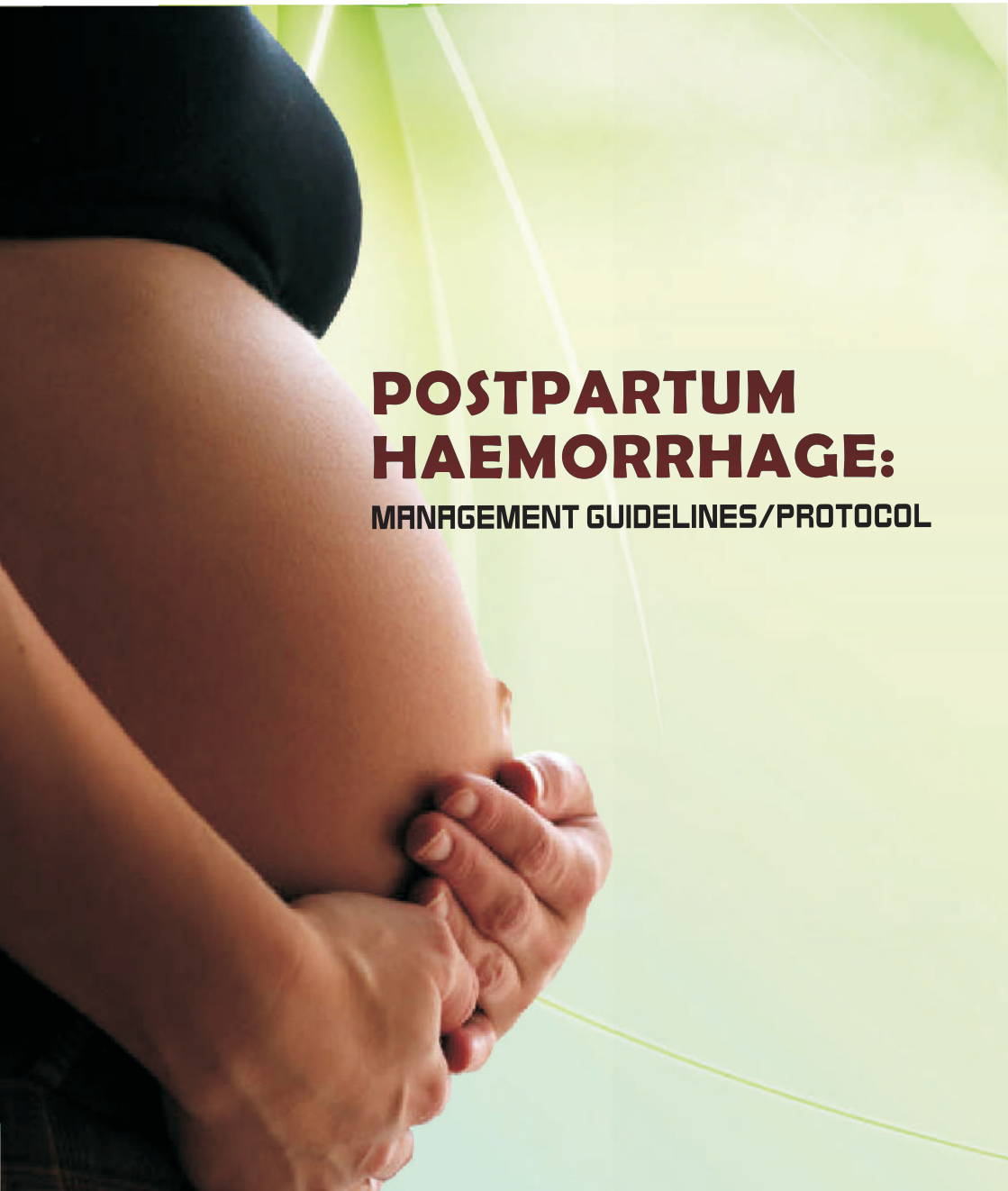
SOCIETY OF GYNAECOLOGY AND OBSTETRICS OF NIGERIA

(SOGON)



POSTPARTUM HAEMORRHAGE:

MANAGEMENT GUIDELINES/PROTOCOL

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Preface

The Gates/FIGO maternal and Newborn health (MNH) project (Leadership in Obstetrics & Gynaecology for Impact and Change (LOGIC) is in response to the worsening maternal and newborn health in middle and low resource countries, including Nigeria and the need to strengthen member Associations (MAs) to support governments whereby such Associations would eventually assume leadership role in maternal and newborn health through organizational capacity improvement, Advocacy and service delivery.

