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**16.0 OBJECTIVES**

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At the end of this unit, you should be able to:

- enumerate complications of third stage of labour;
- discuss the role of third stage complications in maternal mortality and morbidity;
- define post partum haemorrhage (PPH) and enumerate immediate causes and predisposing conditions leading to PPH;
- utilize knowledge gained for diagnosing the etiological factor responsible for PPH and managing the case;
- describe the types of adherent placenta and their management;
- explain the etiology of the inversion of uterus and its diagnosis; and
- enumerate skills which you need to learn to save life of a woman in case of third stage complication.

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**16.1 INTRODUCTION**

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You have already learnt about normal third stage of labour in Unit 11. In this unit you will learn about different complications of third stage of labour and their significance in relation to maternal mortality and morbidity. Post partum haemorrhage is discussed in detail as it is

one of the common complication and major cause of maternal mortality as a direct as well as an associated cause. Immediate causes and predisposing conditions for PPH are listed and their diagnosis and management are described. Though rare, etiology, clinical diagnosis and management of different types of adherent placenta and inversion of uterus are discussed. This will help you in timely diagnosing the condition, and giving prompt treatment and referral, if you are not in well equipped hospital. This action will be useful in saving life of the woman.

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## 16.2 COMPLICATIONS OF THIRD STAGE OF LABOUR AND THEIR SIGNIFICANCE

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### 16.2.1 Complications of Third Stage of Labour

Following are different types of third stage complications:

- 1) Post Partum Haemorrhage
  - Atonic
    - a) Hypotonic uterus
    - b) Retained placenta, placental bits and membranes of blood clots
  - Traumatic
    - a) Lacerations (perineal, vaginal, cervical)
    - b) Rupture uterus
  - Other causes
    - a) Coagulation defects
    - b) Hepatic
- 2) Abnormally adherent placenta
  - Placenta accreta
  - Placenta increta
  - Placenta percreta
- 3) Obstetric shock
  - Inversion of uterus
  - Amniotic fluid embolism.

### 16.2.2 Significance of Third Stage Complications

All over world, majority of maternal deaths are in postnatal period. Haemorrhage is one of the leading causes of maternal mortality. Amongst various types of obstetric hemorrhages, e.g. abortion bleeding, ruptured ectopic pregnancy, placenta previa, abruptio placenta and post partum haemorrhage. Post partum haemorrhage is the leading cause of maternal death. One quarter of the deaths from obstetric haemorrhage is due to PPH. Maternal mortality records consider PPH as the direct cause of death. PPH is often an associated factor in deaths from other direct causes, such as obstructed labour and sepsis.

Placenta may not separate due to simple adhesion. When it is not separated from uterine wall, there is no bleeding, but may cause shock if retained for a long period (more than 30 minutes). Partial separation of placenta results in profuse bleeding.

Abnormally adherent placenta is rare but a serious problem. You cannot leave placenta inside the uterine cavity. Abnormally adherent placenta may be total or partial. Partial separation cause bleeding. While separating the placenta from uterine wall, if plane of

**Abnormal Labour and Puerperium** cleavage is not defined, forceful separation will cause severe bleeding and may even cause perforation. Such types of complication may need hysterectomy.

Inversion of uterus leads to severe circulatory collapse as well neurologic shock. It is rare but fatal if not detected in time and skillfully handled. In similar way amniotic fluid embolism is also a serious life threatening condition.

Apart from mortality, these complications are responsible for high maternal morbidity due to hypovolemic shock, surgical intervention, anaesthesia, blood transfusion and sepsis.

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## 16.3 POST PARTUM HAEMORRHAGE

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### 16.3.1 Definition

Post partum haemorrhage is defined as the loss of 500 ml or more of blood from the genital tract after delivery of the baby. The amount of blood loss of 500 ml or more for defining PPH is accepted internationally, but it is an arbitrary figure. Exact blood loss cannot be measured accurately. Diagnosis of PPH is a clinical diagnosis and can be defined as blood loss from the genital tract after delivery of the baby, severe enough to cause hemodynamic instability in the woman.

PPH occurring within 24 hours of delivery is known as primary hemorrhage. All cases of PPH occurring between 24 hours after delivery of the baby and six weeks post partum are known as secondary PPH. We will consider here primary PPH as a complication of third stage.

### 16.3.2 Immediate Causes of PPH

Causes responsible for PPH may act singly or jointly. It is better to classify causes according to underlying pathology.

#### 1) Failure of Compression of Blood Vessels at Implantation Site

This may be due to

- a) Hypotonic myometrium (\*)
- b) Retention of placenta (\*)
- c) Retention of placental tissue, membranes and blood clots.

**Hypotonic myometrium** can occur in following conditions:

- General anaesthesia (specially with halogenated compounds and ether)
- Poorly perfused myometrium (Hypotension due to haemorrhage)
- Over distended uterus
  - Large foetus
  - Multiple pregnancy
  - Hydroamnios
- After prolonged labour
- After precipitate labour
- Grand multiparity
- Induction with oxytocin
- Uterine infection
- Previous haemorrhage from uterine atony

**Retention of placenta or placental tissue** can occur as a result of

- Abnormally adherent placenta (placenta accreta, percreta, increta)
- No abnormality of adherence (placenta not separated but plane of cleavage is present)
- Succenturiate lobe

## 2) Trauma to Genital Tract

Various types of trauma to genital tract can lead to PPH.

