CHAPTER 18 – OBSTETRICS

OUTLINE

On completion of this chapter, you will be able to:

- Describe obstetrics.
- Define pregnancy and its four stages.
- Describe prenatal care.
- Describe the three stages of labor.
- Analyze, build, spell, and pronounce medical words.
- Provide the description of diagnostic and laboratory tests related to pregnancy.
- Identify and define selected abbreviations.
- Describe each of the conditions presented in the Pathology Spotlights.
- Review the Pathology Checkpoint.
- Complete the Study and Review section and the Chart Note Analysis.

OUTLINE

I. Overview of Obstetrics

Obstetrics (OB) is the branch of medicine that pertains to the care of women during pregnancy, childbirth, and the postpartum period, which is also called the puerperium. A physician specializing in this medical field is known as an obstetrician.

A. Fertilization (Fig. 18–1, p. 600) – the process in which sperm penetrates an ovum and unites with it. At this time, the 23 chromosomes from the male combine with the 23 chromosomes from the female to make a new life. Fertilization generally occurs within 24 hours following ovulation and usually takes place in the fallopian tube. The resultant cell of this event or conception is called a zygote (Fig. 18–2, p. 601). The zygote, which is genetically complete, divides into a solid mass of cells called a morula. The cells of the morula continue to divide and by the time the developing embryo (the stage of development between weeks 2 and 8) reaches the uterus, it is a hollow ball of cells known as a blastocyst, which consists of an outer layer of cells and an inner cell mass. As the blastocyst develops, it forms a structure with two cavities, the yolk sac and amniotic cavity. In humans, the yolk sac is the site of formation of the first red blood cells and the cells that will become ovum and sperm. Other structures developed are:

1. Amnion – the inner transparent sac that holds the fetus. Its cavity is filled with amniotic fluid. This liquid protects the fetus (stage of development from the third month until birth) from injury. It also helps maintain:
   - An even temperature.
• Prevents formation of adhesions between the amnion and the skin of the fetus.
• Prevents conformity of the sac to the fetus.
  The fluid is constantly being absorbed and renewed at a rapid rate (about one-third of water in the amniotic fluid is replaced each hour).

2. **Placenta** – composed of tissues from both the mother and the child. It anchors the developing fetus to the uterus and provides the means by which the fetus receives its nourishment and oxygen. It also functions as an excretory, respiratory, and endocrine organ, which produces human chorionic gonadotropin (hCG). The mature placenta is 15 to 18 cm (6 to 7 inches) in diameter and weighs approximately 450 g (about 1 pound). When expelled following **parturition** (the act of giving birth), it is known as the **afterbirth**. The placenta consists of two portions:
  a. **Fetal Portion** – has a shiny, slightly grayish appearance and is formed by the coming together of chorionic villi, in which the umbilical vein and arteries intertwine to form the **umbilical cord**.
  b. **Maternal Portion** – has a red, beefy-looking appearance and develops from the decidual basalis of the uterus.

B. **Pregnancy** – a temporary condition that occurs within a woman’s body from the time of conception through the embryonic and fetal periods to birth. The normal term of pregnancy is approximately 40 weeks, or 280 days, or 10 lunar months, or 9 ⅔ calendar months.
  • **Gestation Period** – the length of pregnancy.
  • **Trimesters** – three segments of three months each.
  • **Human Development** – follows three stages:
    o **Preembryonic Stage (Fig. 18–3, p. 602)** – first 14 days of development after the ovum is fertilized.
    o **Embryonic Stage (Fig. 18–3, p. 602)** – begins in the third week after fertilization.
      • During the fifth week of development, the embryo has a marked C-shaped body and a rudimentary tail.
      • At 7 weeks, the head of the embryo is rounded, nearly erect, the eyes have shifted forward and closer together, and the eyelids begin to form.
    o **Fetal Stage (Fig. 18–4, p. 603)** – begins in the ninth week.
      • At 9 weeks every organ system and external structure are present, and the developing embryo is now called a **fetus**.
      • At 14 weeks, the skin of the fetus is so transparent that blood vessels are visible beneath it. More muscle tissue and body skeleton have developed and holds the fetus more erect.
- At 20 weeks, the fetus weighs approximately 435 to 465 g and measures about 19 cm. The skin is less transparent due to subcutaneous deposits of brown fat. Fingernails and toenails have developed and “wooly” hair covers the head. *(Fig. 18–5, p. 603).*

