

## PLACENTA PRAEVIA

BY

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Madam President and my dear colleagues, it is in fitness of things to discuss the subject of Placenta Praevia, which, I am sure you will agree, is one of the catastrophes in later months of pregnancy, which is always a cause of great concern to the Obstetrician and to general practitioners.

This condition was first correctly described by Portal in 1683, although Schachar in 1709 was the first to demonstrate on dead subject the real anatomical relation of Placenta with Lower Uterine Segment. Placenta Praevia implies cases where Placenta is partially or wholly attached to the dilating zone of uterus and as such it is now a settled fact that bleeding here is unavoidable in later months of pregnancy. This condition was recognised as early as in the days of Hippocrates. In the present series I have not yet come across a case of Placenta extending into the cervical canal proper. In the present series it is 10 times more common than Ablatio Placenta (Accidental Antepartum Haemorrhage) amongst cases of haemorrhage in later months of pregnancy. Thus it is not only a very common cause of Antepartum Haemorrhage but many cases of abortions and miscarriages are due to low implantation of Placenta—the

more central or complete the degree of Placenta praevia, the earlier the haemorrhage occurs.

*Classification:* Regarding the classification of varieties of Placenta Praevia there are differences of opinion and I personally prefer and have followed in this review the classification of Prof. Browne and Macaffe.

(1) 1st degree—i.e. greater part of the placenta is in upper uterine segment and only lower margin dips into lower uterine segment (Lateral).

(2) 2nd degree—The edge of the placenta reaches the internal os (marginal).

(3) 3rd degree—Where placenta covers the internal os, but does not cover it completely when os is fully dilated.

(4) 4th degree—When placenta completely covers the os even when os is fully dilated—very rare.

In this classification first and second are lateral and marginal and central or complete has been divided into two groups thus removing the confusion of older classification.

*Incidence:* Estimating on the basis that only cases in which haemorrhage started during or subsequent to 7th month, the incidence has been 1 in 164, whereas reports from other Hospitals in Calcutta show 1 in 83, in Bombay 1 in 125, in Madras 1 in 166, in British Isle 1 in 90, in America 1 in 200, in Rotunda 1 in 217.

**Parity:** In this series only 10% were in Primigravida, no individual pregnancy has escaped and neither showed any remarkable increase in incidence. In this connection I may mention Sir Commyns Berkeley's series, where he has shown that Placenta Praevia occurred more often in the first than in any other individual pregnancy, i.e. about 20.1%.

**Age incidence:** In this series—Between 40 to 35—4.3%, 35 to 30—60.9%, 30 to 25—26.2% and less than 25—8.6%. Thus the largest were between 30 to 35 years of age.

**Incidence regarding type:—**

1st Degree:	34.8%
2nd Degree:	30.5%
3rd Degree:	34.7%

**Etiology:** Placenta Praevia originating from Decidua Reflex was first described by Robert Barnes in 1858 in his book "The Physiology and treatment of Placenta Praevia", afterwards by Hoffmier and Kaltenback and later on confirmed by Clearance Webster.

Recently primary and secondary isthmal implantation has been discussed fully by Newman and Luh. It is likely that the ovum failing to implant in the upper part has attained a stage of development when it reached the lower part where possibly the mucosa was well developed for embedding of the zygote.

Certain factors predispose, i.e. Big Placenta, Placenta Membranacea, Twin Pregnancy, etc. Age, about 60% of the cases were between 30 to 35 years.

**Abnormalities in Placenta:** A few abnormalities met with are—Placenta Membranacea, Placenta Velamentosa, Placental infarcts, and

tough fibrous tissue overhanging the os; other types on record are, Placenta Bipartita, Succenturiata, Fenestrata, Horse-shoe shaped placenta and placenta Acreta.

Regarding foetal abnormalities, none of the cases showed any development anomaly, though of course, it is said to be about 3% in literature.

**Symptomatology:** There is only one symptom common in every case and that is visible haemorrhage. The cause of this haemorrhage is nowadays a settled fact, that painless contractions during pregnancy cause stretching of Lower Uterine Segment amount comes from the placental separates from uterine wall opening the placental sinuses and thus bleeding starts.