These trauma may be present in form of:

- Large episiotomy
- Lacerations of perineum, vagina and cervix
- Rupture uterus

Trauma may be spontaneous or iatrogenic, Iatrogenic trauma may be due to forceps delivery, episiotomy.

## 3) Inversion of Uterus\*

## 4) Coagulation Defects

- Acquired (Disseminated intravascular coagulation) \*
- Congenital

**Note:** Causes marked (\*) are associated with high case fatality rate.

### 16.3.3 Predisposing Conditions

Frequency and case fatality rate of PPH are higher among women who have certain predisposing conditions, If these conditions can be identified preventive measures can be taken and fatality due to PPH can be reduced. Some of these conditions are already existing in a woman, some arise during antenatal period, while some arise during labour. Following table shows these predisposing conditions:

Predating Pregnancy	Arising antenatally	Arising during labour
<ul style="list-style-type: none"> <li>● Primigravidity</li> <li>● Grand mulparity: (+5)</li> <li>● Fibroid</li> <li>● Idiopathic thrombocytopenic purpura (*)</li> <li>● Anaemia</li> </ul>	<ul style="list-style-type: none"> <li>● Placenta praevia</li> <li>● Placenta praevia with previous cesarian section (*)</li> <li>● Abruptio placenta</li> <li>● Polyhydramnios</li> <li>● Multiple pregnancy</li> <li>● Previous third stage complication</li> <li>● Intrauterine death (*)</li> <li>● Eclampsia</li> <li>● Hepatitis</li> </ul>	<ul style="list-style-type: none"> <li>● Induced labour</li> <li>● Prolonged obstructed labour</li> <li>● Precipitate labour</li> <li>● Forceps delivery</li> <li>● Cesarian section</li> <li>● General/Epidural anaesthesia</li> <li>● Chorioamnionitis (*)</li> <li>● Disseminated intravascular coagulation (*)</li> </ul>

(\*) associated with high cases fatality rate.

Haemorrhage can occur before delivery of the placenta or after delivery of the placenta. There may be gush of blood, It may be a steady trickle leading to hypovolemia, Effect on mother depends on her prepregnancy hypervolemia, and her haemoglobin status.

Sometimes external bleeding is not visible. It goes on collecting inside the uterine cavity and cavity goes on distending, In this type of PPH, fundal height goes on increasing.

Because of haemorrhage leading to hypovolemia, there is increasing pallor, cold extremities, tachycardia and fall of blood pressure.

### **16.3.5 Diagnosis of Etiological Factor**

You have already learnt various etiological factors, working singly or jointly, causing PPH. As management differs according to etiological factor, it is imperative to find out the immediate cause and associated condition responsible for PPH. Knowledge gained here will help you to improve your clinical skill for diagnosing the cause of PPH.

It is important to diagnose whether bleeding is from an atonic uterus or from lacerations. PPH from atonic uterus is known as atonic PPH while PPH due to injury in genital tract is known as traumatic PPH.

**Atonic PPH:** Do per abdominal examination to palpate the uterus and feel its consistency and shape. Atonic uterus is palpable as flabby and ill defined mass. Palpation of a firm to hard, globular uterus just below umbilicus in midline rules out atonic uterus.

It is important to find out whether bleeding has started before or after the delivery of placenta. If there are already signs and symptoms of separation of placenta but it has not yet delivered, it suggests retention of placenta in the uterine country.

In a case of atonic PPH where placenta is already delivered, placenta is examined. Inspect the maternal surface and look for any missing cotyledons. Hold the placenta by umbilical cord and let the membranes hang like an inverted umbrella. At the opening where membranes have ruptured, two layers (Chorion and Amnion) should be present.

**Traumatic PPH:** If bleeding persists in a case having well contracted uterus, most probably the cause of haemorrhage is trauma. Suspect traumatic PPH also when there is an instrumental delivery, precipitate labour or vaginal delivery in a case of previously scarred uterus.

Inspection of perineum will help you to find out the **laceration on the perineum**. Careful per speculum examination will help to diagnose **vaginal and cervical injuries**. Good light and efficient assistant are required for better visualization. Large Sims speculums, and 3 to 4 sponge holding forceps with several mops are necessary for proper exposure and keeping the field clean. You must inspect all vaginal walls to find out laceration if any.

**Cervical injuries** are of two types.

- 1) Lateral cervical tear (Unilateral or bilateral)
- 2) Bucket handle tear.

To identify lateral tears of the cervix, apply one sponge holding forceps on the visible edge of the cervix as a marker. Now trace the edge of the cervix with another two sponge holding forceps alternately shifting the sponge holding forceps as you go around the cervix till the whole circumference of the cervix is traced. Break in continuity indicates cervical injury. Once torn cervix is identified, catch other edge of torn cervix as shown in Fig. 16.1 and see for the length of the tear by locating the apex of the tear. Non-visibility of the apex of the tear suggests the extension of the tear more upwards. It is more serious and need laparotomy to see further extension and management.

