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# THE Journal of Obstetrics & Gynaecology of India

VOL. VI NO. 1

SEPT 1955

## ANOMALIES OF THE THIRD STAGE OF LABOUR

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Before attempting to discuss the abnormalities of the third stage of labour, I would like to visualise Nature's mechanism of this stage of labour.

The phenomena of the third stage are: (1) characteristic uterine contractions, (2) control of haemorrhage, (3) separation of the placenta, and often (4) the physiological chill. After the completion of the second stage the uterus may be palpated in the hypogastrium and should resemble a firm, round ball-shaped body, and more or less tonic as well rhythmic contractions should be present, although the latter are not necessarily felt by the woman as "pains". The hardness of the uterus varies at this time and after the expulsion of the placenta, but the risk of haemorrhage is not necessarily great, unless there is much relaxation between the contractions, or sudden gush of blood occurs during and between the contractions. The average loss of blood, in a well conducted third stage, should not exceed 10 ozs.

The above phenomena are fortunately found in about 95 per cent of

normal or spontaneous labours, and perhaps in 5 or less per cent of labour cases some abnormality may be met with, because the duration and the normal mechanism of the third stage sometimes depends on the duration and the nature of the first and the second stages. When these two stages have a normal course, it is but fair to assume that the third stage will be uneventful. These being the accepted facts, I wonder if in the remaining 5 or less per cent of labour cases there can be real abnormalities.

The line of demarcation between normality and abnormality is, unfortunately, very narrow and one is often surprised to find a would-be normal case getting delayed or arrested. Time limit and thumb rule are much of the past. No two labour cases need be alike, but each must be treated on its own merits. A careful and intelligent antenatal supervision will, I feel, save many of our disappointments. I shall return to the antenatal care later on.

Perhaps it will not be out of place to consider briefly the pathology of the third stage of labour, such as: anomalies of powers, of the passage and the passenger, superadded on

Paper read at the Eighth All-India Obstetric and Gynaecological Congress held at Bombay in March, 1955.

which we sometimes find complications, especially on the part of the mother, some occurring during the third stage, but, mostly carried over from the first and the second stages. In anomalies of power we have too strong uterine contractions (rare), too weak contractions (atony), more common, hour-glass contractions, insufficient retraction of the uterus, general or local, the latter either at the placental site at the fundus or in the lower uterine segment. Under anomalies of the passages I would place those conditions produced by spasm of the cervix, causing retention of the separated placenta. Anomalies of the passenger (placenta), such as tumours of the placenta, are very rare, but they almost never cause dystocia. Abnormal adhesions of the placenta to the uterus (placenta accreta) total, rarely partial, that lead to the leaving of pieces of placenta attached to the uterine wall, cause severe post-partum haemorrhage. Broad, thin placentae separate from the uterus with more difficulty than thick ones, and the same may be said of the soft and hard placentae. Those situated in the tubal cornua seem to stick firmer than those in the lower segment, which occasionally are loosened from their bed during the passage of the child and are extruded immediately after the birth of the child.

Tears in the passage such as lacerations (of the cervix, vagina and vulva) often disturb the third stage of labour, causing haemorrhage, and many other dangers threaten the parturient. Syncope and shock, embolism and bad effects of prenatal toxæmia may also be met with.

Bleeding is the main symptom of all abnormalities of the third stage.

With these introductory remarks, I shall now venture to express my views on anomalies or abnormalities of the third stage.

I should like to divide them into two classes:—

*Class 1.—Real*

- Due to (a) Uterine anomalies  
(b) Placental anomalies  
(c) Blood dyscrasias and anaemias  
(d) Embolism

*Class 2. Pseudo—real*

- Due to (a) Retained normal placenta  
(b) P.P.H.  
(c) Inversion  
(d) Injudicious use of oxytocics  
(e) Some lacerations causing haemorrhage

CLASS 1. (a) *Uterine anomalies*, such as arcuate or cordate, septate and double uterus may cause surprises. Abnormal uterine contractions may cause retention or incarceration of the placenta in one of the cornua or one of the sides of the septum. There may not be intermittent bleeding in between contractions. In case of double uterus the expulsion of the placenta may be arrested by the other uterus pressing on the cervical canal and the accoucheur who does not consider the possibility of this anomaly may be at a loss as to how to proceed.

(b) *Placental anomalies* may be of size, form, number, relation and insertion.

*Size; Atrophy.* By this term is meant simple qualitative atrophy

and not diminution of size, which is secondary to inflammatory affection. There is a tolerable definite relationship between the foetal and placental weight under normal conditions, which is expressed by 5.5 to 1. When an otherwise normal placenta is of smaller size a condition of arrested development is present. I have failed, so far, to know the causes of primary atrophy which is seen alike in the ill-nourished and the robust.