**Sources of the blood:** Mainly one, that is the blood sinuses of lower uterine segment. Sometimes some amount comes from the Placental tissue from rupture of the circular sinus around the placenta and rarely from rupture of umbilical vessels in velamentous attachment.

**Time of onset of Haemorrhage:** In this series, the majority had their first haemorrhage between 32 to 36 weeks of pregnancy—a few cases were met with at term and a number of cases also between 28 to 32 weeks. There can be no hard and fast rule in any particular variety regarding the time of onset of haemorrhage. Quite a number of cases of bleeding at 20 to 24 weeks are due to low implantation of placenta. In the series of Glasgow Maternity Hospital and of Sir Commyns Berkeley's series the first haemorrhage occurred from 20th to 40th week, though the maximum number was between 30 to 35 weeks of pregnancy and at 40th week. Pan-

know reports only 5% of cases who reached full term, when first bleeding began. It is interesting to note that Central Placenta Praevia quite often reaches full term without any symptom, with cervix closed, and then first bleeding starts.

*Amount of First Haemorrhage:* In the majority of cases, first haemorrhage was a mild one, not severe enough to make them anaemic and seek admission in the Hospital. It is unfortunate that the majority of cases were emergent cases and none of them had any antenatal supervision. Most of them had sought admission after the onset of second haemorrhage. This first haemorrhage is called "Warning haemorrhage". More commonly it is not severe but only a few ounces—in some cases a few drops of blood—but there are records where the first haemorrhage had been so profuse as to cause great anxiety. The first haemorrhage stops apparently only to recur very soon—a point to be remembered by general practitioners, on whom good many lives depend. After stoppage of haemorrhage, sometimes there is exudation of blood stained serum indicating blood clots in Lower Uterine Segment or vagina. This haemorrhage appears as a bolt from the blue—patient is fully ignorant of the malady—perhaps she had been enjoying sleep and then gets up to see her clothes soaked with blood from vagina, without any pain and cause for her to explain. I, on occasions, had been called to see patients lying in a pool of blood at midnight. Thus the haemorrhage is widely known as painless, causeless and recurrent haemorrhage. Subsequent haemorrhages are inevitable—it is only a

question of time. In some, it may be a question of a few hours, and in others, it may be some days, while in another, it may be weeks interval. Subsequent haemorrhages are usually more profuse and, being superimposed on a pre-existing anaemia due to first haemorrhage, result in high grade anaemia with palor, small rapid pulse, cold clammy sweats, accelerated respiration, etc., causing great anxiety both to the patient and to the attendant.

In 10% of the cases there were associated pictures of pre-eclamptic toxæmia, though albuminuria, hypertension, toxæmia, chronic nephritis are common features of accidental haemorrhage.

*Signs:* General appearance—All the cases were admitted with varying degrees of anaemia, depending upon the amount of blood lost outside, and also upon pre-existing anaemia from malnutrition and underlying chronic diseases as malaria and kala azar, etc. From the history it was evident that some of them were quite healthy when first warning haemorrhage started, which was mild and which stopped spontaneously but, due to ignorance, social conditions and conditions known to them only, they neglected and took admission in hospital when second haemorrhage started, and the bleeding was profuse enough to make them lie down in bed. Albumen in urine was found in 15% of my cases.

*Local abdominal findings:* None of the cases showed signs of concealed haemorrhage. In 40% the uterus was quite soft and flabby and foetal parts were distinctly palpable and foetal heart sound audible. Only in two cases admitted in moribund state

the foetal heart sound could not be heard. There was no alteration in uterine souffle. Regarding presentation and position of the foetus 73.9% were vertex, 17.4% were breech and 9.7% were shoulder presentation. In a few cases head was well engaged and later on the cases were found to be placenta praevia of the first degree and placenta was attached anteriorly more on the right side. In the majority of cases, head was found floating, and as if something preventing it from descending through the brim, and on two occasions I felt something displacing the presenting pole to one side and on a very careful palpation a soft mass above pubes was felt intervening "Like a wetted bath sponge" as mentioned by Spencer. On vaginal examination it was confirmed that it was a 2nd degree of placenta praevia with placenta attached to anterior wall.