**Fig.16.1: Repair of laceration of the cervix**

Bucket handle tear of the cervix is known in a case of os tightening where stitch is not removed and labour has progressed. It bleeds severely. Cervical edge gets torn like a handle of a bucket.

Suspect **rupture of a uterus** in a case of :

- Vaginal delivery with scar in the uterus. Scar may be of previous cesarian section or myomectomy or repair of uterine anomaly or repair of previous perforation.
- Instrumental delivery in form of forceps delivery or destructive operation on foetus.
- Manual procedures like internal podalic version
- Manual removal of placenta.

Exploration of uterine cavity is required to find out the injury. One hand is kept on abdomen to fix the uterus. Another gloved hand is introduced in vagina and through cervix to the uterine cavity. Palpate the rent or tear. Closeness of fingers of both hands with only abdominal wall in between will guide you in diagnosis of rupture of uterus. This examination should be very gentle. Preferably it should be done in operation thereafter under anaesthesia. In a woman with good general condition one can do it gently as a prophylactic measurement in a case of forceps delivery, or vaginal delivery in a cases of previous cesarean section before sever PPH has established.

When on per abdominal examination, uterine fundus is not palpable or palpable but with cup shaped depression, **inversion of uterus** is suspected. Woman is in severe shock. Per speculum examination will show inverted endometrial surface.

**16.3.6 Management**

Figs.16.2, 16.3 and 16.4 will be useful to you for understanding the management of PPH at various level. You may come across a case of PPH at home, or at health centre or at well equipped hospital. Fig.16.2 suggests management at home, Fig. 16.3 suggests management at health centre and Fig.16.4 suggests management at well equipped hospital.

**Suggested Prophylactic Management**

It is possible to reduce the incidence of PPH to some extent.

This is possible by:

- 1) Use of partograph with alert and action line: This may reduce the incidence of prolonged labour and thereby PPH.
- 2) Timely episiotomy: Episiotomy given too early may result in excessive bleeding. It should be given at the time of crowning of head only.

- Abnormal Labour and Puerperium**
- 3) Use of vacuum extractor instead of forceps wherever possible to avoid cervical and vaginal lacerations.
  - 4) Ergometrine 0.25 mg or I/V Methergin 0.2 mg given with the delivery of anterior shoulder routinely will help in minimising the incidence of atonic PPH.

### **Management of Primary PPH**

#### **1) Management of Atonic PPH with Retained Placenta**

You have already learnt about the diagnosis of atonic uterus and retained placenta. For managing this situation encourage woman to pass urine or do catheterization. For separated but retained placenta, placenta can be delivered by Brandt-Andrews method.

**Brandt-Andrews method:** Separation of the placenta and its descent into the open cervix or upper vagina is tested by holding the clamp on the cord in one hand and gently pushing the uterus up towards the diaphragm by keeping the other hand over the lower segment on abdomen in suprapubic region. If slight tension is felt in the cord, repeat the procedure gently several times. Placenta will come in lower vagina and will deliver out. If the procedure causes increased tension in the cord, it suggests closed cervix.

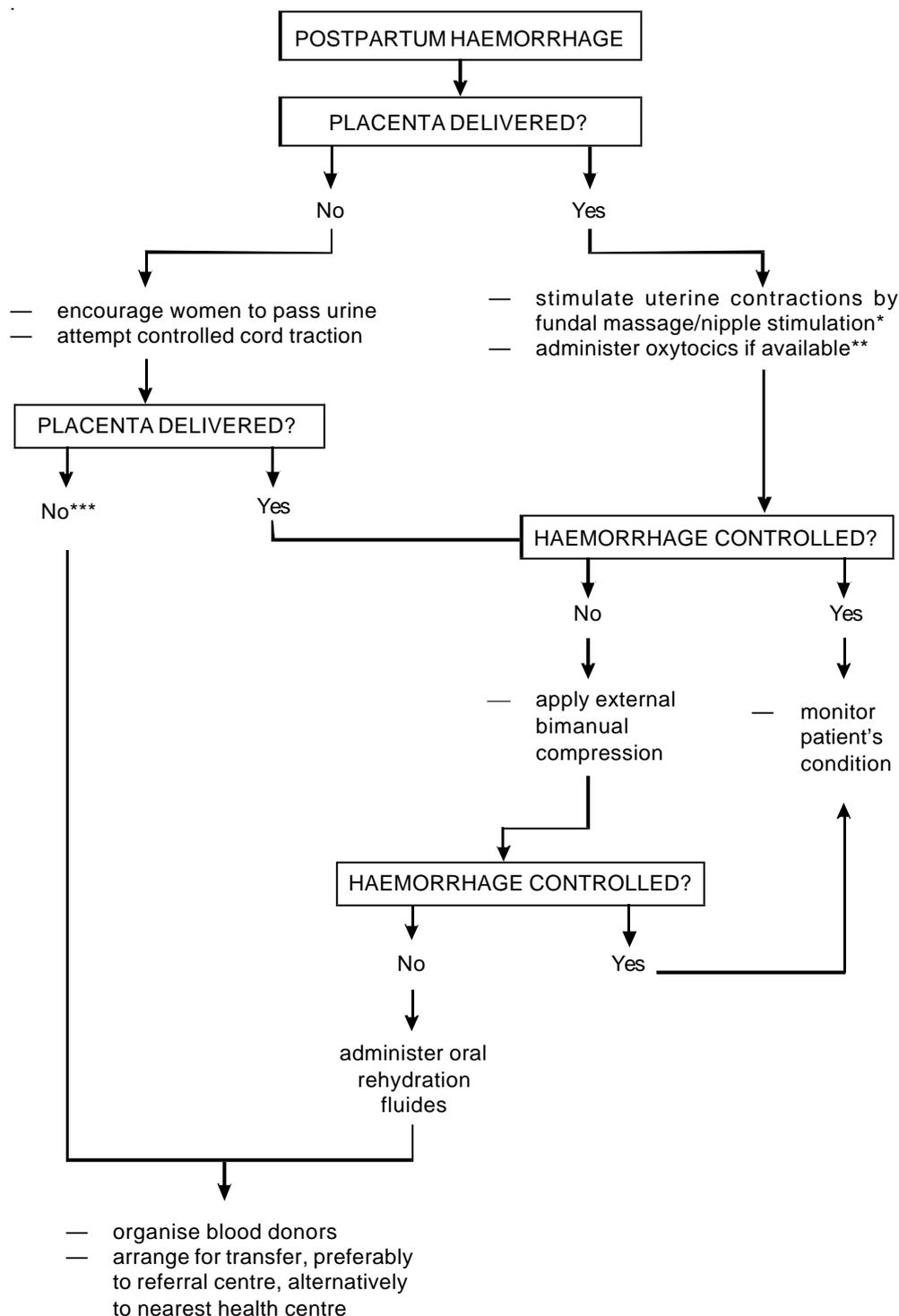
Inspect the placenta for its completeness. After delivery of the placenta, uterus should be stimulated to contract. This can be done by fundal massage, bimanual compression of the uterus, intravenous or intramuscular oxytocic, or intravenous infusion of normal saline with oxytocin (40 units in 1000 ml at a rate of 40 drops per minute).

