King Abdul Aziz University

POSTPARTUM HAEMORRHAGE AND OBSTETRIC SHOCK

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Content:

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- Causes
- Predisposing factor
- How to evaluate haemorrhage
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- Management
- Definition of Obstetric shock
- Systemic approach to diagnosis and management

DEFINITION OF PPH:

Blood loss in excess of 500 mls during the first 24 hours after delivery

At vaginal delivery 500 mls

At cesarean section 1000 mls

Types: Early: 1st 24 hours

Late: after 24 hours – 6 weeks

Incidence: 4%

Causes:

1. Uterine atony
2. Genital tract trauma
3. Retained placental tissue
4. Low placental implantation
5. Uterine inversion
6. Coagulation disorders

I – Uterine Atony (75% - 80%)

Causes:

- General anesthesia: Halogenated hydrocarbon
- Over distended uterus
  large fetus, twins, hydramnios
- Following prolonged labour
- Following very rapid delivery
- Following oxytocin induced labour
- High parity
- Uterine atony in previous pregnancy
- Chorioamnionitis

II – Genital tract trauma

It is usually suspected if bleeding persists in the presence of a firmly contracted intact uterus.

Sites: Cervix, vagina, uterus

Diagnosis: Proper exposure of the upper vagina and cervix using sims speculum and two ovum forceps, under good sedation.

Uterine laceration can be associated by blood accumulation in the uterus and uterine atony.

PREDISPOSING FACTOR OF TRAUMA:

- Delivery of a large baby
- Mid forceps delivery
- Intra uterine manipulation
- Vaginal delivery after cesarean section, or any, uterine incision

VULVOVAGINAL HEMATOMA

Hematoma can be associated with early or late haemorrhage

Classification:

Vulvar haematoma classified according to their location in relation to the levator ani muscle,

a. Below levator, associated with vaginal delivery limited from spread by levator ani muscle

and limited from spread to the thigh by colle's facia and facia lata.

The central tendon of perineum prevents from spreading across the midline.

b. Supra levator associated with uterine rupture and dissect into the broad ligament and retroperitoneal space leading to hypovolemia.

RETAINED PLACENTAL TISSUE

Retained placenta is a common cause of bleeding late in the puerperium inspection of the placenta after delivery must be routine.

Retention of asuccenturiate lobe is an occasional cause of postpartum haemorrhage

PLACENTA ACCRETA, INCRETA, PERCRETA

As the consequence of partial or total absence of the decidua basalis and imperfect development of the fibrinoid layer (Nitabuch layer), placental villi are attached to the myometrium in placenta accreta.

If invade the myometrium in placenta increta

If penetrate through the myometrium in placenta percreta

ETIOLOGY

- Implantation in the lower uterine segment over previous cesarean section scar, or other uterine incision, or occurrence after uterine curettage.
- Placenta previa without prior uterine surgery incidence of placenta accreta is 4%.
- In patient with previous cesarean section and placenta previa the incidence of placenta accreta is 15% - 25%

LOW PLACENTA IMPLANTATION

Due to the relative decrease in the

Content musculature in the lower uterine segment which will be insufficient in controlling the placental site bleeding specially in placenta previa.

UTERINE INVERSION

- It is due to premature strong traction on an umbilical cord attached to a placenta implanted in the fundus of the uterus.
- It can be associated with placenta accreta.
- It is usually the cause of shock which tend to be disproportionate to blood loss.

CLASSIFICATION

- Acute
- Sub acute
- Chronic

COAGULATION DISORDERS

- Abruptio placenta
- Amniotic fluid embolism
- Retained dead fetus
- Inherited coagulopathy (Von-Wille brand's disease)
- DIC

CLASSIFICATION OF HAEMORRHAGE

- 4 CLASSES depend on volume lost
- 60 Kg pregnant woman has a blood volume of 6,000 ml at 30 weeks

1. Class I: – Volume loss of less than 900 ml, such patient rarely exhibit sign or symptoms of volume deficit.
2. Class II: – haemorrhage, blood loss 1200 ml to 1500 mls patient will show rise in pulse rate and / or possibly a rise respiratory rate. This class will have

or thostatic blood pressure changes, and narrowing of the pulse pressure.

3. Class III: Is defined as blood loss sufficient to cause overt hypotension

Blood loss of 18,00 mls – 2,100 mls

These patient will have marked tacchycardia, cold, lammy skin, tachypnea.

