Third-Trimester Bleeding

- Approximately 4% to 5% of pregnancies are complicated by vaginal bleeding in the third trimester.
- Intercourse, trichomonas cervicitis, and recent pelvic examinations are common precipitants of spotting because the cervix is more vascular and friable in pregnancy.
- The two most common causes of significant bleeding in the third trimester are placenta previa and placental abruption. The paradigm is that painful bleeding usually means placental abruption, whereas painless bleeding usually means placenta previa.

BOX 16.1 Causes of Bleeding in the Second Half of Pregnancy

- Anal
  - Hemorrhoids
  - Trauma—tears and lacerations
- Vulvar
  - Varicose veins
  - Trauma—tears and lacerations
- Vaginal
  - Trauma—tears and lacerations
- Cervical
  - Labor
  - Cervicitis
  - Polyp
  - Ectropion
  - Friable glandular tissue
  - Trauma—tears and lacerations
  - Carcinoma
- Uterine
  - Uterine rupture
  - Placenta previa
  - Placental abruption
  - Vasa previa

HISTORY AND PHYSICAL EXAMINATION

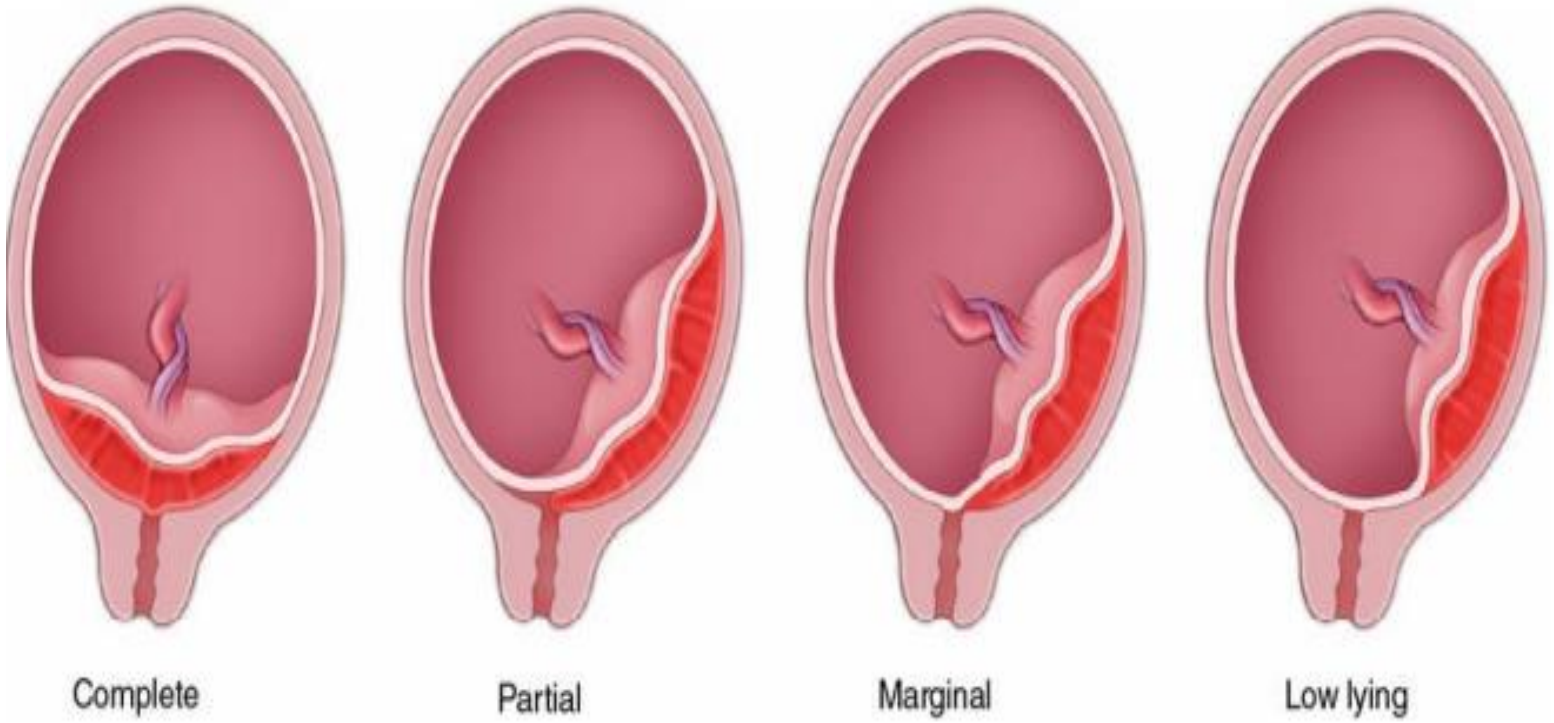
- A physical examination should always begin with maternal vital signs, although significant changes are not seen until the blood loss exceeds 10% to 15% of the total blood volume. The fetal heart rate should be auscultated
- A brief inspection for petechiae, or bruising, may be indicated if there is suspicion of a bleeding disorder including a coagulopathy.
- Bimanual pelvic examination should not be undertaken until placental position is confirmed by ultrasound.
- Instead, inspection of the vulva may be followed by a careful speculum examination of the vagina and cervix.