If Brandt-Andrews technique has failed, or cord has broken or if part of placenta is retained, do **gentle vaginal examination**. If placenta or its part is felt, after steadying the uterus with the other hand on the abdomen, grasp the placenta and remove it slowly.

If previous methods fail to deliver placenta, do **manual removal of the placenta**. It should be performed under anaesthesia or intravenous analgesics and/or sedatives. Aseptic precautions should be observed strictly. Put one hand on abdominal wall and steady the uterus and the other hand is introduced into the vagina and passed into the uterus along the umbilical cord. Once the placenta is reached and its margin is located, insinuate the ulnar border of the hand between margin of the placenta and uterine wall. Gradually with back of hand in contact with the uterine wall, placenta is peeled off its uterine attachment by a motion similar to that employed in separating leaves of the book. In other words, fingers are alternatively abducted, adducted and advanced until the placenta is completely detached (Fig. 16.5). After complete separation, placenta should be grasped with the entire hand and slowly delivered out. Membranes should be delivered at the same time using the sponge holding forceps. Oxytocin should be given after the procedure. Antibiotics cover is necessary following the procedure. **Haemorrhage from Retained Placental Fragments or Succenturiate Lobe** need uterine exploration and evacuation.

#### **2) Management of Atonic PPH after Delivery of Placenta**

- Repeat ergometrine/methergin/prostaglandin
- Sustained contraction of uterus is preferred by bimanual compression and/or oxytocic. Bimanual compression consists simply of massage of the posterior aspect of the uterus with the abdominal hand and massage through the vagina of the anterior uterine aspect with the other fist, the knuckles of which contact the uterine wall (Fig.16.6).
- Review the nature of labour to find out cause of atonic PPH as well traumatic PPH. Sometimes both type of PPH are present.
- Reexamine the placenta to ensure its completeness.
- If you are in a health centre, in cases of persistent bleeding do inspection of perineum, vagina and cervix to find out traumatic site as well as chief source of bleeding. If any major bleeding site, suture it under local anaesthesia. If one cannot suture the bleeding vaginal or cervical site, pack the vagina with sterile roller gauze or rolled up mop. Push it with gloved fist and keep it there. With other hand, apply pressure on the uterine fundus. Transfer the patient to well equipped hospital.



\* Research is needed on the efficacy of these procedures

\*\* Research is needed on alternative methods of administration of oxytocics by TBAs.

\*\*\* Where there is no possibility of transfer, it may be necessary to train TBAs to undertake manual removal of placentae. Research is needed to determine the effectiveness, feasibility and value of such training

