Kofinas Perinatal

Providing Care to the Unborn ®

GUIDELINES FOR THE MANAGEMENT OF 2ND AND 3RD TRIMESTER BLEEDING

Alexander D. Kofinas, MD
Director, Kofinas Perinatal
Associate Professor, Clinical Obstetrics and Gynecology
Cornell University, College of Medicine

1) OVERVIEW:

a) **Incidence:** the incidence of vaginal bleeding late in pregnancy is 3.8%. This alarming sign usually brings the patient in contact with the care provider who needs to evaluate the possible cause and significance of the bleeding.

b) Causes of bleeding

i) Bloody show
ii) Placenta previa
iii) Placenta abruptio
iv) Marginal sinus rupture
v) Cervical polyps or lesions
vi) Trauma
vii) Uterine rupture
viii) Vasa previa
ix) Invasive carcinoma of the cervix

The most common cause of serious bleeding in the 3rd trimester is placenta previa and placenta abruptio.

2) INITIAL MANAGEMENT OF THE PATIENT WITH VAGINAL BLEEDING:

a) **Outpatient evaluation:** in the presence of bleeding, gentle speculum exam may be done to:

i) Good history of bleeding
ii) Rule out local factors
iii) Inspect the vagina and cervix

Moderate to heavy bleeding requires hospital management at the appropriate level of care (In facilities with good neonatal and high risk services)

b) Hospital management

i) Good history of bleeding
ii) Begin IV fluids with large bore IV catheter
iii) Bed rest
iv) CBC, type and cross match, coagulation studies
v) Monitor vital signs
vi) Evaluate blood loss (maternal and fetal)
vii) Assess uterine activity
viii) No digital vaginal exam
ix) No rectal exam or enema
x) FHR monitoring
xi) Diagnostic ultrasound (for placental localization, ultrasonic signs of abruptio, gestational age, amniotic fluid estimation and fetal well-being)
xii) Gentle speculum exam for local causes

A double set-up should be done only if the ultrasound diagnosis is in doubt and the decision for delivery has been made.

3) POLICY STATEMENT:

a) **Monitoring:** The mother and fetus should be continuously attended by a nurse during an active bleeding episode. FHR and uterine contractions should be monitored.

4) PLACENTA PREVIA:

a) Signs and symptoms

i) Repeated bleeding episodes
ii) Usually not associated with abdominal pain or tenderness
iii) Fetal malpresentation may be present

iv) Usually not in labor

b) Management

i) Patient in labor at term: delivery according to clinical and diagnostic findings

ii) Patient not in labor at term: consider delivery (usually by cesarean section) if the fetus is mature or fetal condition is non-reassuring

iii) Patient in labor preterm: tocolytic agents with or without betamethasone may be indicated in normotensive patients when vaginal bleeding is minimal and there is no evidence of fetal compromise or apparent abruptio placentae

iv) Patient not in labor preterm:

(1) Expectant management if bleeding controlled (the usual activity restrictions should apply)

(2) Ultrasound follow-up every 2 weeks or more frequently if indicated

(3) Fetal well being assessment (fetal heart rate monitoring and / or Doppler as indicated)

(4) Deliver when fetal maturity is documented or when bleeding becomes uncontrollable

Caution: patients with placenta previa and more so those with placenta previa on the grounds of a previous cesarean section, have increased risk for placenta accreta and uterine atony. Even in otherwise normal patients, placenta previa (even low lying placenta) may cause significant atony of the lower uterine segment. Early recognition of this condition and proper application of external pressure by means of bimanual compression (one fist is in the vagina compressing the lower segment against the usually well contracted fundus) may prove life saving.

5) PLACENTA ABRUPTIO:

a) Signs and symptoms

i) Bleeding episode associated with abdominal pain

ii) Local tenderness or rigid uterus, i.e. increased uterine tone, may be present (may be difficult to palpate fetal parts and auscultate fetal heart tones)

iii) Labor is usually present and it may be associated with abnormal uterine activity

iv) Signs of fetal compromise or fetal death may be present

v) Coagulation studies may be abnormal

b) Management

i) Assessment of vaginal bleeding:

(1) Volume replacement with volume expanders and/or blood

(2) Monitor vital signs frequently, compare to previous values (pre-existing hypertension may mask hypovolemia) and track trends

(3) Hourly intake and output

(4) Follow Hb/Hct, and coagulation trends

(5) Check for orthostatic hypotension, if hypovolemia is in question, performing a tilt test may be of value (a tilt test is positive when there is a demonstrable increase in pulse and decrease in BP when the patient is sitting up as compared to prior values obtained with the patient in the horizontal position)