Bleeding

- Significant bleeding is an obstetric emergency requiring immediate management, including ongoing monitoring of vital signs and placement of sufficient large-bore IV lines for the rapid administration of crystalloid fluid, blood, and blood products.
- Patients who are Rh D-negative may require immunoglobulin to protect against the Rh D antigen.
- Staff should be ready for delivery.

PLACENTA PREVIA

- Placenta previa is a placental location close to or over the internal cervical os and is associated with an increase in preterm birth and perinatal mortality and morbidity.
- It can be classified as complete, in which the placenta completely covers the internal os, or partial, in which the placenta overlies part but not all of the internal os. A placental edge within 2 centimeters of the internal os without covering it is called a marginal previa while a placenta that extends into the lower uterine segment but is more than 2 centimeters from the os is called a low-lying placenta .


Complete
Partial
Marginal
Low lying

- Painless bleeding in the third trimester is classically associated with placenta previa.
- In general, placenta previa occurs in about 1 in 200 pregnancies. The incidence of placenta previa earlier in pregnancy (approximately 24 weeks) is 4% to 5% and decreases with increasing gestational age.
- Complete placenta previa rarely resolves spontaneously, but partial and low-lying placenta previa will often resolve by 32 to 35 weeks of gestation. The mechanism of this resolution does not involve an upward “migration” of the placenta but, rather, a stretching and thinning of the lower uterine segment, which effectively moves the placenta away from the os.

Diagnosis, Etiology, and Risk Factors

- Transvaginal ultrasonography is more accurate in diagnosing placenta previa than abdominal ultrasonography, which gives many false-positive results, particularly when the placenta is located posteriorly.
- Risk factors for placenta previa include placenta previa in a prior pregnancy (4% to 8% recurrence), prior cesarean delivery or other uterine surgery, multiparty, advanced maternal age, cocaine use, and smoking. Placenta previa has been associated with a slight increase in fetal anomalies, although the precise mechanism is unclear. These anomalies include severe cardiovascular, central nervous system, gastrointestinal, and respiratory abnormalities.

Management

- Close observation, frequent blood pressure measurements, fluid administration, bed rest, and administration of steroids for fetal lung maturity may be appropriate if the fetus is premature and the bleeding is not heavy enough to warrant immediate delivery. The bleeding is usually painless, except when it is associated with labor or abruption.