**Fig.16.2: Domiciliary delivery (TBA with limited midwifery training)**  
(Ref. : WHO 90455)

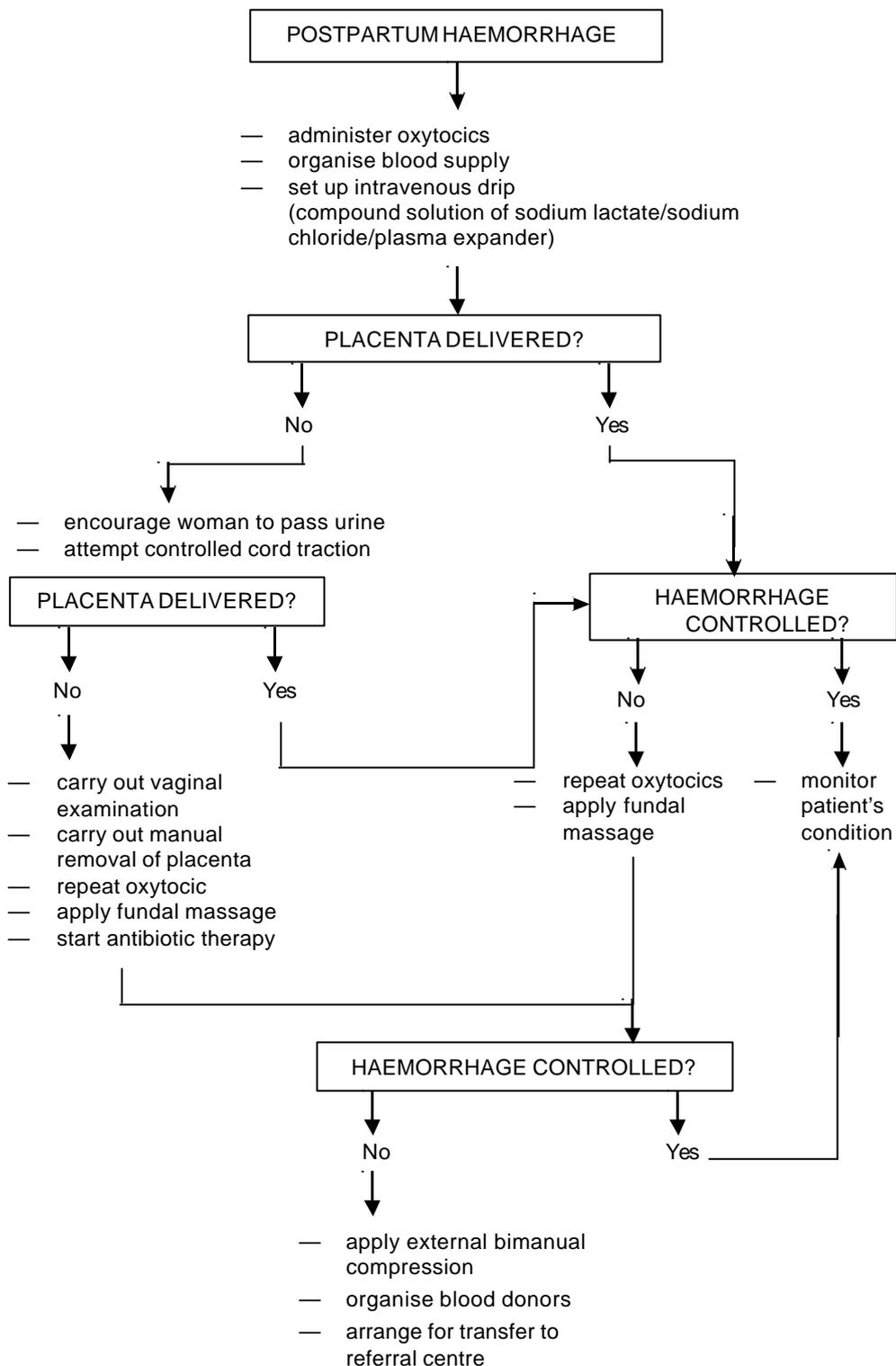


Fig.16.3: Health Centre (nurse/midwife:limited operative facilities)  
(Ref. : WHO 90456)