*Findings on Vaginal Examination:* Cervix soft, boggy feeling in the fornix and pulsation through fornix due to excessive vascularisation, the presenting part was well above except in those cases where the head was deeply engaged and feeling of a spongy, soft mass between the presenting part and the examining finger. Of course, the most positive sign is passing the finger through the cervix and feeling the peculiar soft spongy fibrous placental tissue either at the os or at the margin or up in lower uterine segment; one has to differentiate this from a blood clot which breaks between fingers.

*Diagnosis:* Diagnosis as such in most cases is not difficult because in them there is the typical history of painless, causeless and recurrent

bleeding in the last trimester of pregnancy and the cervix also is slightly dilated, to admit a finger and the placenta is felt. But at the same time there are cases pretty common where first haemorrhage is mild and os is closed, specially in primigravida, and it has been on record that in 30% of cases at the time of first haemorrhage the os is closed, and in cases of 1st degree of placenta praevia with head deeply engaged, the diagnosis is not so simple. While taking up a case of haemorrhage in later months of pregnancy the other causes should also be taken into consideration, i.e., the next common is Accidental Antepartum Haemorrhage (Ablatio Placenta) and also bleeding from places other than the placental area, i.e., polyp, rupture of varix, rupture of umbilical vessel of velamentous attachment or Vasa Previa and rarely of course carcinoma of cervix.

The question now arises how to suspect a case to be Placenta Praevia before any symptom antenatally—it is difficult indeed to answer, but regular practice of feeling the lower pole of uterus antenatally will detect a soft spongy mass, i.e., placenta if in the anterior wall preventing the foetal part from descending and often pushed to the side. Then in a case of primigravida, if the head does not engage at a time when it should have engaged, and if other causes can be excluded by proper examination, a soft tissue radiography is worth doing. Lastly four very important questions arise while facing a case of haemorrhage in later months of pregnancy regarding vaginal examination as because I think this single vaginal examination is enough to turn the prognosis to the worse side.

(1) Shall a vaginal examination be made? (2) Who are the persons fit for a vaginal examination? (3) Where should it be done? (4) How should it be done?

For the first question—my answer is yes—a vaginal examination is necessary to arrive at a correct diagnosis, though I have already mentioned certain difficulties in diagnosing in this way.

For the second question—strictly speaking only trained personnel capable of dealing with the case are fit for vaginal examination, in other words general practitioners should not make a vaginal examination only for the sake of diagnosis.

For question No. (3): This vaginal examination should be done in a hospital or a similar institution where it will be possible to have proper assistance and facilities and to take complete aseptic and antiseptic measures and to meet the emergency that may crop up. Then for question No. (4)—The answer to the question is—my practice is first to take blood and send for grouping and for blood from Blood Bank, and in the meantime, getting ready with saline and glucose, and then keeping everything ready for vaginal route treatment as also abdominal route treatment; after preparing the patient thoroughly and getting her under general anaesthesia, I make a thorough internal examination. However, now-a-days Radiography is becoming popular. One would really feel happy, when this Radiography will give accurate result and when it will be easily available, cheap, less cumbersome and risky to the patient and foetus inside. This will dispense with vaginal examination which is highly dan-

gerous, and also a correct diagnosis will be made in confusing cases. The following methods are now in practice:—

(1) Amniography—Taking out equal quantity of Liquor amnii and then injection of uroselectal B or something like it directly into the amniotic cavity—modified by Munro Kerr and Mackay.

Their opinion about this method—“Notwithstanding the difficulties, we have found this method to be of real diagnostic value in some selected cases. Caution must be observed, as premature labour or death of the foetus may occur. The use of this method, therefore, is not justified in every case of suspected placenta previa and should not be employed before 36th week.”

(2) Erhardt's Thorium Placentography—Thorium is contradicted in human subject because of its fixation in the reticulo endothelial system and its radio-activity.

(3) Cystography and air radiography is helpful.