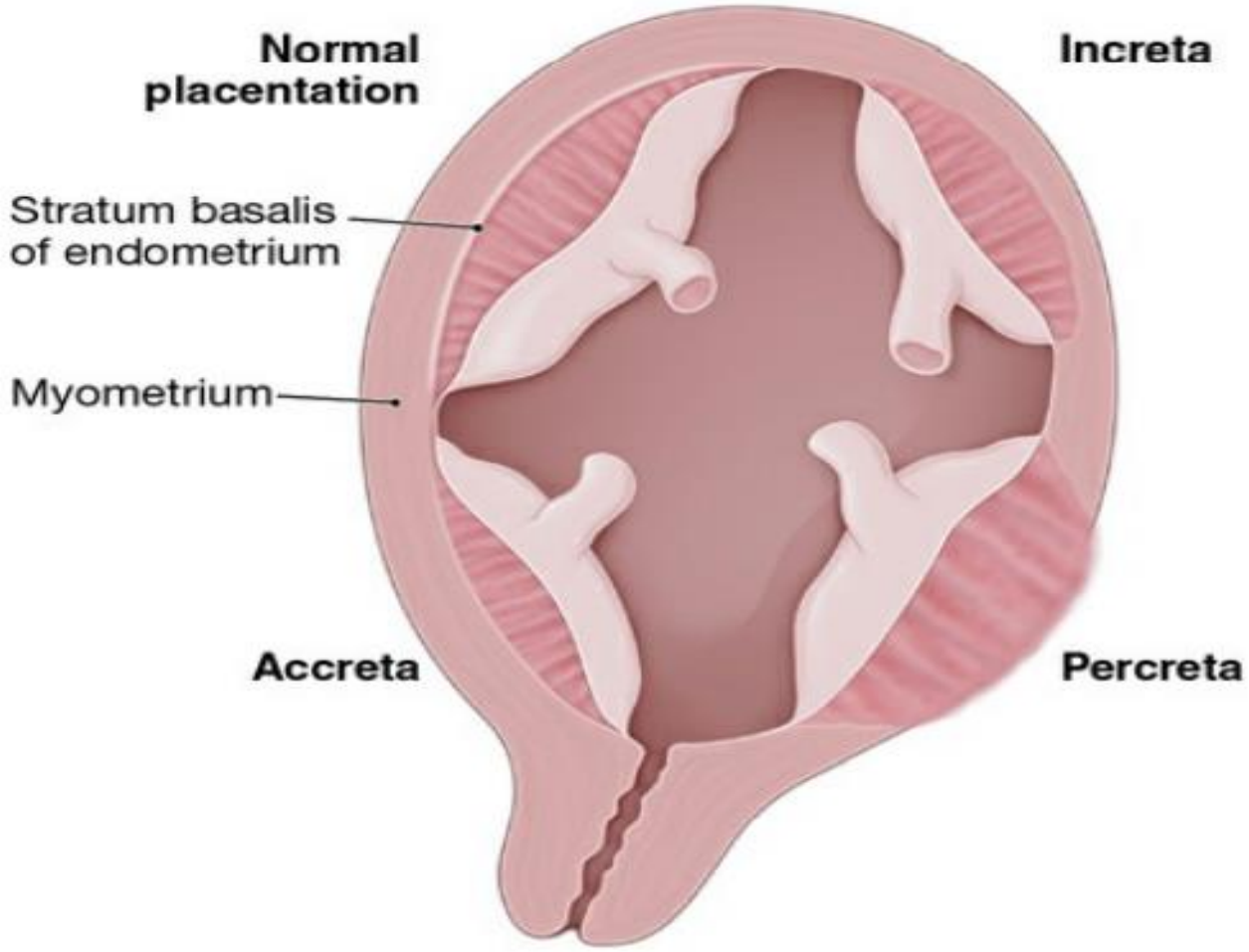
Characteristic	Placenta Previa	Placental Abruption
Magnitude of blood loss	Variable	Variable
Duration	Often ceases within 1–2 hours	Usually continuous
Abdominal pain	Absent	Present, often severe
Fetal heart rate pattern on electronic monitoring	Normal	Tachycardia, then bradycardia; loss of variability; decelerations frequently present; intrauterine demise not rare
Coagulation defects	Rare	Associated, but infrequent; disseminated intravascular coagulation often severe when present
Associated history	Placenta previa in a prior pregnancy (4%–8% recurrence); prior cesarean delivery or other uterine surgery;	Chronic hypertension, preeclampsia; multiple gestation; advanced maternal age; multiparty; smoking; cocaine use; and chorioamnionitis. Trauma is also a major risk factor, and patients involved in a vehicle accident (even if wearing a seat belt), fall, or other trauma should
	multiparty; advanced maternal age; cocaine use; smoking	be evaluated for the possibility of abruption.