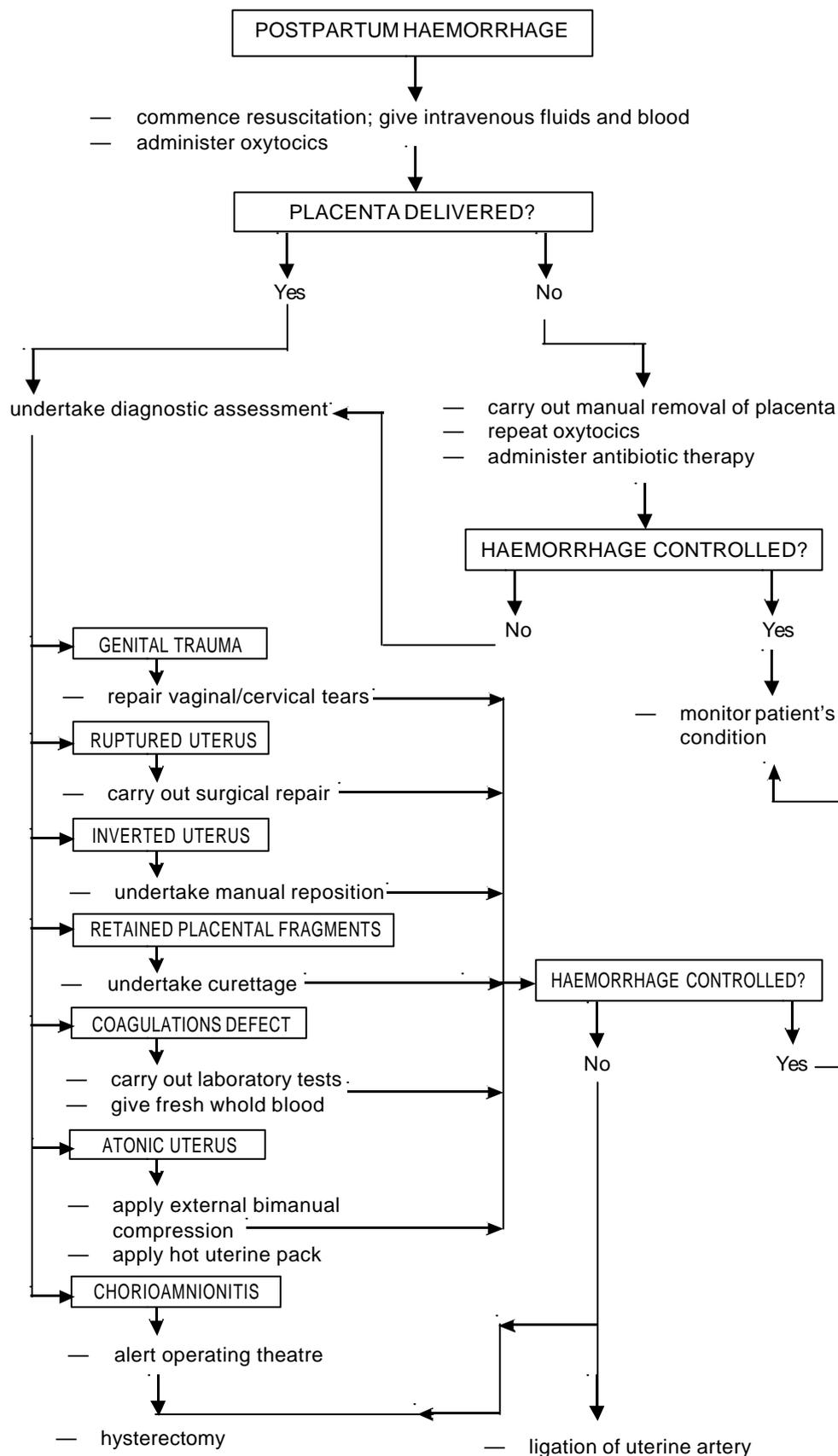


Fig.16.4: Referral Centre (doctor/obstetrician)  
(Ref. : WHO 90457)

**Fig. 16.5: Manual removal of placenta. The fingers are alternately abducted, adducted, and advanced until the placenta is completely detached.**

- Meanwhile maintain general condition of woman and correct shock as per availability of measures. Oral rehydration, coconut water can be given to maintain hydration, if nothing else is available.
- Encourage relatives for blood donation and send them with the patient.
- In well equipped hospital send the blood for grouping, crossmatching and start blood as early as possible. In case of persistent bleeding, examination under anaesthesia should be performed to identify and suture traumatic site.
- If available, prostaglandin  $F_2$  or  $E_2$  has better oxytocic effect. It can be given intravenously. Prostaglandin ( $F_2$  **a**) can be given directly into myometrium.

### 3) Management of Traumatic PPH

Laceration of perineum, vagina and cervix need suturing. In perineal injury, third degree tear or complete perineal tear need skillful repairing to reconstruct the anal sphincter. Otherwise it will persist as morbidity and lead to incontinence of stool.

Paraurethral, submeatal and clitoral tears bleed heavily because of great vascularity. If these types of tears are present, place self retaining catheter in urethra and then suture continuously with fine catgut (3/0 or 4/0) on eyeless needle.

Vaginal tears may be at more than one place. Suture by figure of 8 stitch or continuous locked stitch with chromic catgut and round body curved needle. One can pack vagina with roller gauze pack after suturing and can remove after 6 hours.

Cervical tears suturing should be sutured with atraumatic needle starting from apex of the tear. Application of sponge holding forceps on each edge of tear at its beginning will be

useful for slight gentle traction. This will facilitate suturing beyond apex for perfect hemostasis (Fig. 16.6).

**Fig. 16.6: Bimanual compression of the uterus and massage with the abdominal hand usually will effectively control hemorrhage from uterine atony.**

Rupture uterus require immediate laparotomy. For this if you are in health centre, you should refer the case to well equipped hospital after primary management (See unit of emergency and referral). In referral hospital anyone of the following management is given according to her general condition, obstetric history and condition of the uterus. In primigravida, efforts are made to preserve the uterus unless that is unrepairable. In multigravida with living children, usually, if general condition permits, hysterectomy is performed. If this much time is not available, suturing of a torn area is done and tubectomy is also done to prevent this type of recurrence in future.

4) **Inverted Uterus**

(See sub-section 16.5.1)

5) **Other Causes**

Other causes of PPH must be kept in mind like coagulation defects, hepatic conditions. Past history, family history, associated jaundice will help you to find out these etiological factors. Necessary laboratory investigations like bleeding time, clotting time, platelet count, total W.B.C. count, serum bilirubin, liver function tests confirm the diagnosis.

**Check Your Progress 1**

- 1) Enumerate fatal complications of third stage of labour.
  - a) .....
  - b) .....
  - c) .....
  - d) .....
  - e) .....
- 2) Fill in the blanks:
  - a) Amongst maternal deaths due to obstetric hemorrhage ..... of maternal deaths are due to PPH.