*Hypertrophy.* Simple hypertrophy is the opposite of the condition described, the placenta being increased in area and thickness although of normal quality.

*Placenta Membranacea.* This rare anomaly represents a placenta which extends over a greater or even the whole of the chorionic surface. The expanded structure is correspondingly thin and membranous in texture. This anomaly generally complicates the third stage of labour by retention or actual adhesions, resulting in haemorrhage. Fortunately it is rarely encountered in practice.

*Form.* These are best considered collectively. The principal aberrations in shape of the placenta are as follows:—(a) lobate placenta, in which the organ is divided into two or more lobes, (b) horse-shoe placenta (*placenta reniformis*), (c) fenestrated placenta, characterised by one or more solutions of continuity in the substance of the organ through which the chorion is visible, (d) annular placenta, which extends about the uterine cavity like a belt and *placenta velamentosa*. Clinically, all the preceding placentae cause disturbances

of the third stage of labour, through partial detachment and retention.

*Numbers.* These represent apparently a higher degree of the process involved in the genesis of the preceding class. Generally speaking they are supernumerary or accessory placentae. In these, subsidiary structures contribute to the nourishment of the foetus; they are termed *placentae succenturiatae* or known as false placentae. As many as six of these accessory organs have been found in a single uterus. These anomalies may cause serious complications of the third stage of labour.

*Relation.* By this term is meant the anomalies or relations which may exist between the placenta and other foetal appendages (membrane and cord). *Battledore placenta* is a placenta in which the cord has a lateral implantation. *Placenta marginata*, *placenta circumvalata*, when the chorion leaves begins within instead of at the border of the placenta; this necessarily exhibits a free margin and is known as *marginata*. When the chorion forms a rigid annular fold at the inner limit of the margin, we have *placenta circumvalata*.

The clinical significance of these anomalies are two-fold. (1) The amnion and the chorion may be torn from the placenta and left behind. (2) The complication produced by this anomaly, such as incomplete detachment, retention and atonic haemorrhage, are frequently encountered here.

(c) *Blood Dyscrasia.* Haemorrhagic diathesis or latent hemophilia may surprise the accoucheur during the conduct of the third stage of labour. The bleeding may start imme-

diately after the birth of the child, during and after the placental expulsion. The haemorrhage may prove fatal if active treatment with blood coagulants, infusion of fluids and transfusion of blood, is delayed. Similarly, anaemic patients may have a very bad haemorrhage which may be difficult to control.

(d) *Embolism*. It is one of the most serious accidents which may occur at the beginning of the third stage. Amniotic embolism commonly occurs during the first two stages, but may be met with in the third stage. Unfortunately this tragedy cannot be diagnosed in time, and the prognosis is grave.

CLASS 2. I call this class pseudo-real as I feel that all the anomalies mentioned in this class are the results of sins of omission and commission by the accoucheur. Take for instance (a) retention of a normal placenta. How many times have we not been called by our R.M.O.s to attend on cases of "retained placenta"? Perhaps it took one or more hours before we got to the hospital, and what did we do? We kneaded the uterus and expressed the placenta, after its separation, directing the pressure backwards and downwards along the direction of the parturient canal. It may sound like magic hands, but was there any magic? The tired uterus needed rest, but the premature massage or kneading and the faulty hurried expression of the placenta exhausted the uterus further. It had enough time to recover its tone by the time we got to the hospital and the placenta had separated and was lying in the cervical canal. How

many times have we not been called to remove an adherent placenta? As there was no bleeding, we tried to inject normal saline through the cord, the uterus contracted and the placenta separated, but, if we had not left it alone for hours, so long as there was no bleeding, to allow the atonic condition of the uterus to pass and when the uterine contractions started the placenta was expelled normally. Placenta accreta and increta cannot be detected during the third stage of labour. With intermittent bleeding every retained placenta must be manually removed and the haemorrhage controlled by all methods possible. An intravenous injection of methergin or ergometrine should, ordinarily, bring about strong uterine contractions to control the haemorrhage. And what about post-partum haemorrhage, inversion of the uterus, tonic uterine contractions, lacerations, etc.? The answer is obvious.

In a healthy primipara the labour may, at times, be precipitate and, I admit, it may cause bad lacerations before the accoucheur could take any preventive measures. I remember, among others, a case in a hardy primipara in which the head was born through the anus instead of the vagina (posterior colporrhexis). But such cases are very rare.

(b) *Inversion of Uterus*. In a well conducted hospital, inversion of the uterus is very rare. Bram states that in 25,000 labour cases he did not see one, and in Dublin only one case was observed in 190,000 consecutive labours. I have not seen one occur in my hospital for the last 43 years, but have seen and attended on seven-

ral cases admitted for inversion at the Bai Motlibai and Wadia Maternity hospitals; but those were days of midwives. This is why I included this incident in Class 2; but, I admit, the possibility of spontaneous inversion in an atonic uterus. An atonic uterus may become inverted by a sudden action of the abdominal muscles, increasing intra-abdominal pressure, such as bearing down to express the placenta, in turning in bed, sitting up, etc. Violent inversion, on the other hand, is due to traction on the umbilical cord in the effort to remove the placenta or too powerful or faulty expression of the placenta by Crede's or any other method.