Pregnancy is divided into four stages:
- **Prenatal Stage** – time period between conception and onset of labor, refers to both the care of the woman during pregnancy and the growth and development of the fetus.
- **Labor** – the last phase of pregnancy to the time of delivery.
- **Parturition** – the act of giving birth; also known as *childbirth* or *delivery.*
- **Postpartum Period or Puerperium** – the 6 weeks following childbirth and expulsion of the placenta. During this time, the female reproductive organs return to an essentially prepregnant condition in which involution of the uterus occurs.

1. **Signs and Symptoms of Pregnancy** – divided into three general groups: subjective (presumptive), objective (probable), and diagnostic (positive).
   a. **Subjective or Presumptive Signs** – those experienced by the expectant mother, that suggest pregnancy but are not positive signs and includes:
      - Amenorrhea
      - Nausea and Vomiting
      - Breast Changes
      - Pigmentation Changes
      - Frequency and Urgency of Urination
      - Fatigue and Drowsiness
      - **Quickening** – the movement of the fetus in the uterus, generally beginning in weeks 16 to 20 of pregnancy.
   b. **Objective or Probable Signs** – those that are observable by the examiner. Even though the following signs are stronger indicators of pregnancy, they can be caused by other conditions, and are not considered to be positive signs of pregnancy.
      - **Goodell’s Sign** – softening of the cervix and vagina caused by increased vascular congestion.
      - **Chadwick’s Sign** – purplish or bluish discoloration of the cervix, vagina, and vulva caused by increased vascular congestion.
      - **Hegar’s Sign** – softening of the lower uterine segment.
• Abdominal and Uterine Enlargement
• Braxton Hicks Contractions – irregular, painless uterine contractions (UC) that begin in the second trimester and can occur throughout the pregnancy.
• Ballottement – maneuver by which the fetus or fetal part rebounds when displaced by a light tap of the examining finger on the cervix.
• Fetal Outline – identified by palpation after week 24.
• Abdominal Striae – commonly known as stretch marks, the fine, pinkish-white or purplish-gray lines that some women develop when the elastic tissue of the skin has been stretched to its capacity.
• Pregnancy Tests – using maternal blood or urine to determine the presence of hCG (human chorionic gonadotropin) hormone produced by the chorionic villi of the placenta and secreted during pregnancy and becomes detectable in urine about 10 days after conception.

c. Diagnostic or Positive Signs – the only absolute indicators of a developing fetus.
  • Fetal Heartbeat – can be detected by ultrasound at approximately 10 weeks gestation, or by using a fetoscope, an optical device used for direct visualization of the fetus in the uterus, at approximately 18 to 20 weeks of pregnancy.
  • Fetal Movements – can be felt by the examiner in the second trimester and can be observed by using ultrasonography, high-frequency sound waves that visualize a structure or produce a record of ultrasonic echoes as they strike tissues of different densities.
  • Visualization of the Fetus – ultrasound is possible as early as 4 to 5 weeks of gestation with 100% reliability, providing the earliest positive confirmation of pregnancy.

C. Prenatal Care – the care of the woman during the period of gestation. It should begin as soon as a woman suspects that she is pregnant and is essential to her well-being and that of her fetus. It consists of periodic examinations to determine blood pressure, weight, changes in the size of the uterus, and the condition of the fetus. Also included are laboratory tests such as urinalysis and blood analysis; instruction in nutritional requirements and care of the newborn; and suggestions and support to deal with the discomforts of pregnancy. For an uncomplicated pregnancy, the recommended schedule for prenatal visits is:
• **Conception to 28 Weeks** – every 4 weeks with the first visit including a medical history and complete physical examination.

