

RETAINED PLACENTA AND ATONIC POSTPARTUM HAEMORRHAGE

BY

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The present review relates to 50 cases of retained placenta from the Department of Obstetrics and Gynaecology of the G. R. Medical College, Gwalior. The cases are collected over a period of five calendar years from 1950 to 1954.

The placenta was removed manually in all the 50 cases. The total number of deliveries for the same period was 6,365. Thus the incidence

of manual removal of the placenta was 0.78 per cent ; while that of post-partum haemorrhage was 7 per cent.

Incidence of maternal deaths due to retained placenta and post-partum haemorrhage was 11 or 1.7 per thousand. There was no death due to purely atonic post-partum haemorrhage, that is haemorrhage after the expulsion of the placenta. But this complication was an associated factor of death in 3 cases of placenta praevia and two of anaemia, while deaths due to retained placenta were six. Want of proper resuscitative measures before or after the delivery of placenta was the immediate cause of death in all the eleven cases. They died within three to eight hours of the delivery of the placenta.

The story of a case of retained placenta who dies is typical and it repeats with little variation. Retention of placenta occurs unexpectedly in the course of a labour. A mother who is labelled as a normal case delivers the baby spontaneously, though the labour may be prolonged. Placenta gets retained. Crede's expression is tried repeatedly not by one but by different persons as they arrive on the scene according to seniority. Bleeding

TABLE I
General Survey

Total number of deliveries	6365
Maternal deaths, all causes	155
Incidence of retention of placenta and manual removal	50 or 0.78%
Maternal deaths due to retention of placenta and manual removal	6 or 0.94/1000
Incidence of postpartum haemorrhage	445 or 7%
Deaths due to purely atonic P.P.H.	Nil
Deaths associated with atonic P.P.H.	5 or 0.78/1000
Percentage of maternal deaths associated with atonic P.P.H. and the manual removal of placenta	8.2%
Maternal deaths due to retention of placenta and postpartum haemorrhage	11 or 1.72/1000

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continues in the meantime. As it is in small bouts, it takes long for the patient to develop signs and symptoms of haemorrhage. Pulse gradually mounts from 88 to 90 per minute to 120 p.m. But the final development of the shock is rather rapid. At the end of one to one and a half hours restlessness rapidly sets in, patient looks pale and anxious, pulse goes

cases. (Table II). Four of them were admitted as postnatals and two were hospital deliveries at term. They reacted well to proper resuscitation. The above table shows that four times the placenta was removed hurriedly, late in the third stage of labour when the patient was already in a state of severe shock due to persistent bleeding and repeated Credé's expression.

TABLE II
Shock and Deaths

Extreme degree of shock, persistent bleeding, repeated Credé's expression	Proper resuscitation preceded by manual removal of placenta	Recovery: 6 cases
" "	Late M.R. of placenta, inadequate resuscitation	Deaths: 4 "
Low blood pressure	" "	Death due to embolism: 1 "
Placenta accreta	M.R. of placenta piecemeal, inadequate resuscitation	Death: 1 "

above 130 p.m. and there is an associated fall in the blood pressure. At this stage manual removal of the placenta is done hurriedly. No blood transfusion is available at the nick of time. Shock deepens and the patient expires within two to three hours of the manual removal. Dramatically sudden is the change from a normal to an abnormal labour.

A good Credé's expression can raise the pulse by ten beats p.m. The cumulative effect of repeated Credé's expression and persistent bleeding leads to traumatic as well as haemorrhagic shock. A woman with weak constitution, or an ill-nourished or anaemic mother will naturally not stand this strain.

In this series, the above procedure led to extreme degree of shock in six

All were spontaneous deliveries at term in the hospital. No plasma or blood transfusion was given before or after the manual removal. Operation was done late in the night and the patients expired within two to three hours of the operation. Death was accelerated in one case due to deep chloroform anaesthesia.