(4) Lastly the harmless method and most recent one is the soft tissue Radiography or straight Radiography, i.e., direct visualisation of placenta. Pioneer workers on this are Snow and Powell, and subsequently Dippal, Buxton, Hunt, Potter Allen and others have claimed quite convincing results. But Chassar Moir from his investigations is more cautious in his pronouncement as to the reliability of “Straight Radiography” in respect of locating the site of placenta.

*Effect of Placenta Praevia on Pregnancy, Labour and Puerperium:*—I shall only mention here those I have come across in practice, i.e., (1)

various grades of anaemia, (2) premature labour, (3) Abnormal presentation and position about 27.1%, (4) Uterine inertia and exhaustion, (5) Delayed dilatation of cervix, (6) Post Partum Haemorrhage, (7) Sepsis, (8) Still Births.

*Prognosis:* We know that antepartum haemorrhage ranks fourth as a cause of maternal death, in short, prognosis is unfavourable for mother and worse for the foetus. On the whole I can say the present day picture is far better than what it was in the past in our country, say about 20 years ago. Now-a-days with increased mass consciousness, educational propaganda and hospital mindedness and co-operation from public, and a very important fact, viz., the increased facility for blood transfusion and Chemotherapy combined with improved skill of the attendant, I believe, the prognosis is not as bad as it was regarding maternal deaths. Even then I have no hesitation in admitting that we are still far behind if we look at the statistics of Great Britain. Prognosis depends upon various factors. The comparative poor results in our country are due to the fact that frequently we have to deal with cases whose vitality is already lowered from pre-existing condition, such Tropical diseases like, malaria, kala azar, diarrhoea, anaemia, malnutrition, avitaminosis, etc. These patients do not stand the effect of haemorrhage and shock well and fall an easy victim to sepsis. Other factors such as social customs and prejudices prevalent in the country prevent them from timely hospitalisation and institution of treatment. A majority of these, as I have already mentioned, seek help quite late. It is painful to

admit also that at times sufficient quantity of blood and plasma is not available in our place and frequently we have to depend upon salines and glucose. However, other factors that influence the prognosis are equipment of the institution, skill of the attendant, degree of placenta praevia and the post-partum haemorrhage, uterine contractions, infections, etc. Maternal mortality in my hospital due to placenta praevia as a whole had been 17.4%. If the cases admitted in moribund state, where the treatment could not be carried out be excluded, the figure comes down to about 8.5%. The cause of death in all of these cases was effect of haemorrhage, i.e.; anaemia and sepsis. Average mortality in Calcutta is about 11% which is pretty high and the reasons I have already expressed. Morbidity had been appallingly high, i.e., about 48.5%. Regarding foetus, average still birth was 38.8%. Other than this there were a few neonatal deaths due to prematurity. It must be admitted that Caesarean Section has improved the prognosis for both mother and foetus. Cases, who are badly handled outside, not only come in most precarious state of anaemia due to bleeding but also with all grades and sources of infection. Prof. Browne writes thus "The outlook for both mother and foetus would be considerably improved if patients were sent early to the hospital and specially if they are neither examined, packed nor otherwise interfered with before admission."

*Treatment: Expectant treatment:* The success of Macafee of Belfast and recently of Dunean of Aberdeen have proved that expectant treatment has

a definite place in the treatment of Placenta Praevia. It can be considered a definite advance in the management of cases with Placenta Praevia, thus encouraging not only to think about mother but also think about the foetus whose life did not receive adequate consideration in the past. The patient is put to bed and adequate sedatives and hypnotics are given, an injection of Morphine gr. 1/4 hypodermically. When bleeding stops, bed rest for one week is given and then the patient is allowed to get up for a short time daily. If haemorrhage occurs again, restriction to bed, the foetus in the meanwhile continues to grow. He advocates not to give up the conservative treatment as long as mother's good condition is maintained by iron therapy and blood transfusion. We at the same time must bear in mind that this line of treatment has its limitations and entails a considerable risk to mother and child and heavy responsibility to all the attendants concerned. Before undertaking this line of treatment we must carefully select the case—Patient must not be in labour, duration of pregnancy less than 35 weeks, bleeding per vaginum slight. A point of caution must be mentioned that this treatment must not be carried out in a private house; it should be done in a well equipped hospital or maternity home where not only medical help but also skilled personnel, competent to do any major operation including caesarean section in a short time, are available; the nursing sister should be explained the gravity of the case and must be made to understand the need to send an urgent call if bleeding or labour pain starts.

