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<td>Author 3</td>
<td>NWAGHA, T. U.</td>
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Review: The Third Stage of Labour: A Time Bomb!!

*U.I. Nwagha, **J.M. Okaro, ***T.U. Nwagha
Department of Obstetrics and Gynaecology, University of Nigeria Teaching Hospital, Enugu
*Kencheka Hospital, Enugu.

Correspondence to: Dr. Uchenne Nwagha, Department of Obstetrics and Gynaecology, University of Nigeria Teaching Hospital, Enugu, Nigeria. E-mail: UchenneNwagha@yahoo.com

The third stage of labour can present with very serious complications which may lead to severe morbidity or mortality unless prompt and decisive action is taken. Post partum haemorrhage (PPH) is the commonest third stage complication and a leading cause of maternal mortality and morbidity in our environment. This review is aimed at revisiting the predisposing factors to post partum haemorrhage. It also emphasizes the prophylactic, immediate and further management of emergent complications.

INTRODUCTION

The third stage of labour commences with the birth of the foetus or fetuses and ends with the complete expulsion of the placenta and membranes. After the delivery of the baby, both the patient and the medical attendant may have a false sense of security that all is well and safe. Unexpected and life-threatening complications may therefore occur. These include, post partum haemorrhage (PPH), acute uterine inversion, neurogenic shock, anesthetic complications, drug reactions, intra abdominal catastrophes like ruptured viscera or vessels, cardiovascular and respiratory complications. All these may proceed to post-partum collapse and unless prompt action is taken, severe maternal morbidity or even mortality may occur.

Post partum haemorrhage, in association with retained placenta, is the commonest complication of the third stage of labour. It also remains the commonest cause of maternal morbidity and mortality in our environment. This situation requires early identification of risk factors, prophylactic treatment of all labours, prompt and decisive management of emergent situations. Our review will mainly concentrate on PPH.

POST PARTUM HAEMORRHAGE

Post partum haemorrhage is excessive blood loss from the genital tract after delivery of the baby. It is ranked primary when it occurs within the first 24 hours of delivery and secondary when it occurs after 24 hours but within 6 weeks of delivery. The World Health Organization (WHO) defined primary post partum haemorrhage as blood loss of more than 500 ml in the first 24 hours of delivery. In Nigeria, this value is accepted, but includes bleeding of any amount which warrents the constitutional state of the mother. However, in Australia and Zimbabwe, the minimum cut off value is 600 ml. When blood loss is visually estimated, as is often done in our environment, it has been shown that values obtained are inaccurate and observer dependent. As a result, the use of cholera indices from refreshing our memories on the recent techniques of management where state of the art facilities are available, it also provides alternative more sophisticated methods that can be life saving. Management of PPH in some religious sects like the Jehovah's witness and Faith healers are also highlighted.

Key Words: Third Stage of Labour, Post Partum Haemorrhage.

...to estimate post partum blood loss has been proposed in developing countries. In developed countries, specialized methods like, using radio-collared red cells and acid haematin extraction, have been advocated. Generally speaking, meticulous collection and measurement of shed blood can only achieve limited degree of accuracy. Despite all efforts aimed at accurate determination, blood loss following delivery has been under estimated by 30-50% and can also be over estimated especially when less than 150ml. As a result of these discrepancies, it has been suggested that minimum cut off levels should be 1000 ml. If should include significant fall in packed cell volume at need for blood transfusion in the definition. Primary post partum haemorrhage occurs in 3.7% to 6.6% of deliveries, but when defined in excess of 1000 ml, it occurs following 1.5% of all deliveries.

Ante-locutional Consideration: Uterine atony remain the commonest cause of primary post partum haemorrhage. The inability of the uterus to contract leads to non-construction of the vascular channels in the placenta bed. Excessive bleeding then occurs and the uterus is distended with blood, appearing as a 'biggy' mass on abdominal palpation. Various factors have been implicated in atonicity of uterine atony. These include grand multiparity, primiparity, uterine overdimension (multiple pregnancy and polyhydramnios), induction of labour, prolonged deep anaesthesia, preeclampsia, previous history of PPH, associated uterine fibroid, and ante partum haemorrhage. Recent studies have observed that some of these factors like grand multiparity and induction of labour are no longer significant predictors of PPH. However these were observational studies without the use of multivariate analysis to exclude the effect of other associated variables, thus, conclusions generated were unreliable. Retained placenta and membranes on its own can cause PPH but commonly co-exists with uterine atony as failure to contract...
effectively results in incomplete separation of the placenta. Rarely, placenta previa is diagnosed after 20 weeks of gestation. If the placenta covers the cervix, delivery may be more difficult and the risk of bleeding is increased.