Remaining two deaths were in the postnatal cases, babies were born at home 16 or 20 hours before admission. In one case, in spite of low blood pressure (90/40 m.m. Hg.) there was a good adjustment in the cardiovascular system and the patient did not show restlessness on admission. At the end of two hours after the manual removal of the placenta, she suddenly developed respiratory distress and died within five minutes,

probably due to embolism. The other was a case of placenta accreta which was removed piecemeal with difficulty. Resuscitation was inadequate. She died at end of eight hours.

Thus the major cause of shock in

who delivers spontaneously.

Recent Advances

In recent years there is a rapid decline in the mortality of postpartum haemorrhage. From 1939 to 1946 the

TABLE III
Analysis of 50 cases

Type of delivery	Obstetric operations	Premature labour	Spontaneous labour at term	Total
Cases ..	8 or 16%	11 or 22%	31 or 62%	50
Primiparae ..	2	..	5	7
Multiparae ..	6	11	36	53
Twins ..	1	1	4	6
Postnatals	3	5	8
Deaths	6	6
Duration of retention of placenta	15-30 mts.	More than one hour	More than one hour	..

cases of retained placenta is trauma and haemorrhage, which in the majority of cases is due to repeated Credé's expression and persistent bleeding. Immediate cause of death is improper resuscitative measures.

Incidence of primiparae in our hospital cases is 20 to 21 per cent and seven to eight per cent of births are premature. Total number of twin deliveries for the last 5 years was 114; that comes to one manual removal of the placenta for every 20 labours in multiple pregnancy. Incidence of post-partum haemorrhage was also high in twin labours. All the six deaths were in the spontaneous delivery group. Retained placenta was removed early in obstetric operations, but in spontaneous delivery manual removal was usually deferred for more than one hour to give a full trial to Credé's expression. Thus the danger of retained placenta, under orthodox treatment, is more for a case

mortality rate from postpartum haemorrhage had fallen in England from 0.28 to 0.16 per thousand (Macafee). In 1948 there was a further decline to 0.11/1000. According to Munro Kerr and Chassar Moir, the mortality of manual removal of the placenta should not be more than 0.5 to 1 per 100 manual removals.

Control of sepsis and free availability of blood for transfusion have given a new turn to the management of this emergency. Placenta is removed early if required and no vain attempts are made to squeeze it out by Credé's expression, a procedure which results in haemorrhagic as well as traumatic shock. If the patient is in a state of shock, she is well resuscitated before as well as after the manual removal of placenta.

But the above advances have not solved the problem satisfactorily. A second line of defence has been put forward. Ergometrine is

widely advocated to reduce or arrest the loss of blood before the expulsion of the placenta, without increasing the incidence of manual removal. This has the further advantage of minimising the necessity of blood transfusion. The advocates of this measure realise that at times the operation of manual removal of the placenta may become difficult due to hour-glass contraction, but they state that the ring so formed is easily dilatable. (Stander, Flew, Moire, D.A.F. Shaw, Lister.)

It is the first principle of surgery that bleeding should be arrested at its onset and every attempt should be made to avoid it as far as possible. Similarly, haemorrhagic as well as traumatic shock of the third stage bleeding and post-partum haemorrhage should be avoided. Moreover we cannot have blood at demand for transfusion. It takes not less than 3-4 hours for us to get a donor for transfusion by direct matching with a relative or a professional donor. Professional donors are very few and we can contact them early in the morning or late in the evening.

Prenatal supervision is still inadequate, more than half the number of deliveries at our centre are in unbooked cases. At district hospitals, number of booked cases is still small hence there is little chance to correct the anaemia or nutrition of a pregnant woman so as to prepare her to stand the risk of a small haemorrhage. Hence prophylactic injection of ergometrine in cases of anaemia, placenta previa, twins, deliveries under anaesthesia, and an early injection of ergometrine in cases of retained placenta with

bleeding should be indispensable.

TABLE IV

I.V. Ergometrine in the Third Stage of Labour.

Prophylactic injections	207 cases
Retained placenta ..	
(a) Early injection, no shock before or after M.R. of placenta ..	11 "
(b) Late injection, 4 postnatals, 2 hospital deliveries ..	6 "
(c) Repeated injections	3 "
Total injections ..	227 "
hour-glass contraction ..	2 or 0.8 per cent.