*Caesarean Section:* Caesarean Section was first performed by Lawson Tait as early as 1890 for placenta praevia and was referred to as "The last resource of great Surgeon who had forgotten his obstetrical training".

Nevertheless its result, both for mother and specially for foetus has made it so popular now-a-days that Munro Kerr writes "The question in the minds of many obstetricians today is not under what circumstances Caesarean Section should be employed for Placenta Praevia, but rather under what circumstances the operation need not be employed for this complication". Mackenzie from his collection of 22,165 cases from all over the world has arrived at a conclusion that abdominal section gives the best result. But it must be admitted the result varies. If we look at the statistics from 1926 to 1945 we find that after Caesarean Section the mortality is only 1.7% and foetal only 6%, whereas in vaginal route delivery, maternal mortality is 4.4%, and foetal 50%. Thus it goes without saying that in the interest of the foetus, Caesarean Section is best for all types and also in certain types of cases, e.g., in Central Placenta Praevia it is best for the mother. Incidence of Caesarean Section varies from 78.8% by Bill in 1931, and Sturrock 32.4% in 1947. In my practice it is about 25.2%. The following are the cases of Placenta Praevia where I performed Caesarean Section:

- (1) Elderly Primigravida, (2) All cases of Central Placenta Praevia, (3) Multipara with non-dilating cervix, (4) Cephalo-pelvic Disproportion, (5) Relative importance of the life of

foetus. When Caesarean Section is performed to a great extent for the interest of the foetus, the foetus must be X-rayed to exclude malformations because it is said that in about 3% cases foetus is malformed. While choosing Caesarean Section as a line of treatment we should consider also the possibility of weak uterine scar—so I think in young women it should be carefully weighed before performing the operation.

Now the question is whether classical or lower-uterine segment Caesarean Section:—Lower Uterine Segment Caesarean is fast becoming popular and they say that large bleeding vessels in placental area are the frequent site of troublesome haemorrhage and which become easily accessible. Whereas those who favour classical Caesarean Section are satisfied with its results. Personally I am happy with my result at classical Caesarean Section.

*Vaginal Route Treatment:* The majority of my cases as the figure shows, I have treated per vaginum. I also adhere to the four cardinal principles: (1) Stop Haemorrhage, i.e. "save blood", (2) To effect delivery, (3) Prevent Post-Partum Haemorrhage, (4) Treat shock, collapse and anaemia, i.e., effect of haemorrhage.

In all cases, first I send the blood for grouping and get blood from the Blood Bank whenever possible, otherwise salines and glucose are kept ready as usual, and make a vaginal examination in the way I have already mentioned and then select the case and proceed accordingly. But cases come where a patient has lost so much blood that further examination would be too

dangerous, then of course, first I treat the collapse as usual and then, when the patient improves in her condition, I proceed with active treatment. The following are the methods of treatment I have usually adopted. (1) Rupturing the membrane low—this operation was first done by Smith, result is quite satisfactory provided the case is properly selected. It is in the first degree (lateral) or second degree (marginal) with soft dilating cervix and patient in labour and there is bleeding P.V. I usually rupture the membrane low with a long sharp pointed instrument as otherwise membrane will be lifted up if it is tough and cause separation of placental villi and brisk haemorrhage will start. After rupturing the membrane I give abdominal binder. In some cases where the cervix is  $\frac{3}{4}$ th dilated uterine contractions are weak, after rupturing the membrane and giving abdominal binder I usually inject Pituitrin 2 to 4 units I.M.—the bleeding not only stops but labour ends spontaneously without any complication. In cases of associated breech presentation—after rupturing the membranes I usually bring down one leg and leave it; no further traction because I have found traction in the leg leads to various complications as tearing of cervix and increases the incidence of stillbirths, whereas if simply left as such not even putting any weight results are very satisfactory.