The Society of Gynaecology and Obstetrics of Nigeria (SOGON) was selected in the first phase of the project along with members Associations (MAs) from Cameroon, India, Mozambique, Uganda, Burkina Faso and Ethiopia and Nepal
The three objectives of the Gates/FIGO Initiative include:

Objective 1: To provide evidence informed policy, strategy and action plans on MNH influenced and support through SOGON's advocacy to raise and maintain awareness of and investment in MNH and engage in dialogue with health sector stakeholders.

Objective 2: To determine progress made in delivering evidence-informed policy, strategic objectives and operational/annual plans with MA's active role in implementation, monitoring and evaluation.

Objective 3: To strengthen National (and Sub-national) MA organization to enable effective participation in National and sub-national strategic and operational components related to Maternal and Newborn Health

The project which commenced in 2009/2010 is in its second year of implementation.

As part of its capacity improvement of health facilities, SOGON selected three health facilities (one Specialist Hospital, One Cottage Hospital and one Primary Health care) across the three Senatorial Districts of Gombe State.

In order to contribute to the reduction of the major causes of maternal deaths in that State, guidelines/protocols for the management and control of severe Pre-eclampsia/eclampsia and Post partum Haemorrhage were produced to update the knowledge and skills of Doctors and midwives in these facilities, which will further improve quality obstetric practice. These guidelines/protocols will also be distributed to other health facilities across the country, particularly, the northern States of Nigeria, where the burden of maternal and newborn death is highest.

I wish on behalf of the President, Chief (Dr) TA Abiola-Oshodi and the entire membership of SOGON, to thank Bill and Melinda Gates Foundation for supporting the MNH project and International Federation of Gynaecology and Obstetrics (FIGO) for selecting SOGON to participate in this worthwhile Initiative.

I appreciate the commitment of members of the Protocol Committee who worked tirelessly with me to produce the guidelines/protocols. They include; Prof. S.O. Shittu, Prof. B.A. Ekele, Dr. A.A. Massa, Dr. J.T. Mutihir, Dr. Joel Adze, as well as Dr. M.O. Adeoye, the SOGON Project Manager. I thank them and hope that they will continue to lend their support to SOGON to actualize its transformational programme for maternal and newborn health.

Professor Innocent A.O. Ujah, ***mni, MBBS, FMCOG, FICS, PGDM,***
National Coordinator
Gates/FIGO LOGIC Initiative
(2009 - 2011)

INTRODUCTION

Normal vaginal delivery is accompanied by bleeding of 200-300ml but vaginal bleeding exceeding 500 ml is regarded as postpartum haemorrhage. Such bleeding account for over 10% of the parturient's total blood volume and results in systemic disturbances. Bleeding exceeding 1000ml is regarded as excessive hemorrhage and causes severe systemic disorders, including circulatory shock. The occurrence of either of these heamorrhages within 24 hours of delivery is termed primary while the one afterwards is called secondary haemorrhage.

Postpartum haemorrhage is estimated to complicate 4% of vaginal deliveries and accounts for 60% of obstetric haemorrhages, which in turn causes 25% of global and 23% of Nigerian maternal mortalities respectively. Out of the 59,000 annual maternal deaths in Nigeria, 13,570 occur as a result of postpartum haemorrhage.

Uterine atony, genital tract laceration and retained placenta and membranes are the leading causes of postpartum haemorrage and the vast majority of cases are unpredictable. For these reasons, this complication must be anticipated in every parturient and effort at preventing it must be instituted at every childbirth.

In 2006, the International Confederation of Midwives and the International Federation of Gynaecology and Obstetrics issued a joint statement that “women who are sick, malnourished or lacking access to skilled care during pregnancy and childbirth are the most likely to die from post-partum haemorrhage”, and reaffirmed a total commitment to the institution of active management of third stage of labour (AMTSL) as the most effective means of preventing postpartum haemorrhage and recommends its use at every childbirth.