In this series, five deaths from atonic postpartum haemorrhage and four from retained placenta due to late manual removal, could have been avoided by timely injection of ergometrine. Similarly an early injection of ergometrine could have saved 6 patients from developing a severe degree of shock. In 11 cases of retained placenta, an early injection of ergometrine saved the mothers from going into shock, while in six cases of severe shock, the patients were tidied over during the period of resuscitation by an intravenous injection of ergometrine in the third stage of labour. Prophylactic injection of ergometrine was given in 207 cases.

Prophylactic Injection of Ergometrine

The prophylactic injection was given to the following group of cases, anaemia 41, placenta praevia 29, multiple pregnancy and hydramnios 31, deliveries under anaesthesia 106, the total being 207. These cases were selected as they had their deliveries under the direct supervision of the

senior staff. The injection of ergometrine, .5 mg. was given intravenously in 207 cases as soon as the baby was born. With the second or the third contraction the uterus became smaller and globular, at this stage the placenta was expressed gently by applying fundal pressure. A controlled traction on the cord was maintained during this manipulation. The fundus was lifted up and the cord traction was continued when the placenta slipped into the vagina. Placenta was inspected after its delivery and the patient was watched for the following two hours.

Retained Placenta

Retained placenta is usually associated with a persistent loss of blood. When the uterus contracts, a variable amount of blood is lost.

Any loss of blood before the uterus shows signs of separation and expulsion of placenta into the lower segment is taken as abnormal. Immediately, per abdomen deep suprapubic pressure is applied on the lower uterine segment and the bulk of the uterus is pushed towards the umbilicus, this helps to straighten and compress the uterine vessels. In the meantime the patient gets an intravenous injection of .5 mg. of ergometrine. Bladder is catheterised if it is full. In a good number of cases it is possible to deliver the placenta by abdominal manipulations and cord traction as described above. Indications for manual removal of the placenta are retention without bleeding for more than one hour or earlier if the bleeding persists in spite of an injection of ergometrine.

In this series, as stated before, an early injection of .5 mg. of ergome-

trine was given intravenously in all cases of retained placenta. Bleeding was arrested immediately in every case, placenta was removed after a variable time, patients did not develop shock before or after the manual removal of the placenta. If the patient is not in a state of shock the placenta may remain in for few hours without producing any untoward effects. In the above cases the placenta was removed at the end of 2 to 6 hours. As there was no bleeding, manual removal was delayed in hope of spontaneous expulsion. Patients did not show any untoward effect due to retention of the placenta per sé.

Treatment of Shock

It is imperative that the patients who are in a state of severe shock be first resuscitated with plasma and/or blood transfusion before undertaking manual removal. It is equally essential that further loss of blood is prevented effectively during this waiting period. This point is well stressed by D.A.F. Shaw and Macafee.

Effect of .5 mg. of ergometrine wears off by the end of the second hour and patient starts losing pinkish watery blood per vaginam or she may get a sudden bout of fresh bleeding which may prove the last straw. Due to recurrence of haemorrhage, one of our patients was on the verge of death during resuscitation. This guided us to repeat the injection of ergometrine in time in two other cases. Hence, in this waiting period for resuscitation, a close watch is to be kept on bleeding.

Injection of pethidine 50 to 100 mg., continuous oxygen inhalation,

intravenous ergometrine .5 mg., dextran or plasma drip and blood transfusion if needed are the routine measures that are undertaken to treat the shock. This primary shock is reversible even in an extremely bad case.

Example : No. 31/250, 38 yrs/VIII para (P.N.C.) F.T. Spont. labour Slight bleeding persisting, repeated Crede's expression at home for 3 hours. 12 noon on admission, severe degree of shock, restlessness marked, looked pale and anxious, pulse imperceptible, B.P. 60/0=s/d m.m. Hg., haemoglobin 54 per cent.