• **29 to 36 Weeks** – every 2 to 3 weeks.

• **37 Weeks to Birth** – weekly.

1. **Determination of the Estimated Date of Delivery** – the average duration of a term pregnancy is 40 weeks (280 days) after the last normal menstrual period (LMP). The date of delivery can be determined in several ways. Näegele’s rule, a gestational wheel, or other means may be used.

   a. **Näegele’s Rule to Determine the Estimated Date of Delivery (EDD)**
      - Determine the first day of the last normal menstrual period.
      - Count backward 3 months.
      - Add 7 days.

2. **Prenatal Tests** – Certain diagnostic and laboratory tests are done on the first and second prenatal visit; other tests can be performed at specific times during pregnancy. See section on Diagnostic and Lab Tests for more information on the tests that may be used during pregnancy.

D. **Labor and Delivery** – the act of giving birth is known as parturition, childbirth or delivery. Labor is the process by which forceful contractions move the fetus down the birth canal and expel it from the uterus. The signs and symptoms that labor is about to start can occur from hours to weeks before the actual onset of labor.

**Signs of impending labor include:**

- **Braxton Hicks Contractions** – irregular contractions that begin in the second trimester and intensify as full term approaches.

- **Increased Vaginal Discharge** – normally clear and nonirritating discharge caused by fetal pressure.

- **Lightening** – the descent of the baby into the pelvis. May occur 2 to 3 weeks before the first stage of labor begins.

- **Bloody Show** – thick mucus mixed with pink or dark-brown blood. As the cervix softens, effaces, and dilates, the mucous plug that has sealed the uterus during pregnancy is dislodged from the cervix and small capillaries are torn, producing the bloody show.

- **Rupture of the Membranes** – occurs when the amniotic sac (bag of waters) ruptures. When the membranes do not rupture on their own, they will be ruptured by the attending physician or midwife. This is known as AROM: artificial rupture of membranes.
• **Energy Spurt or Nesting** – occurs in many women shortly before labor. They may suddenly have the energy to clean their houses and do things that they have not had the energy to do previously.

• **Weight Loss** – loss of 1 to 3 pounds shortly before labor can occur as hormone changes cause excretion of extra body water.

1. **Stages and Phases of Labor**—true labor is characterized by rhythmic contractions that develop a regular pattern and are more frequent, more intense, and last longer. Labor is divided into three stages (Fig. 18–6, p. 607).

   a. **First stage** – begins with the onset of true labor and lasts until the cervix is fully dilated to 10 cm. It is generally the longest phase of labor in both nulliparas (women who have borne no children) and multiparas (women who have borne more than one child). It is broken down into three phases:

      • **Early Labor or Latent Phase** – starts with the onset of labor and lasts until the cervix is dilated to 3 cm. Duration is about 8 to 12 hours and lasts about 30 to 45 seconds, with about 5 to 30 minutes of rest between contractions. The *bag of waters* can break any time during the first phase.

      • **Active Labor Phase** – continues until the cervix is dilated to 7 cm. Duration is about 3 to 5 hours. Contractions last about 45 to 60 seconds with 3 to 5 minutes rest between contractions. Effacement, the shortening of the vaginal portion of the cervix and thinning of its wall as it is stretched and dilated by the fetus during labor, is completed.