CLINICAL FEATURES AND DIAGNOSIS

Making the diagnosis of postpartum haemorrhage is one of the most imprecise and subjective clinical challenges. Many studies demonstrate that visual estimates range from 30 to 50% of actual losses, and inaccuracy in such estimates increases with increasing blood loss, particularly above 1000 ml. In local and traditional settings where towels are used as sanitary pads at childbirth, the soaking of two of such towels have been estimated to amount to about 500ml blood loss. Similarly, where the plastic bidet or "po" is used, accumulation of blood to half its capacity suggests haemorrhage. Alternatively, blood loss could be estimated using vital signs recorded on the bleeding parturient as displayed in Table1:

Table 1 Staging scheme for assessment of obstetric hemorrhage

Severity of shock	*Findings*	*% blood loss*
None	None	< 15–20%
Mild	Tachycardia (< 100 bpm) Mild hypotension Peripheral vasoconstriction	20–25%
Moderate	Tachycardia (100–120 bpm) Hypotension (systolic blood pressure 80–100 mmHg) Restlessness Oliguria	25–35%
Severe	Tachycardia (> 120 bpm) Hypotension (systolic blood pressure < 60 mmHg) Altered consciousness Anuria	> 35%

From Gonik B. Intensive care monitoring of the critically ill patient. In Creasy RK, Resnik R, eds. *Maternal-Fetal Medicine*, 3rd edn. Philadelphia: WB Saunders, 1994:865–90

Postpartum haemorrhage could be complicated by circulatory shock, anaemia, secondary amenorrhoea, infertility or death, and these are all better prevented than treated.

PREVENTION OF PPH

The commonest cause of postpartum haemorrhage is uterine atony and this can be readily prevented by a process called 'Active Management of Third Stage of Labour' (AMTSL). This is an elective process that is instituted at the beginning of the third stage of labour that compels the uterus to immediately contract upon emergence of the newborn from the birth canal.

This facilitates the immediate expulsion of the placenta by the uterus, maintains a contracted uterus thereafter, consequently preventing unnecessary bleeding. The AMTSL process is recommended for every woman at childbirth and should be administered by Skilled Birth Attendants (Doctors, Nurses and Midwives), in the following steps:

Clamping the umbilical cord after birth of baby;

Administration of oxytocin (10 IU intravenously or intramuscularly) within one minute after the birth of the baby (Misoprostol tablet, 600mcg orally could be given in the absence of oxytocin or means of administering it);

Delivery of the placenta by controlled cord traction;

Uterine massage after delivery of the placenta;

Inspection of placenta and membranes for completeness; and

Monitoring of the parturient for any vaginal bleeding and her vital signs for two hours.

In birthing circumstances where a skilled birth attendant (SBA) is not available, the following alternative process is recommended:

Clamping the umbilical cord after birth of baby;

Administration of Misoprostol tablet (600mcg orally) within one minute after the birth of the baby;

Encouragement of the parturient to bear down to deliver the placenta; and

Monitoring of the parturient for any vaginal bleeding and her general condition for two hours.

The use of Ergometrine for AMTSL is no longer recommended because of its widespread ineffectiveness caused by its poor handling and exposure to sunlight and high temperatures of the tropics, both of which it is sensitive to. Ergometrine and Syntometrine (combination of syntocinon and ergometrine) are also contraindicated in over 10% of parturients on account of conditions like pre-eclampsia/eclampsia, heart disease and hypertension.

In delivery situations where no oxytocic is available, an 'expectant' management of the third stage of labour is recommended, this involves:

Clamping the umbilical cord after birth of baby;

Observation for signs of placenta separation (sighting of uterine contraction, slight vaginal bleeding and lengthening of the protruding cord at the introitus)

Encouragement of the parturient to bear down to deliver the placenta; and

Monitoring of the parturient for any vaginal bleeding and her general condition for two hours.

(In this circumstance, nipple stimulation of the parturient has been observed to be helpful for stimulating uterine contraction and preventing PPH).