Spontaneous inversion may result from pulling of the cord by the child during natural delivery. While many cases are reported as spontaneous, most of them are, indeed, the result of errors of the obstetric art or faulty manipulations.

(c) In 95 to 99 per cent of normal cases post-partum haemorrhage should not occur in a well conducted labour case. Almost all the abnormalities that may cause post-partum haemorrhage in 5 or less per cent of cases have been mentioned above and I need not take your time to repeat the causes.

(d) *Injudicious Use of Oxytocics.* Ergot and its preparations and pituitary extracts are powerful weapons in the armamentarium of the obstetrician to prevent and control post-partum haemorrhage, provided that they are judiciously used. I say powerful, because when the power is misused it leads to serious and at times fatal accidents. Pituitary extracts are known by various proprie-

tory names; such as, pitoglandiol, hypophysin, pituitrin, glanduitrin, etc. Within a few minutes after the injection of 1 c.c. of the extract the uterus contracts strongly, the pains are both strengthened and made more frequent, the effects lasting from 30 to 60 minutes, depending on the quality of the preparation used and the susceptibility of the patient. Sometimes tetanus uteri may occur.

In a case of pure uncomplicated case of atony of the uterus, 1 c.c. of pituitrin might stimulate the flabby muscle, but, at other time, may cause tempestuous uterine contractions, necessitating some other drug, such as pethidine or ether to relax the uterine spasm. I would not encourage the use of pituitrin in the second stage of labour, when, after a prolonged labour the forces fail and the head is prevented from being driven over the perineum. I would rather prefer an episiotomy and forceps, which I believe to be safer procedure for both the mother and the child. Many obstetricians advocate intravenous injections of methergin, ergometrine and other such preparations, to cause placental separation and to control haemorrhage with success. I am, somehow or other, sceptic about this method, as a routine. Sometimes a twin pregnancy is not suspected or diagnosed, and when oxytocics are injected after the birth of the child or the first placenta it may lead to serious complications during the birth of the second child.

*Treatment.* The actual treatment of these accidents may be briefly mentioned as removal of the placenta, control of the haemorrhage and repair of the lacerations; but, I should

lay greater stress on the prophylactic treatment by which we could diagnose and prevent very many of the accidents which may be met with during the third stage of labour. I dare say, some conditions, like uterine anomalies or placental anomalies, may be difficult to diagnose during the prenatal period, but, with our present advances in the science and art of midwifery, in chemical laboratories, in radiography, etc., very many at least could be diagnosed before the onset of labour. I hope and trust that in the near future we shall avail ourselves of the advantages of angiography, amniography, placentography and other graphies to solve our difficulties.

In an ideal obstetric practice, there should be well-equipped prenatal, natal and post-natal departments directed and attended by senior obstetricians to instruct both the students and the patients. Careful investigations, with all the means now available to us, must be carried out by them so as to avoid or minimise the complications that may be met with during labour.

Maternity is a normal physiological condition, but the line of demarcation between normality and abnormality is very thin and it is therefore important that the students of to-day and the obstetricians of tomorrow are made to understand the physiology and the probable pathology of pregnancy and labour. We often overlook, in the prenatal period, the importance of systematic examination of blood of every gravida, and the necessary treatment that may be needed will save us many surprises of post-partum haemor-

rhage. I have known cases, that consulted me, to complain of very severe haemorrhage with their two or three labours and that some had to be given blood transfusion. Blood examination in these cases revealed faulty coagulation and bleeding time; a regular course of vitamins K and C during the last two months of gestation prevented the haemorrhage in subsequent labour.

One important function of the obstetrician is to save the woman's blood. Even though some women can lose enormous quantities, as much as 3 litres or more, without succumbing to haemorrhage, these great losses leave her debilitated, anaemic, neurasthenic and often decidedly protract her recovery; while, on the other hand, another woman cannot stand the loss of any more than 10 ozs. of blood. She collapses, there is shock, and she may need an immediate blood transfusion, etc. I have had several cases of shock and collapse in otherwise healthy looking women. I believe in the conduct of all labours as nearly bloodless as possible and I am convinced that these women recuperate much quicker, suffer less infections, nurse their babies better than those who suffered loss of blood. Let us not forget that excessive haemorrhage and other complications may be produced by improper conduct of the third stage of labour.

Before, closing, I take this opportunity to appeal to all the teachers of midwifery to impress upon their students the importance of a thorough knowledge of the physiology and pathology of pregnancy and labour.