**Abnormal Labour and Peurperium**

- b) Loss of ..... ml or more of blood from genital tract after delivery of a baby is known as PPH.
  - c) Two common immediate causes of PPH are ..... and .....
  - d) ..... examination of uterus is important to diagnose atonic uterus, while ..... examination is important to diagnose traumatic cause of PPH.
- 3) Enumerate predisposing conditions of PPH arising during antenatal period.
- a) .....
  - b) .....
  - c) .....
  - d) .....
  - e) .....
  - f) .....
  - g) .....
- 4) Describe the procedure of manual removal of placenta in six to seven lines.
- .....
- .....
- .....
- .....
- .....
- .....

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## **16.4 ABNORMALLY ADHERENT PLACENTA**

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Sometimes placenta is unusually adherent to the implantation site, with scanty or absent decidua. In such cases there is no line of cleavage through the spongy layer of the decidua. As a result one or more cotyledons are firmly adherent to the defective decidua or even to myometrium.

### **16.4.1 Definition**

Placenta accreta is termed to any implantation of placenta in which there is abnormally firm adherence to the uterine wall. But in reality when placental villi are attached to the myometrium it is called placenta accreta, when villi invade the myometrium it is called Third Stage of Labour and its placenta increta and when villi penetrate the myometrium, it is called placenta percreta. Placenta accreta may be partial or complete.

### **16.4.2 Etiologic Factors**

Implantation of the placenta in the lower uterine segment, at previous uterine incision of cesarian or myomectomy, or after uterine curettage may lead to adherent placenta.

### **16.4.3 Clinical Characteristics**

According to etiology, if there is placenta previa, patient may have antepartum haemorrhage.

In partial adherent placenta, it may lead to retained cotyledon or excessive bleeding if placenta is pulled and adherent cotyledon gets irregularly torn. If placenta does not separate spontaneously, attempts to deliver may lead to more bleeding.

In completely adherent placenta, there are no signs of separation of bleeding. Diagnosis is made when manual removal of placenta is tried. Procedure will not succeed. Attempts will lead to severe bleeding.

#### 16.4.4 Management

Prompt hysterectomy is the line of treatment. Placenta percreta is most life threatening than placenta accreta and increta. Blood transfusions should be given to recover lost circulating volume.

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### 16.5 POST PARTUM COLLAPSE

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Small minority of cases go for post partum collapse after delivery without haemorrhage. For diagnosing the etiology, one should keep in mind that:

- i) Blood is being lost but is not externally obvious.
- ii) Other causes of shock are present.

Severe hypotension leads to accumulation of metabolites in capillaries and consequent cellular hypoxia. Sympathetic over activity leading to pre and post capillary sphincter constriction leads to accumulation of metabolites, acidosis and hypoxia. Cell integrity is impaired and there is accumulation of interstitial and intracellular fluid from the intravascular compartment. Later proteins and R.B.C. also collect. Due to maldistribution of blood flow and endothelial destruction, there is cardiovascular insufficiency manifesting as markedly decreased cardiac output. If prolonged, it may lead to multiple system organ failure. Renal function gets impaired when blood pressure is below 80 mm of Hg.

Oliguria followed by anuria may result. Clinically there is sweating, restlessness, subnormal temperature and oliguria.

Management of such a case need general care as well as specific management. Suggested steps are:

- Control haemorrhage if present
- Ensure patent airway
- Intravenous line with saline/Ringer lactate running
- Collect blood sample when intravenous line is taken and sent for crossmatching.
- Start oxygen by mask or by IPPV if required (Intermittent positive pressure ventilation)
- Injection Morphine
- Elevate foot end of bed
- Cardiopulmonary resuscitation
- Dopamine drip to maintain blood pressure for renal perfusion if BP does not come up after I/V fluid replacement.
- Corticosteroid in large doses

After general measures, look for specific cause like

- Inversion of the uterus
- Amniotic fluid embolism
- Massive pulmonary embolism

#### 16.5.1 Inversion of the Uterus

Acute inversion of a uterus is a rare condition. Inversion may be complete or incomplete. Complete inversion of the uterus is the result of strong umbilical cord traction of a placenta attached at uterine fundus, fundal pressure on a relaxed uterus or placenta accreta (Figs.16.7 and 16.8).

**Fig.16.7: Most likely site of placental implantation in cases of uterine inversion. With traction on the cord and the placenta still attached, the likelihood of inversion is obvious.**

Acute inversion is often followed by circulatory collapse. There is associated neurogenic shock due to pull on infundibulo pelvic ligaments. Patient needs immediate management as condition is fatal. Two intravenous routes are started. Under anaesthesia or intravenous analgesia, **manual replacement** should be tried. Inverted uterus outside the vagina should be replaced inside the vagina. Do not remove placenta if retained before vaginal replacement as it can lead to severe haemorrhage. Remove the placenta, put palm of the hand on the centre of the fundus and fingers at the margin of the cervix. Apply pressure with hand to push the fundus upward through dilated cervix. Do not start oxytocic before replacement. After replacement, when normal uterine configuration is restored, ask anaesthetist to stop anaesthetic agent given for relaxation. Simultaneously start oxytocic. One should give bimanual compression to stimulate the uterus and control the haemorrhage till uterine tone is regained.