(6) Watch for signs of reversible early shock:

(a) Pallor

(b) Cold skin

(c) Tachypnea

(d) Tachycardia

(e) Decreased urine output

(7) Coagulopathy (DIC) – For management of DIC refer to appendix A:

(a) Abnormal clot observation test (blood in red top tube should clot in 4-8 minutes and not brake on shaking –clot stability)

(b) Abnormal coagulation profile (platelets, fibrinogen, PT, PTT, FSP, clot observation test and/or clotting time)

(c) Clinical signs

(i) Bleeding from gums

(ii) Bleeding from puncture sites

(iii)Hematuria

(iv) Ecchymosis and petechiae

(d) Clotting profile should be obtained as baseline with follow-up at 4-6 hours or more frequently if indicated

(e) Replacement of blood components, i.e. platelets may be necessary

c) Delivery

i) Cesarean section for maternal and/or fetal indications

(1) Non-reassuring fetal status

(2) Unstable maternal condition as demonstrated by vital signs, bleeding and/or abnormal coagulation factors

(3) In the absence of fetal compromise the replacement of blood volume and clotting factors should be done before cesarean section

ii) Vaginal delivery may be attempted if labor is progressing well and mother and fetus are stable, or mother is stable and fetus is dead

iii) Preterm fetus: if the mother and the fetus are stable, bleeding stops and coagulopathy is not present, expectant management may be appropriate

(1) Careful follow-up is required, since the longer the interval between diagnosis of abruption and delivery, the greater the risk of fetal loss and maternal complications

(2) Conservative management is frequently unsuccessful in prolonging gestation

d) Complications:

i) Maternal

(1) Isoimmunization

(2) Hemorrhagic/hypovolemic shock

(3) Disseminated intravascular coagulation (DIC)

(4) Postpartum hemorrhage

(5) Amniotic fluid embolism

ii) Fetal

(1) Fetal non-reassuring status

(2) Fetal demise

(3) Hypovolemia (in cases of placental trauma)

iii) Neonatal

(1) Prematurity

(2) Hypovolemia (in cases of placental trauma)

Appendix A

DESSEMINATED INTRAVASCULAR COAGULATION

GOALS OF THERAPY
Evaluation and elimination of underlying cause
Prevention of clinical hemorrhage
Normalization of clotting profile

MANAGEMENT PROTOCOL
1. Identify and treat the underlying cause
2. Volume replacement and component therapy, including fresh frozen plasma, platelets, and packed red cells (as indicated by specific laboratory abnormalities).
3. Anticoagulant therapy (only if steps 1 and 2 are unsuccessful):
   3.1. Low-dose heparin (5000 U sq q 8-12 hours).
   3.2. Antithrombin III concentrates.
   3.3. Therapeutic heparin 5000 U IV, then 1000-2000 U IV q 4 hours).
4. Inhibition of residual fibrinolysis (only if steps 1,2, and 3 are unsuccessful):
   4.1. Epsilon-aminocaproic acid 4-6 g, q 4-6 hours. (Caution: be alert for ventricular arrhythmias, hypotension, hypokalemia, and hemorrhage from the placental site.)

CRITICAL LABORATORY TESTS
CBC, platelet count, fibrinogen, fibrin split products, PT, PTT, red cell morphology, protamine sulfate assay, antithrombin III level

CONSULTATION
Hematology

Appendix B

HYPOVOLEMIC SHOCK

GOALS OF THERAPY

1) Maintain systolic pressure ≥ 90 mmHg
   a) urine output ≥ 25 mL/hr
   b) normal mental status
2) Eliminate source of hemorrhage
3) Avoid overzealous volume replacement leading to non-cardiogenic pulmonary edema

MANAGEMENT PROTOCOL

1) Establish two large-bore intravenous lines
2) Place patient in Trendelenburg position
3) Rapidly infuse D_2RL solution while blood products are obtained
4) Infuse whole blood or packed red blood cells, as available
5) Infuse platelets and fresh frozen plasma only as indicated by documented deficiencies in platelets (< 50000/mL) or clotting parameters (fibrinogen, PT, PTT)
6) Search for and eliminate source of hemorrhage
7) Use invasive hemodynamic monitoring if patient fails to respond to clinically adequate volume replacement

CRITICAL LABORATORY TESTS

CBC, platelet count, fibrinogen, PT, PTT, clotting time, clot retraction test (red top tube test), arterial blood gases