- For patients in a stable condition, cesarean delivery between 36 0/7 and 37 6/7 weeks is indicated. Delivery via caesarean birth is the rule unless it occurs earlier in pregnancy
- A single course of betamethasone is recommended for pregnant women between 34 0/7 and 36 6/7 weeks of gestation at risk of preterm birth within 7 days, and who have not received a previous course of antenatal corticosteroids.

Complications

- increased bleeding from the lower uterine segment where the placenta was attached at the time of cesarean delivery. The placenta may also be abnormally adherent to the uterine wall. This is termed placenta accreta if the placental tissue extends into the superficial layer of the myometrium, placenta increta if it extends further into the myometrium, or placenta percreta if it extends completely through the myometrium to the serosa, and sometimes into adjacent organs such as the bladder .The incidence of placenta accreta is about 1 in 533 deliveries but increases in patients with a history of cesarean delivery or previous uterine surgery.

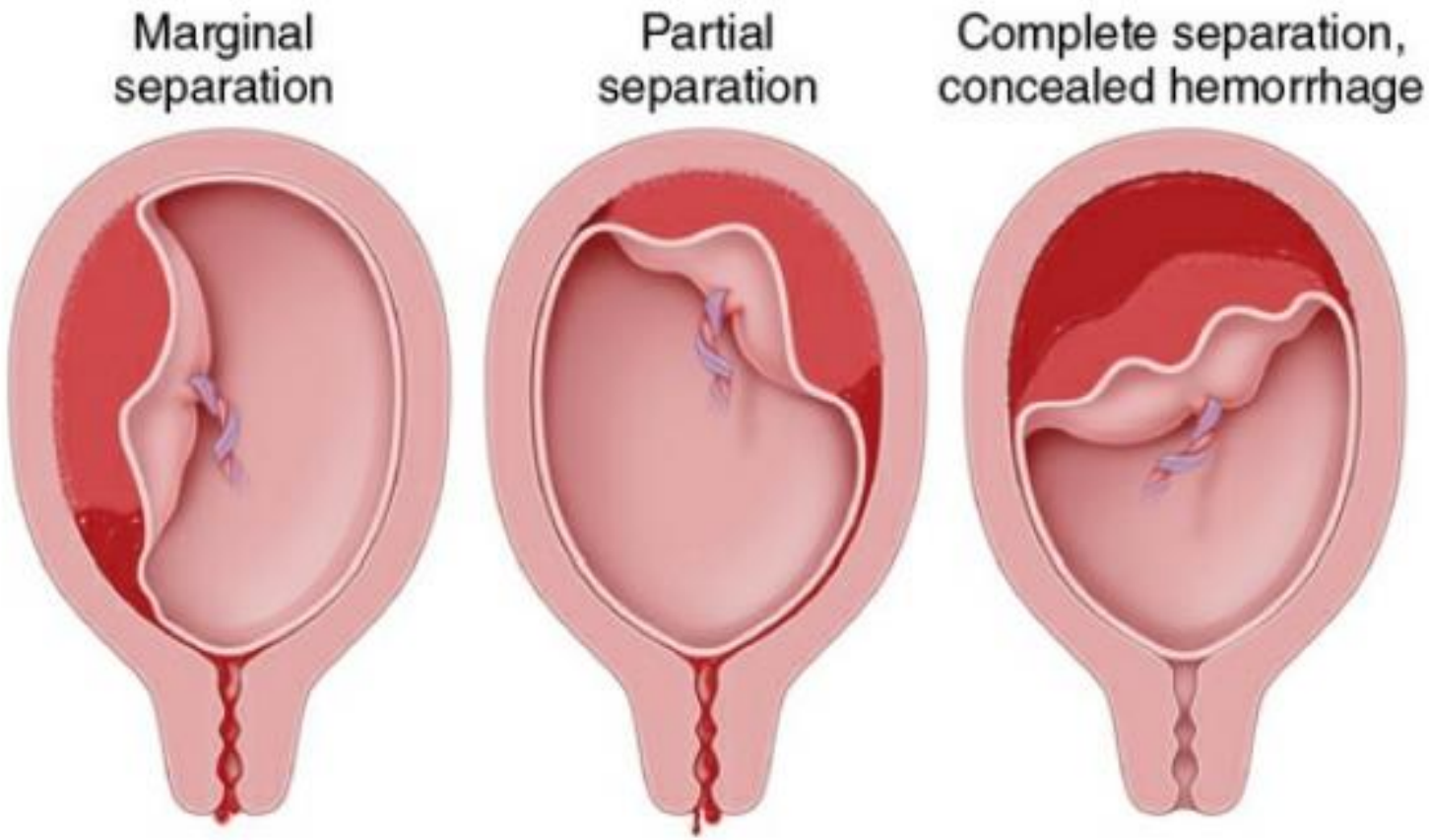
- Generally, the recommended management of suspected placenta accreta is planned preterm cesarean hysterectomy with the placenta left in situ because removal of the placenta is associated with significant hemorrhagic morbidity. Planned cesarean hysterectomy could actually decrease perinatal morbidity and mortality when compared to emergent rates.