Management of Primary Post-Partum Haemorrhage

Management of severe postpartum haemorrhage should be performed by a multidisciplinary team. Initial treatment includes manual removal of the placenta, oxytocics, and uterine massage. In cases of severe bleeding, additional interventions such as uterine compression sutures or hysterectomy may be necessary. Early identification and treatment of causes such as placenta previa, placenta accreta, or placenta abruptio can significantly improve outcomes.

In cases of massive haemorrhage, immediate blood transfusion is required. Cross-matched blood units should be available, and preoperative preparation for operating room should be underway. In cases of suspected placenta previa, consideration should be given to performing a low transverse incision to allow for easier identification and intervention.
maintained. Care should be taken not to put blind uterine inversion is an uncommon event. The best immediate management is replacement of the uterus. If this is not possible, Alternatives include: using warm normal saline into the vagina until hydrostatic pressure replaces the uterus can be done.3,25 Passage of saline from the vagina is prevented by keeping the first in the vagina. A better seal can be produced by passing the saline through a sump cup containing liquid which is passed into the middle pan of the vagina and held in place by hand.3,25 If bleeding persists and genital tract trauma, retained placenta, acute uterine inversion and bleeding disorders have been excluded, then diagnosis is most likely uterine atony, and further management is advocated.

Further Management of Atonic PPH:
1. Medical Management: When ergonovine and oxytocin have failed to achieve a well contracted uterus, intravenous injection of 15 mg methyl progesterone Fα (Flamabase) via the anterior abdominal wall has proved to be successful.25 This can also be administered intra muscularly but this produces severe diarrhea.26 More recently, progesterone or analogues (minoprostol orally 6000µg27; rectally 8000µg28; and intrauterine 800µg3,25) have been used with varying degrees of success.

2. Surgical Management: Surgical methods in the past have been recommended when medical treatment has failed. It is better to use surgery with the simplest, non-invasive surgical techniques before embarking on complex, invasive maneuvers. In order to reduce the rate of blood transfusion especially in this era of HIV/AIDS, it is advised, that if possible some of the simple surgical techniques can be applied synchronously with medical treatment. Compression of the acta via the anterior abdominal wall to reduce blood supply to the uterus is simple, effective, and life saving.

(6) Uterine tamponade procedures: Bimanual uterine compression has proved very effective in controlling PPH, but it is, very rarely, indicated when the practitioner may have to hold on to the uterus longer than he anticipated. Intracervical packing is a traditional procedure which fell out of favor in the 1970s due to significant risk of infection and continual hemorrhage. However these problems have been successfully taken care of by the use of antibiotics and good technique.3,24 The cervix is held firmly with gauze holding forceps at ystem may cause significant trauma. Roll gauze is fed into the uterus over the operator's fingers and uniformly applied side to side, from top to bottom. Usually several roles of gauze are needed and can be joined together by tying. Specially designed gauze tampons have been developed for this purpose.3,24 Various success rates with uterine packing have been reported.2,25 Removal of the gauze within 24-36 hours is mandatory.24 For easy removal, it has been suggested that the pack should be inserted into a plastic drape shaped as a big bag.25 When adequate pressure cannot be achieved using gauze packs, specially designed balloons have proved successful.24,25 Special designed balloons are not available, the use of gastric tube (sengstaken blake more tube), 3,25 condom balloons 2,24,25, military or shock winner (MASH), and Foley catheter 2 have been reported with varying degrees of success. The cost of these techniques using sutures (brace suture, B Lynch sutures) is also highly effective in controlling active PPH.4,28

(7) Cervical Devascularization Procedure: The use of various curettes and embolization of uterine arteries with gelidium or 3mm metallic coils all aimed at reducing blood supply to the uterus have been very effective.2,25 These procedures are however rarely done as they are limited by availability of specialized imaging equipment and trained interventional radiologist. Ligature of uterine arteries 2,25; and internal iliac arteries 2,25 have successfully been performed and proved effective in controlling hemorrhage and preserving reproductive function. In order to minimize blood loss and reduce maternal morbidity, vaginal uterine artery ligation has been advocated.