MANAGEMENT OF POSTPARTUM HAEMORRHAGE (PPH)

The leading causes of PPH include uterine inertia, retained placenta, genital tract laceration, ruptured uterus and uterine inversion, in that order of frequency.

UTERINE INERTIA (ATONIC UTERUS):

This is the failure of the uterus to contract effectively after expulsion of the baby, leading to continuous bleeding from the site where the placenta had detached.

Clinical Assessment/Identification of the Problem:

Take a history of:

- age and parity
- past history of PPH
- index pregnancy
- past obstetric history
- mode of delivery

Conduct a physical examination to:

- check for pallor, sweating and cold clammy extremities
- check vital signs
- classify the severity of haemorrhage (see Table 1, above)

Examine the abdomen for uterine size, consistency and tenderness;

Perform a vaginal examination to check for:

- lacerations and tears

- retained products of conception
- examine the placenta and membranes for completeness (if available)

LABORATORY INVESTIGATIONS

Primary Health Care Level:

Take blood for PCV or Hb estimation
Perform urinalysis

Secondary and Tertiary Health Care Level:

Take blood for:

PCV or Hb estimation
grouping and cross-matching of two units of blood
urea and electrolytes
bedside clotting time and clotting profile

TREATMENT

Primary Health Care Level (and Community Level):

If placenta has been delivered and there is bleeding:

- Put baby to mother's breast;
- Ensure bladder is empty;
- Massage uterus for contraction;
- Administer intravenous Oxytocin, 10 IU (if uterus has not contracted) or Syntometrine 1ml intramuscularly (if neither of these can be given, insert 5 tablets, 1000mcg of Misoprostol into the patient's anus;
- If uterus has not contracted commence intravenous Normal saline plus 20 units Syntocinon to run fast until uterus is well contracted;
- Do manual compression of the uterus if not well contracted;
- Suture tears and lacerations accordingly if identified;
- Monitor vital signs
- If the patient is in moderate or severe shock the use of Anti-Shock Garment should be considered for her resuscitation.
- If bleeding persists, refer the patient to secondary or tertiary health

care level with all relevant documents, and make sure she is accompanied by a health care provider.

If placenta has not been delivered and there is bleeding:

- Empty the patient's bladder;
- Put baby to breast;
- Rub up the uterus for a contraction;
- Set up intravenous infusion and repeat intravenous Oxytocin, 10 IU to effect good uterine contraction (if Oxytocin is not available, place 5 tablets, 1000mcg of Misoprostol in patient's anus);
- Deliver the placenta and membranes by controlled cord traction or manual removal if retained
- Give broad spectrum antibiotics.
- If bleeding persists, refer the patient to secondary or tertiary health care level with all relevant documents, and make sure she is accompanied by a health care provider.

Secondary and Tertiary Health Care Levels:

All measures listed above for PHC level must be taken;

If Hb is lower than 9 g/dl (PCV< 28%), level of shock is moderate/severe (see Table 1 above) or her clinical condition is worsening, arrange for blood transfusion;

If bleeding persists and placenta has been delivered:

- Continue intravenous infusion with Normal saline containing 20-40 units of syntocinon to run fast until uterus contracts;
- If cervical laceration is identified, suture accordingly;
- Monitor vital signs hourly;
- Insert a urethral catheter to monitor fluid intake and urinary output;

if bleeding continues in spite of management above, conduct a bimanual compression of the uterus as follows:

- wear high level disinfected or sterile gloves, insert a hand into the vagina and remove any blood clots from the lower part of the uterus or cervix;
- place the fist into the anterior fornix and apply pressure against the anterior wall of the uterus;
- with the other hand, press deeply into the abdomen behind the uterus, applying pressure against the posterior wall of the uterus;
- Maintain compression until bleeding is controlled and the uterus contracts.

Alternatively, compress the aorta as follows:

- apply downward pressure with a closed fist over the abdominal aorta directly through the abdominal wall; the point of compression is just above the umbilicus and slightly to the left (aortic pulsations can be felt easily through the anterior abdominal wall in the immediate postpartum period);
- with the other hand palpate the femoral pulse to check the adequacy of the compression; if the pulse is palpable during compression, the pressure exerted by the fist is inadequate but if the femoral pulse is not palpable, the pressure exerted is adequate;
- maintain compression until bleeding is controlled.