- (1) Inj. pethidine 75 mgs, ergometrine .5 mg I.V., plasma drip with methedrin 10 mgs, (two bottles full of plasma given), Inj. percortin 10 mgs. and continuous oxygen inhalation. 50 mgs. of pethidine and 0.5 mg. ergometrine repeated at 2 p.m.
- (2) 4 p.m. general condition of the patient same as before.
 - (a) Patient tossing all the time in bed.
 - (b) Manual removal of the placenta done under open ether. Inj. neogynergen 1 c.c. I.M. given. Restlessness relieved immediately, though pulse still poor.
 - (c) 300 c.c. of blood injected rapidly after doing a venesection as the drip was not running in satisfactorily. (Manual removal of the placenta was done as soon as we got a donor, so as not to get disturbed during the blood transfusion).
- (3) 7 p.m. small atonic haemorrhage. Blood pressure still low, pulse

bad. By 9 p.m. we were able to induce the second donor to give blood. Transfusion started by open method through a thready vein in the left cubital region. It took not less than 3 hours to get into the vein and then to inject the blood with a syringe. Oxygen inhalation was continued throughout the period. Antibiotics given prophylactically.

Rest of the puerperium was uneventful. So much patience and persistence is required to drag a patient out of severe shock.

Record of blood pressure is a better guide to assess the degree of shock than simple pulse count. In all obstetric as well as gynaecological operations a record of blood pressure and pulse rate is kept before as well as after the operation. Necessary treatment is given and the recording is continued one to two hourly according to the necessity, till the blood pressure and pulse rate come to a satisfactory level. By this procedure we find it easy to detect the shock in its early stages. This gives less chance for a house surgeon to give a story of "patient suddenly became bad 3 hours after the operation and expired".

Optimum Time for Manual Removal of Placenta

Manual removal of the placenta has a peculiar beneficial effect on the shocked patient, restlessness is relieved as soon as the placenta is out, though it does not dispense with the transfusion of plasma or blood. Similarly in spite of a blood transfusion no satisfactory improvement sets in as long as the placenta is in. More-

over there is a danger of recurrence of bleeding with a rise in blood pressure. Hence it is better to remove the placenta as soon as a blood transfusion is given.

When the patient is not in a state of shock the placenta may remain in for 8 to 10 hours without causing harm, but later on absorption of the products of autolysis produces a state of toxæmia.

Hour-glass Contraction

Exaggerated contraction of the retraction ring amounting to hour-glass contraction was encountered twice in the present series after an injection of ergometrine; that comes to 2 hour-glass contractions in 227 injections of ergometrine or .8 per cent incidence. Both were primiparae who had shown hypertonic uterine activity during the first and the second stages of labour. Contractions were very painful though mild in nature, dilatation of the cervix was delayed and the second stage of labour was prolonged. Both were delivered by forceps and a prophylactic injection of ergometrine .5 mg was given. It seems that this abnormal activity of the uterus persisted in the third stage of labour and the intravenous injection of ergometrine enhanced the abnormal activity.

Association of retention of the placenta with prolonged labour is a well established fact. In some of these cases hypertonic inertia might be the cause of retention of the placenta due to hour-glass contraction.

I may quote one more case to support the above view.

While I was writing this paper a tenth para showed hypertonic uterine activity and remained in labour for

three days with cervix dilated upto 3 fingers. Baby was born spontaneously and the placenta got retained. Intravenous ergometrine was omitted as the bleeding was slight and an early manual removal of the placenta was undertaken. The placenta was partially separated and there was an hour-glass contraction.

Additional Advantages of Intravenous Ergometrine in Cases of Retained Placenta

Usually the placenta is completely separated after an intravenous injection of .5 mg of ergometrine. This makes the manual removal easy; moreover the loss of blood during the operation is minimum as the myometrium is well retracted. As the bleeding is arrested, one gets enough time to make a deliberate preparation for the manual removal of the placenta. In cases of hour-glass contraction it is difficult to reach the placenta, but once a grasp is obtained on its substance it slips out easily as it is lying free in the cavity.