(8) Hysterectomy: When attempts to conserve the uterus and preserve reproductive functions fails, or when conservative measures are not available, hysterectomy should be performed as a life saving procedure. Undue delay by attempts to conserve the uterus should be avoided as this can lead to maternal death.2,7 The quickest, safest intervention is subtotal hysterectomy. Attempts to leave abdominal hysterectomy, especially when the cervix is fully dilated causes more bleeding and increased likelihood of damage to ureters and bladder. It can also often be difficult to identify the junction between the cervix and the vagina when the cervix is fully dilated. If the placenta was low lying, bleeding from the cervical stump may occasionally continue but often this will probably be controlled by direct pressure while the next step is considered. It is thus reasonable and advisable to perform a subtotal hysterectomy which will usually stop the bleeding or reduce it to the barest minimum. The remaining stump should be observed for further hemorrhage which can then be removed when conservative measures fail to control the hemorrhage.

Control of Intrapartum and Postpartum Haemorrhage at Caesarean Section: Management of postpartum haemorrhage at cesarean section is same as in spontaneous vaginal delivery. Additional blood loss from the incision site may however worsen events. Conservative measures to preserve reproductive function before resuming in hysterectomy is easier to apply. Commonly encountered cause of PPH at cesarean section is placenta previa. Dangerous life threatening bleeding can occur when there is associated placenta accreta. Management of such cases should therefore be anticipatory. Previous endometrial damage has been identified as a risk factor in the development of placenta previa accreta.3,25 There is no doubt that routine ultrasonography is a contemporary tool in modern day obstetric practice, thus, ultrasound placental localization especially when there is previous history of
endometrial damage should not be over emphasized. The potential need for a hysterectomy in cases of cesarean section for placenta previa is the main reason why such cases should whenever possible, be attended to by a clinician with a gynecological experience. Before resorting to hysterectomy, conservative measures to preserve menstrual and reproductive function of the uterus should be considered. When these options have failed, and the severity of the condition demands intervention, hysterectomy should be considered. A hysterectomy will be acceptable. It is important to completely control the haemorrhage before closing the abdomen. Massive blood loss leads to some degree of disseminated intravascular coagulopathy, thus leaving small blood clots with the possibility that they will stop, increases maternal morbidity, and may lead to mortality. Apart from the methods earlier described, practitioners in Asia have successfully used intraoperative bleeding by modified suturing techniques. These include packing interrupted haemostatic circular stitches on the lower segment and approximating anterior and posterior wall of the uterus at the site of placental bed. Although this may lead to increase in the incidence of uterine synechia, the authors reported rapid return of menstrual and reproductive function.

Obstetric Haemorrhage in Women who refuse Blood Transfusion: Majority of women accept blood transfusion if the clinical reasons for its necessity are fully and appropriately explained. A few women may however continue to refuse blood due to personal and religious reasons. The main group of women who may refuse blood for religious reasons are members of the Jehovah’s Witness sect, who believe that the Bible forbids the transmutation of blood or blood components. Fear of contracting infections especially HIV/AIDS is another reason for refusing blood transfusion. A Jehovah’s Witness will accept only blood that is of medical treatment except blood. They believe that they are not exercising the right to die and are keen to cooperate with medical professionals, provided there will be no blood transfusion. They also do not try to stop others from having blood. The sect does not accept transfusion of whole blood, packed cells, white cells, or plasma. They will be glad to accept IV colloids or crystalloids. They allow their members to individually decide on whether to take vaccines containing micro blood fractions; immunoglobulins, dialysis, intraoperative cell salvage, haemodilution and organ transplant.