E **16.3.** Placenta accreta, increta, and percreta.

PLACENTAL ABRUPTION

- Placental abruption refers to an abnormal premature separation of an otherwise normally implanted placenta. There are various types of abruption depending upon the extent and region of separation. A complete abruption occurs when the entire placenta separates. A partial abruption exists when part of the placenta separates from the uterine wall. A marginal abruption occurs when the separation is limited to the edge of the placenta (Fig. 16.4). A significant abruption requiring delivery occurs in 1% of births.


Marginal separation
Partial separation
Complete separation, concealed hemorrhage

- Abruption occurs when bleeding in the decidua basalis causes separation of the placenta and further bleeding.
- The classic presentation of abruption is vaginal bleeding with abdominal pain. Smaller or marginal abruptions may present with bleeding only.
- Concealed hemorrhage occurs when blood is trapped behind the placenta and is unable to exit. Painful uterine contractions, significant fetal heart rate abnormalities, and fetal demise may occur in severe cases of concealed placental abruption.

Risk Factors

- chronic hypertension, preeclampsia, multiple gestation, advanced maternal age, multiparty, smoking, cocaine use, and chorioamnionitis. Trauma is also a major risk factor, and patients involved in a vehicle accident (even if wearing a seat belt), fall, or other trauma should be evaluated for the possibility of abruption. Typically, fetal heart rate monitoring for a minimum of 4 hours is performed. Abruption in a prior pregnancy increases the risk of abruption in subsequent pregnancies by 15- to 20-fold. An elevated second-trimester maternal serum alpha-fetoprotein (AFP) level may be associated with up to a 10-fold increased risk of placental abruption.