If bleeding persists inspite of the foregoing insert 5 tablets, 1000mcg of Misoprostol into the patient's anus
(provided this had not been previously administered).
Where available, Prostaglandin F_{2a} can be administered as a third line treatment where there is no response to preceding uterotonics. It is administered in intramuscular dose of 250mcg every 15 minutes to a maximum of 2mg (contraindicated in patients with asthma, hypertension and cardiopulmonary disease.

If this measure does not stop further bleeding, arrangements should be made for a surgical intervention, as follows:

A Balloon temponade could be applied on the uterus, like the Sengstaken

tube, Rusch balloon or improvision with condom and foley's catheter. This is a temporary solution for not more than 48 hours. Other alternative temporary surgical interventions are:

- Where facilities exist, Uterine Artery embolization through a percuteneous transcatheter arterial embolization could be performed.
- Transvaginal bilateral uterine artery ligation.
- Laparatomy techniques like:
  - B-Lynch Sutures on the uterus; and
  - Internal Iliac Artery ligation

Absence of facilities or skills to offer any of the above listed conservative surgical treatments, in the face of persistent bleeding, will necessitate the permanent treatment with a hysterectomy. In this circumstance, a sub-total hysterectomy is faster to accomplish although a total hysterectomy is more widely preferred, to eliminate risks of future cervical neoplasm.

RETAINED PLACENTA

A retained placenta occurs when the placenta is not delivered within 30 minutes of delivery of the baby. There may or may not be accompanying bleeding.

Assessment/Identification of the Problem:

Take a history of:

- age and parity,
- past history of PPH
- index pregnancy
- past obstetric history
- mode of delivery

Conduct a physical examination to:

- check for pallor, sweating and cold clammy extremities
- Check the vital signs(temperature, pulse rate, respiratory rate and BP);
- Examine the abdomen for uterine size, consistency and tenderness;

Perform a vaginal examination to check for:

- retained placenta (within the uterus or vagina)
- lacerations and tears
- Check for full bladder.

MANAGEMENT

Investigations:

Primary Health Care Level:

Take blood for PCV or Hb estimation.

Secondary and Tertiary Health Care Levels:

Take blood for:

- PCV or Hb estimation
- grouping and cross-matching of 2 units of blood
- urea and electrolytes
- bedside clotting time and clotting profile

Treatment:

Primary Health Care Level:

Apply controlled cord traction to remove the placenta. Note: Avoid forceful cord traction and fundal pressure, as they may cause uterine inversion.

If the placenta is not expelled, give oxytocin, 10 units IM if not already done in active management of third stage(if oxytocin is not available, give 3 tablets, 600mcg of Misoprostol orally);

Ensure that the bladder is empty. Catheterize the bladder if necessary;

If the placenta is undelivered after 30 minutes of oxytocin stimulation and controlled cord traction, refer to a higher level of health care.

Secondary and Tertiary Health Care Levels:

Implement all the measures described above for PHC level;

Perform manual removal of placenta; Note: Very adherent tissue may be a placenta accrete, increta or percreta. Efforts to extract a placenta that does not separate easily may result in heavy bleeding or uterine perforation, which usually requires hysterectomy.

Give appropriate antibiotics;

If bleeding continues, reassess for DIC and treat accordingly (see below)

RUPTURED UTERUS

Uterine rupture can present as PPH. This usually manifest with simultaneous

external and internal bleeding characterized by: rapid deterioration into shock that cannot be explained by the quantity of observed vaginal bleeding and abdominal tenderness and guarding, with evidence of ascitis. Whenever suspected, treatment must be aggressive, as follows:

Primary Health Care Level

Maintain an open airway;
Facilitate her respiration and give intranasal oxygen as needed;
Set up an intravenous infusion of Normal saline or Ringers lactate using a wide bore cannula or needle;
Insert an indwelling urethral catheter;
Apply Anti-Shock Garment on the patient if in moderate to severe shock (Table 1);
Refer the patient immediately to a Secondary Health Care Center for appropriate treatment.