*Willet's Scalp Forceps:* I have used in cases where, after rupturing the membrane in vertex presentation and giving abdominal binder, the bleeding does not stop. I usually put  $1\frac{1}{2}$  lb. weight. Regarding the

mother it gave me satisfactory results but regarding the foetus the mortality had been pretty high, about 50%. In none of my cases there developed Bacillus Welchii infection. Prof. Browne has already abandoned this method in his unit since the occurrence of Bacillus Welchii infection in two of his cases. Findlay's statistics of results of Willett Forceps application are as follows:

Central: 15 cases with maternal mortality 6.6% and foetal mortality 100%. Marginal: 143 cases maternal mortality 4.89% and foetal mortality 55%. Lateral: 86 cases with maternal mortality 3.48% and foetal mortality 48%.

*Plugging the vagina:* I do not do, nor do I advise, though Mr. Leonard Phillips recently reported results of 59 cases with vaginal packing at Queen Charlotte's Hospital with maternal mortality of 2 cases and foetal 39, i.e., 66%. Most of the obstetricians today, with the exception of a few, criticise bitterly its use in this complication, not only for high foetal mortality but also renders the mother's condition worse for further treatment and frequently makes the visible haemorrhage into a concealed one, and lastly great danger of infection.

*Version:* I usually perform external Podalic Version and then rupture the membrane and bring down one leg and leave it. I am satisfied with my results. Thus I prefer it to Bipolar Podalic Version of Braxton Hicks where I find that there is possibility of more haemorrhage due to injury of placental area during manipulation through the cervix and through the membrane and more chances of shock and sepsis in future.

Greenhill, in year book of Obstetrics and Gynaecology 1945, has strongly condemned Bipolar Podalic Version in Placenta Praevia. When os is fully dilated, Internal Podalic Version is very easy. Regarding result as far as maternal mortality is concerned, brilliant results have been obtained by Statz, 110 cases with only .9% mortality and by Macafee and Sturrock 23 and 33 cases respectively with no maternal death, but regarding the foetus mortality is alarmingly high varying from 64% to 100%.

A fact worth repeating that this line of treatment of Placenta Praevia by version and bringing down one leg is continuing for generations since the days of Ambroise Pare. Munro Kerr remarks "It is today and will always be the sheet anchor for practitioners in all countries and climes who, far removed from a maternity hospital, are called upon to treat this grave condition".

*Spontaneous Delivery* also occur quite frequently unaided. These are mild cases where bleeding is not profuse and the uterine contractions are powerful. Sometimes there is separation of whole of the placenta from lower uterine segment and the placenta is delivered first (Ablatio Placenta Praevia) and the foetus follows. On two occasions I met with this type of complications.

*The use of Hydrostatic Bag or De Ribe's Bag*—I do not use nor do I advise. The bag has been kept in the instrument cupboard for demonstration purposes, and it is not used in any hospital in Calcutta. British Obstetricians also do not support its use, but it enjoys great reputation in America.

*Third stage of labour:* Third stage of labour must be managed very carefully, because bleeding at this stage which in other cases would have been simple, will be lethal to a case who has already lost blood in the first stage due to placenta praevia. Moreover as the lower uterine segment is passive in function, power of contraction and retraction is less than upper uterine segment, there is every possibility of post partum haemorrhage. So every preparation for stopping the haemorrhage must be ready and if there is bleeding, no time should be lost to stop it, as good many cases end fatally. If the placenta is not expelled and if there is bleeding, it should be expressed at once and failing this remove manually without delay. Finally the bleeding may be stopped by bimanual compression, pituitrin, Ergometrine and if necessary plugging.

I thank you ladies and gentlemen for your kind and patient hearing and before I take my seat I would repeat the excellent axiom laid down by De Lee that "No woman with placenta praevia should die except in very rare instances of air embolism, haemorrhagic diathesis and spontaneous rupture of uterus."

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