An injection of neogynergen, a combination of alkaloids of ergot with quick as well as delayed action, after the removal of the placenta promotes efficient retraction of the uterus for a further period. A combination of the above two injections has eliminated the use of intra-uterine hot douche or uterine pack to control the atonic post-partum haemorrhage in this series. A myometrium which fails to regain tone will do well after a blood transfusion. Usually such a patient is in a state of shock. A drip of neogynergen is helpful. It is needless to stress the ineffectiveness of a uterine pack to control atonic post-partum haemorrhage and its

attendant risk of shock and sepsis.

Note of Warning

When we advocate ergometrine before the expulsion of the placenta, we have to be sure that we use ergometrine alone and not neogynergen. An alkaloid of ergot with delayed action should not be given before the expulsion of the placenta. Placenta does not come out even after an injection of neogynergen, but if it is retained due to severe degree of hour-glass contraction, it may get imprisoned for some days leading to toxic absorption of the products of placental autolysis, resulting in crush syndrome.

Trendelenburg's Position

After the delivery of the placenta the patient is nursed flat on the back and is not given the Trendelenburg's position even if she is in a state of shock. In spite of a pad and abdominal binder the uterus tends to fall back and relax if she is given a Trendelenburg's position. Blood collects inside and that brings on further atony.

Anaesthesia

Ether is a safer anaesthetic compared to chloroform.

Conclusion

"Any bleeding, however slight, which persists after the birth of the child is post-partum haemorrhage", Theobald (1950). Prevention or arrest of such a haemorrhage at its onset should be the aim in the management of the third stage of labour and its complications.

As stated before, deep suprapubic pressure over the lower uterine segment should be the immediate reac-

tion to the bleeding before or after the expulsion of the placenta. Injection of ergometrine or neogynergen should closely follow according to the type of bleeding. A prophylactic injection of .5 mg of ergometrine should be indispensable in those cases who are likely to bleed more in the third stage of labour or in those who would not be able to stand a small loss of blood in the third stage.

If we practise and incorporate in our teaching the above principles, the mortality of post-partum haemorrhage will decline rapidly.

Summary

1. 50 cases of retained placenta are analysed. Incidence of manual removal of the placenta was 0.78 per cent and that of post-partum haemorrhage was 7 per cent.
2. Incidence of maternal deaths due to retained placenta and post-partum haemorrhage was 11 or 1.7 per thousand. No death due to purely atonic post-partum haemorrhage, but this complication was an associated factor of death in 3 cases of placenta praevia and two of anaemia. Deaths due to retained placenta were six.
3. Persistent bleeding and repeated Crede's expression are the main causes of haemorrhagic as well as traumatic shock which may result in death if resuscitation is inadequate. A mother who delivers spontaneously is more likely to be exposed to the above danger.
4. Even a small loss of blood in the third stage of labour may prove

- fatal to a case of placenta praevia or anaemia.
5. Multiparity and twin deliveries have a greater tendency to develop this complication which may occur unexpectedly in the course of a labour.
 6. Any persistent bleeding before the signs of separation and expulsion of the placenta should be the indication for immediate action.
 7. Suprapubic pressure over the lower uterine segment and an injection of ergometrine .5 mg or neogynergen I.V. should closely follow each other to arrest the bleeding before or after the expulsion of the placenta respectively.
 8. Bladder should be catheterised if full. Lifting up of the fundus associated with a gentle traction on the cord helps the delivery of the placenta, when it is separated.
 9. Indications for the manual removal of the placenta are retention for over an hour without bleeding or earlier if the bleeding persists in spite of ergometrine. Manual removal of the placenta is easy after an intravenous ergometrine .5 mg as the placenta is usually separated completely. In cases of hour-glass contraction, once a grasp is obtained on the placenta, it slips out easily. No intra-uterine hot douche or uterine pack was necessary in the ergometrine series for atony.
 10. Pryphylatic injection of ergometrine should be indispensable in those cases who cannot stand the bleeding of the third stage.
 11. Shock if present should be well treated before and/or after the manual removal of the placenta.
 12. Trendelenburg's position has the disadvantage of relaxing the uterus. Ether is a safer anaesthetic compared to chloroform.

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