Secondary Health Care Level:

Resuscitate patient as outlined for PHC level;
Group and Cross-match at least three units of blood for her;
Commence arrangements for laparatomy;
At laparatomy the treatment options include:

- Repair of the uterus (and bilateral tubal ligation in most cases), if the rupture is limited;
- Sub-total hysterectomy, if rupture is extensive;
- Total hysterectomy if there is vaginal and pelvic floor involvement in the rupture or there is considerable sepsis

UTERINE INVERSION

In this condition the body of the uterus is partially or completely turned inside out after delivery of the fetus, akin to a hand glove being removed. It can be complicated by bleeding and shock.

Assessment/Identification of the Problem

Take a history of:

- age and parity
- past history of PPH and uterine inversion
- index pregnancy
- past obstetric history
- mode of delivery including delivery of the placenta

Conduct a physical examination to check for pallor, sweating and cold clammy extremities;

- Check the vital signs;
- Examine the abdomen for uterine size, consistency and tenderness;
- Inspect the vagina and observe the uterus outside the vulva.

MANAGEMENT

Investigations:

Primary Health Care Level:

Suspected cases of uterine inversion should be referred immediately to a higher level of health care.

Secondary and Tertiary Health Care Levels:

Take blood for:

- PCV or Hb estimation
- grouping and cross-matching of 2 units of blood
- urea and electrolytes
- bedside clotting time and clotting profile

Treatment

Primary Health Care Level

Set up an intravenous infusion of Normal saline or Ringers lactate using a wide bore cannula or needle;

Apply Anti-Shock Garment if necessary;

Insert an indwelling urethral catheter;

Give analgesics for pain relief;

Refer to secondary or tertiary health care level.

Secondary and Tertiary Health Care Levels:

Maintain an IV infusion of Normal saline or Ringers lactate using a wide bore cannula or needle;

Monitor fluid intake and output;

Insert an indwelling urethral catheter to monitor urinary output;

Arrange Operative procedure in theatre to replace uterus as soon as possible, peeling the placenta off if still attached to the uterus under anaesthesia;

Give pethidine if the patient is in severe pain;

If bleeding continues, assess for possible Disseminated Intravascular Coagulation (see below);

Give prophylactic antibiotic;

If necrosis is suspected, perform vaginal hysterectomy instead.

DISSEMINATED INTRAVASCULAR COAGULOPATHY (DIC):

This is a condition in which the patient's blood does not clot. Disseminated intravascular coagulopathy (DIC) is an emergency that requires immediate transfusion of fresh whole blood or referral to centre where such facility is available.

Assessment/Identification of the Problem:

Take a history of:

- age and parity
- index pregnancy
- past obstetric history
- antepartum haemorrhage, especially abruptio placenta
- eclampsia
- amniotic fluid embolism
- intrauterine fetal death
- mode of delivery, including delivery of the placenta

Conduct a physical examination to:

- check for signs of shock (pallor, sweating, cold clammy extremities)
- check the vital signs

Examine the abdomen for uterine size, consistency and tenderness;

MANAGEMENT

Inspect for sites of bleeding, apart from vagina.

Investigations:

Primary Health Care Level:

Suspected cases of DIC should be referred immediately to a higher level of health care.

Secondary and Tertiary Health Care Levels:

Take blood for:

- FBC including platelets
- grouping and cross-matching of 4 units of fresh whole blood
- urea and electrolytes
- bedside clotting time and clotting profile
- liver function tests

Treatment:

Primary Health Care Level:

Refer immediately to a higher level of health care.

Secondary and Tertiary Health Care Levels:

Treat the possible causes of coagulation failure (eg abruptio placenta, eclampsia etc)

Give fresh whole blood to replace clotting factors and red cells;

If fresh whole blood is not available, chose one of the following based on availability:

- Fresh frozen plasma for replacement of clotting factors (15 ml/kg body weight)
- packed (or sedimented) red cells for red cells replacement
- cryoprecipitate to replace fibrinogen
- platelet concentrates (if bleeding continues and the platelet count is less than 20,000)

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