If the uterus cannot be reinverted by vaginal manipulation, surgical intervention is required. Laparotomy is performed and uterus is pulled from abdomen and pushed from vagina. One has to be very gentle throughout the procedure. Sometimes a vertical incision on cervical ring is required if pulling is not possible through cervical ring. Incision can be sutured after inversion is corrected.

### 16.5.2 Amniotic Fluid Embolism

In this condition there is entry of liquor amnii within maternal circulation. It generally occurs during labour or within first few hours after delivery and is characterized by profound shock, tachycardia, dyspnoea, cyanosis and anoxia. Management generally consists of treating hypotension, maintaining cardiac output, and assisted ventilation to ensure adequate oxygenation. Coagulopathy occurs frequently and require to be treated.

### 16.5.3 Pulmonary Embolism

Usually pulmonary embolism occurs as a result of prior thrombosis in .the pelvic or leg veins. However occasionally it may occur without prior warning and manifest with chest discomfort, air hunger, tachypnoea, or other manifestations of respiratory distress. It may be associated with increasing cyanosis and rapid worsening of her condition. Often it is fatal. Diagnostic signs may not always be obvious. Management includes respiratory support together with anti thrombotic treatment by way of heparin.

## 16.6 EMERGENCY TRANSFER

When mother has delivered at home and she develops these types of third stage complications, she should be transferred to the health centre or hospital with help of relatives and health workers. Communication systems should be used. Local people must arrange for transfer. Relatives or young people should accompany for provision of blood. In blood loss, worker must use oxytocic and packing skill. Transfer should be by shortest route and at proper place where skilled person, blood transfusion services, operative facilities are available. During transport resucitative measurements and emergency treatment should be continued. Same principles are to be applied if patient is to be transferred from health centre to hospital. If you are the medical officer in a health centre or practicing doctor, you must learn bimanual compression of uterus in atonic uterus after delivery of placenta, skill of manual removal of placenta in a case of retained placenta, skill of examination of delivered placenta for its completeness, evacuation of uterus in a case of retained cotyledon, suturing of perineal, urethral, vaginal and cervical tears, vaginal replacement of uterus or manual correction of a uterus in a case of acute inversion. In case of transfer, transfer with intravenous drip, oxytocic if needed, and available resucitative measures. Give good referral note.

### Check Your Progress 2

- 1) Enumerate different types of adherent placenta and its underlying pathology.
  - i) .....
  - ii) .....
  - iii) .....

- Abnormal Labour and Puerperium**
- 2) Predisposing conditions of adherent placenta are:
    - i) .....
    - ii) .....
  - 3) Common etiological factors for inversion of uterus are:
    - i) .....
    - ii) .....
  - 4) Mention main line of management of following conditions against their name.
    - i) Placenta accreta : .....
    - ii) Inversion of uterus : .....
    - iii) Amniotic fluid embolism : .....

## 16.7 LET US SUM UP

This unit has discussed various third stage complications and explained their importance in relation to maternal mortality and morbidity. Post partum haemorrhage being a common complication and responsible for 1/3rd maternal deaths due to obstetric haemorrhage is discussed in detail. Skills required to be performed by you, which are life saving for mother, are described in detail.

## 16.8 ANSWERS TO CHECK YOUR PROGRESS

### Check Your Progress 1

- 1)
  - a) Post partum hemorrhage due to atony of myometrium and retained placenta
  - b) Inversion of uterus
  - c) Disseminated intravascular coagulopathy
  - d) Amniotic fluid embolism
  - e) Pulmonary embolism
- 2)
  - a) quarter
  - b) 500
  - c) atonic; traumatic
  - d) Abdominal; speculum
- 3)
  - a) Placenta previa
  - b) Placenta previa with previous cesarian section
  - c) Polyhydroamnios
  - d) Multiple pregnancy
  - e) Intra uterine death
  - f) Eclampsia
  - g) Hepatitis

## 4) Manual removal of placenta.

It is indicated in a case of retained placenta.

It should be performed under intravenous analgesia or anaesthesia.

One hand supports the fundus of the uterus and other hand is inserted into uterine cavity through vagina along the umbilical cord.

On reaching the placental margin, fingers should be insinuated between placenta and uterine wall. With alternate adduction and abduction movements of fingers placenta is separated and grasped in the hand.

Placenta is brought out. Strict aseptic precautions are to be observed.

**Check Your Progress 2**

- 1)
  - i) Placenta accreta : Placental villi adherent to myometrium.
  - ii) Placenta increta : Placental villi invaded the myometrium.
  - iii) Placenta percreta : Placental villi have penetrated the myometrium.
- 2)
  - i) Placental implantation at previous cesarian scar.
  - ii) Uterine curettage.
- 3)
  - i) Strong umbilical cord traction in a case of fundal implantation of placenta.
  - ii) Fundal pressure on relaxed uterus.
- 4)
  - i) Hysterectomy.
  - ii) Manual replacement of uterus.
  - iii) Respiratory support.

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## 16.9 FURTHER READINGS

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“The Prevention and Management of Postpartum Hemorrhage”, *Safe Motherhood*, WHO/MCH/90.7.

*Williams Obstetrics*, 20th edition, Prentice-Hall International Inc. 1996.