severe types of accidental haemorrhage, the same precautionary measures should be adopted. In addition, an accurate check should be kept on the foetal heart tones. Whether membranes should be ruptured, Caesarean section done, or the patient treated conservatively, depends entirely on the findings. Summarily it may be stated that the membranes should be ruptured if bleeding persists.

Clotted blood shows that uterine tone has not been lost. Caesarean section should be performed if bleeding persists despite rupture of the membranes, and/or if there are signs of foetal distress. Obviously, if the blood does not clot adequate fibrinogen therapy should be instituted, after due and rapid investigation.

In mild cases the treatment is conservative and circumstantial; i.e., it depends upon the period of pregnancy, whether the condition is progressive, and the possible associated pathology, e.g. hypertension or toxæmia.

Should our antenatal net be well spread, fewer mothers and babies will lose their lives, as is indicated by Tables V and VI.

TABLE V. ACCIDENTAL HAEMORRHAGE : EFFECT ON MOTHERS OF ANTENATAL SUPERVISION

	Grade 2		Grade 3		Total	
	Cases	Maternal Deaths	Cases	Maternal Deaths	Cases	Maternal Deaths
Booked	49	1	25	0	74	1
Emergency	107	3	118	4	225	7

TABLE VI. ACCIDENTAL HAEMORRHAGE: EFFECT ON BABIES OF ANTENATAL SUPERVISION (GRADE 2)

	Alive		Dead		Total
	Cases	Deaths	Cases	Deaths	
Booked	23	26	49
Emergency	35	72	107

CONCLUSIONS

The emphasis of my paper has been on the newer concepts of treatment of placenta praevia and accidental haemorrhage and the basic reasoning in these variations. In placenta praevia the swing has been towards gaining time in order to have more viable babies. The ultimate treatment depends upon the situation of the placenta, i.e. not only how 'praevia' it is but also whether it is anterior or posterior; and whether placental compression is inimical to foetal survival.

Concerning abruptio placentae treatment obviously cannot be dogmatically laid down, because our know-

ledge of this condition is as yet but scanty. Present-day treatment, therefore, depends upon the severity of the condition; mild cases require observation only and the severer cases either membrane rupture or Caesarean section, and the worst cases Caesarean hysterectomy. The possibilities of the development of a bleeding tendency and serious renal damage have to be kept in mind constantly. Fibrinogenopenia can be readily and satisfactorily treated. Oliguria and anuria are still most serious complications, the best treatment of which is prevention.

It is evident that good antenatal supervision will minimize the incidence of accidental haemorrhage and its complications, as well as do much towards saving the lives of many infants and mothers in whom the placenta is 'praevia'.

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