Management of women refusing blood transfusion starts from the antenatal period. This group of women should be identified and noted. In a non-confrontational manner, the risk of refusing blood transfusion should be explained. If she still refuses despite all this, she should be booked in a unit with all the facilities for prompt management of haemorrhage. All the discussions with the patient must be documented and informed consent obtained. Those with risk factors for PPH should be identified and noted. Antenatal anaemia should be promptly corrected. Senior members of the unit must be aware of such cases. When in labour, the consultant obstetrician should be informed. Labour should be managed by experienced staff and active management of the third stage should be the rule. Those with identifying risk factors, should have intravenous infusion while in labour and high doses of oxytocin added after delivery. Patient should not be left alone in the first hour after delivery. Majority of the labours will end without serious haemorrhage but when it occurs, prompt and decisive actions should be taken. The threshold for intervention should be lower than in other patients. The consultant haematologist and anaesthetist should be informed. The patient should be informed about the events that are taking place. If standard treatment is not controlling bleeding, blood transfusion should strongly be recommended. Any patient is entitled to change her mind about a previously agreed treatment plan. If she maintains her refusal to accept blood, her wishes should be respected provided she is above 18 years of age. The medical staff must maintain a professional attitude and must not lose trust of the patient or her partner. It is however very distressing for staff to watch a woman bleed to death while refusing blood. If the woman dies despite all available treatment, relatives require support like any other bereaved family.

The first step to take when haemorrhage occurs in this group is to establish IV colloidal infusion e.g. haemaccel or Gelfusan. Blood pressure, pulse and urine output should be monitored. If possible consider a pulse oximeter or central venous pressure (CVP) line. Apply oxytocic, auric and bimanual uterine compression and other measures earlier described. In addition fibrinolytic inhibitors, aprotinin (Trasyloc) 2 x 10e4u, followed by 500,000 unit, or tranexamic acid (Cyklokapron) lmg IV three times daily, can be used to control serious haemorrhage. Recombinant factor VIIa (Novaseven) 90 ukg which provides site specific thrombin generation has been utilized. The authors have treated 5 reported cases of uncontrollable haemorrhage due to disseminated intravascular coagulopathy (DIC). These agents are extremely useful in the management of disseminated intravascular coagulopathy (DIC) which can develop secondary to massive haemorrhage. The primary event of uterine atony causing PPH may have probably been taken care of by conservative measures. Hysterectomy is normally the last resort when other conservative measures fail. The threshold for hysterectomy should be lower than in other pregnant women and should be performed by a consultant obstetrician. Patient survival has been reported with lmg < 2g/kg. After survival from massive obstetric haemorrhage, the aim should be to build the haemoglobin and restore iron stores. For severe anaemia, oxygen can be given. Erythropoietin 360 ukg X 3 per week has also proved successful. Iron supplementation is also essential. Intravenous iron sucrose (venofer) which is not associated with anaphylaxis, 200 mg X 3 per week is preferred. Therapy can be augmented with vitamin B12 and folate acid. In life threatening anaemia hyperbaric oxygen therapy is an option.

Obstetric Haemorrhage in Faith Healers: The adherence of the faith healers includes members of the Path Tesamalek, Church of Christ Scientists, Followers of Christ Church and the Church of first
born. Founders of these churches were at one time or the other healed of various ailments where medical treatment failed. Likewise Christian Scientists, respect the work of medical profession but choose prayers as treatment for themselves and their children rather than medicine because they have experienced pray as effective many times in their lives. Most of these cases are rarely encountered by practitioners as they choose to deliver in churches and prayer houses and those with PPH suffer from severe morbidly and sometimes mortality. On very rare occasions, practitioners may encounter these faith healers with severe haemorrhage. The consequences of refusing medical treatment should be properly explained. The patient's confidence on the practitioner is very important. If however patient continues to refuse medical treatment, physical methods like, rubbing up the uterus, aortic compression, bimanual uterine compression and uterine tamponade should be used after proper explanation that these methods do not necessarily require administration of drugs. All discussions should be documented and informed consent obtained.

Having done these, the practitioner should be satisfied that he has done his best within prevailing circumstances. Although it is very distressing to watch a patient die while refusing medical treatment, the law does not permit treatment without consent.

CONCLUSION

The third stage of labour can be very catastrophic and can ratlle the ill prepared practitioner irrespective of experience. It can still occur despite active management of third stage of labour. The importance of developing a local protocol for management enthrall be overemphasized. There is also an urgent need to train and to train from time to time.

Early detection of high risk cases, prophylactic management of all labours, prompt and decisive action in emergent situations with diffuse this "90000"

before it detonates, it detonates. Successor mortality and morbidity in thus extremely reduced and our safe motherhood initiative will-it success a mortality story.

REFERENCES