4. Class IV: Class 4 patients, the volume deficit exceed 40%

These patients are in profound shock absent pulse and oliguria.

PREVENTION

1. Identify patient at risk of postpartum haemorrhage
2. Prepare blood at least 4 units of packed red blood cells.
3. Active management of third stage of labour for all patients

4. Use of oxytocin infusion after placental delivery

5. Carefully inspection of the placenta and membrane

6. Use of oxytocin infusion in the umbilical vein to prevent retained placenta.

MANAGEMENT OF UTERINE ATONY

1. Patient showing signs of class II or greater volume loss should receive crystalloid intravenous fluids pending the arrival of blood and blood products.
2. Put two intravenous large – bore catheter and connected to IV fluids.
3. Insert fuley catheter to determine input and out put chart.

4. Inform anesthesia and keep patient nil per mouth
5. Ask for assistant
6. Bimanual compression and massaging of the uterus
7. Initial therapy include administration of a diluted solution of oxytocin (10 – 20 units) in 1,000 mls of physiological saline in a rate of 500 mls in 10 min.

8. If failed prostaglandin F2α the total dose is 1 – 2 mg diluted in 10 – 20 ml of saline
9. Use of mesoprestol rectaly in a dose 400 microgram
10. Intramural ergonovine

When pharmacological methods fail,surgical method should be under taken.

SURGICAL METHOD

1. Ligation of the ascending branch of the uterine arteries
2. Ligation of hypogastric artery
3. Hysterectomy
4. Uterine artery embolization

OBSTETRIC SHOCK

Hypotension without significant external bleeding

Causes:

1. Concealed haemorrhage
2. Uterine inversion
3. Amniotic fluid embolism

CAUSE OF CONCEALED HAEMORRHAGE

1. Spontaneous uterine rupture

2. Retroperitoneal bleeding from vaginal tears

3. Perineal hematoma

AMNIOTIC FLUID EMBOLISM

Rare, 1 of 30,000 deliveries
Mortality rate is 50%

The definitive diagnosis of AFE can be made by the demonstration of fetal squamous and Lanugo in the pulmonary vascular space.

CLINICAL PRESENTATION

1. Respiratory distress
2. Cyanosis
3. Cardio vascular collapse
4. Haemorrhage
5. Coma

TREATMENT

1. Endotracheal intubation and maximum ventilation and oxygenation
2. Restore cardio vascular equilibrium
3. Central monitoring of fluid therapy with a pulmonary artery catheter.
4. 40 – 50% risk of development of coagulopathy with in 1-2 hours, - DIC results in depletion of fibronogen, platelet and coagulation factor, so whole blood and fresh frozen plasma is essential.

MASSIVE BLOOD TRANSFUSION

- It is the replacement of a patient entire blood volume in 24 hours (10 units or more)

- It require base line investigation inform of CBC, platelet count, fibrinogen,prothrombin time (PT) partial thromboplastin time (PTT).

COMPLICATION OF MASSIVE TRANSFUSION

If more than 4 units of packed RBC,platelet count will drop, there will be consumption process (DIC)

Management, after 4 units transfusion, blood gas, PT, PTT has to be tested and continue with whole blood or fresh frozen plasma

PROGNOSIS OF POSTPARTUM HAEMORRHAGE

Women with postpartum haemorrhage should not die

1. Renal failure from prolong hypotension
2. Complication of blood transfusion:
   Immediate reaction: fever, itching
   Late complication: blood born infection
3. Sheehan syndrome – It is anterior pituitary necrosis causing failure of lactation, amenorrhea, atrophy of breast, loss of pubic and axillary hair, super involution of the uterus, hypothyroidism, adrenal cortical insufficiency.

BLOOD PRODUCTS

1. Whole blood
2. Packed red blood cells, most effective and efficient way to provide increase oxygen carrying capacity to the anemic patient, less transfusion reaction due to lack of WBC , has less coagulation factor.
3. Platelet

   1 unit of platelet increase, platelet count between 5,000 and 10,000/µl

4. Cryoprecipitate :

Prepared by warming fresh frozen plasma

and collecting the precipitate.

Factor VIII, vonwillebrand's factor and fibrinogen

One unit of cryoprecipitate will raise the serum fibrinogen 10 mg / dl

5. Fresh frozen plasma

1 unit of FFP should be given for every 4 units of transfused blood.

THANK YOU