Diagnosis and Management

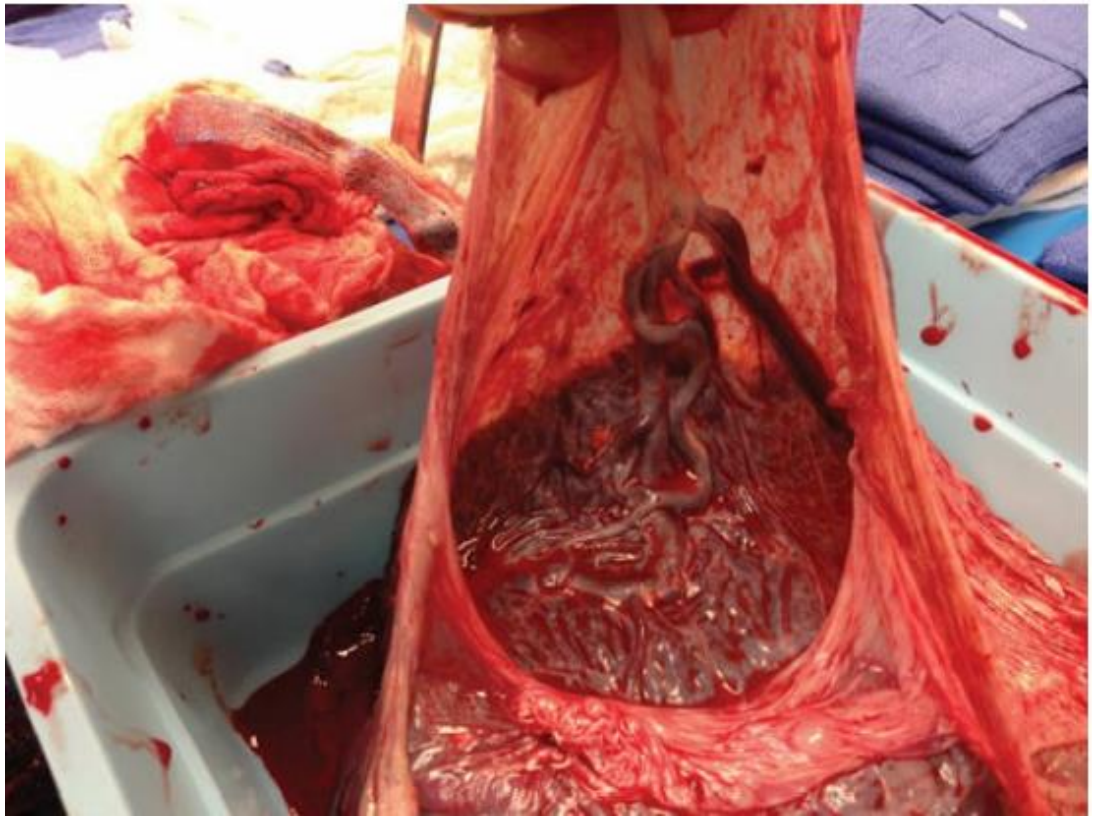
- Abruption is often diagnosed by clinical examination, although an ultrasound examination may be useful in less severe cases not requiring immediate delivery. Abruption may occur in the absence of ultrasound findings.
- Management of patients with placental abruption includes monitoring of vital signs, fluid administration, and delivery for severe hemorrhage. Expectant management may be appropriate for preterm patients with less severe abruptions and minimal bleeding. Decision for delivery is based on fetal status, the amount of bleeding, and gestational age. Delivery is often by cesarean birth, but vaginal delivery frequently is possible, and may even follow a rapid labor.

Complications

- Rarely, blood penetrates the uterus to such an extent that the serosa becomes blue or purple in color. This condition is called Couvelaire uterus.
- administration of Rh D immunoglobulin in women who are Rh D-negative and determine the need for blood transfusion in the potentially anemic neonate. Abruption is the most common cause of coagulopathy in pregnancy (see Table 16.1). Platelet counts may be low, and prothrombin time and partial thromboplastin time may be increased. Serum fibrinogen may also be depleted. Disseminated intravascular coagulation is a rare but extremely serious complication.

VASA PREVIA

- Vasa previa describes the passage of fetal blood vessels over the internal os below the presenting part of the fetus. It can occur with a velamentous insertion, in which the fetal blood vessels insert into the membranes between the amnion and chorion instead of into the placenta and are not protected by Wharton jelly
- Rupture of a fetal vessel occurs rarely in pregnancy, but the risk is greatest with vasa previa. Rupture of a vessel can quickly lead to fetal death, as fetal blood volume is so small.



- transvaginal ultrasound examination with color Doppler may confirm a vasa previa engendering a rapid delivery—usually caesarean delivery.
- When performing artificial rupture of membranes, it is important to ensure that no pulsating vessels are present, which may represent a vasa previa.

- Uterine rupture describes a spontaneous complete transection of the uterus from the endometrium to the serosa. If the peritoneum remains intact, it is referred to as a partial rupture, or uterine dehiscence. Most cases of uterine rupture occur at the site of a prior cesarean delivery. With complete rupture and fetal expulsion into the abdomen, fetal mortality ranges from 50% to 75%. Fetal survival depends in large part on whether a substantial portion of the placenta remains attached to the uterine wall until delivery is accomplished. Cesarean delivery is imperative to ensure neonatal survival and decrease maternal morbidity.

Thank you