      • **Transition Phase** – continues until the cervix is fully dilated to 10 cm. Duration is about 30 minutes to 2 hours. Contractions are long, strong, intense, and may overlap.

   b. **Second Stage** – from the time of full cervical dilation (10 cm) until the birth of the baby. The entire process lasts anywhere from 20 minutes to 2 hours or longer. Contractions last about 45 to 90 seconds with a 3-to 5-minute rest between contractions. There is a strong natural urge to push with a feeling of pressure on the rectum. Generally, the head of the baby appears first; this is known as *crowning*. The newborn baby usually has a cone-shaped or molded head due to its journey down the birth canal. It is covered with *vernix caseosa*, a protective cheesy substance that covers the fetus during intrauterine life. The baby will present with *lanugo*, fine downy hair that covers the body. The external *genitalia* are usually enlarged.
• **Assessment of the Newborn** – involves using the Apgar score. It is performed immediately following the birth of the baby. The five assessments of the Apgar score are a mnemonic based upon the developer’s last name *Apgar*: Appearance (color), Pulse (heartbeat), Grimace (reflex), Activity (muscle tone), and Respiration (breathing). The score is taken at 1 and 5 minutes after birth, the high score being 10 and the low score being one. *(Table 18–1, p. 608).*

c. **Third Stage** – is the delivery of the placenta and is the shortest stage of labor. Delivery of the placenta is anywhere from 5 to 30 minutes. It can be expelled in one of two ways:
   - **Schultze Mechanism** – with the fetal surface presenting.
   - **Duncan Mechanism** – presenting the maternal surface.
   The placenta is examined to be certain that all of it has been expelled. Any small portion of the placenta that remains in the uterus could interfere with uterine contractions after the birth of the baby and contribute to infection.

E. **Drugs Used During Labor and Delivery** – drugs used during labor and delivery include:
   - **Epidural Block** – method of administering anesthesia used during childbirth. A small amount of anesthesia is inserted through a narrow catheter that is threaded through a needle inserted into the dura space near the spinal cord. Used to reduce the discomfort and pain of contractions.
   - **Local Anesthesia or Pudendal Block** – procedure that provides regional pain relief in the perineum area during birth; can be used to numb the vaginal area in preparation for an episiotomy.
   - **Oxytocic Agents or Uterine Stimulants** – drugs that selectively stimulate contraction of the myometrium to increase the strength and frequency of contractions. Can be used in obstetrics to induce labor at term or to control postpartum hemorrhage. An example is Pitocin (oxytocin).

F. **Breastfeeding** – is the act if providing milk to a baby from the mother’s breasts. Mature mother’s milk and its precursor, *colostrum* (*the first milk*), are considered to be the most balanced foods available for normal infants. The American Academy of Pediatrics currently recommends that pediatricians and parents should be aware that exclusive breastfeeding is sufficient to support optimal growth and development for approximately the first 6 months of life and provide continuing protection against
diarrhea and respiratory tract infections. Some of the noted benefits of breastfeeding and breast milk are that it:

- Provides ideal food for newborns.
- Provides essential nutrients for growth and development.
- Is virtually free from harmful bacteria.
- Does not have to be prepared.
- Costs nothing to make and is in ready supply.
- Is good for environment because there are no bottles, cans, and boxes to put in the garbage.
- May help prevent dehydration. Continued breastfeeding during an infant’s diarrhea may reduce the severity, duration, and negative nutritional consequences of diarrhea.
- Can help pregnancy spacing because exclusive breastfeeding can reduce potential fertility.
- In addition, the breastfeeding process helps bond mother and child.
- Breastfeeding can burn 500 calories a day in the nursing mother.

II. Life Span Considerations

A. The Child – worldwide there are more than 15 million births to females under the age of 20. Potential risk factors for becoming pregnant at an early age include:

- Early dating
- Smoking
- Alcohol and substance abuse
- Low academic interest
- Single-parent families
- Poverty

Those who seek early prenatal care are at no greater risk during pregnancy than women over 20 years of age. However, many adolescents do not seek early prenatal care, placing themselves and their unborn children at risk. Maternal complications can include:

- Iron deficiency anemia
- Preeclampsia
- Eclampsia
- Sexually transmitted diseases
- Premature labor and delivery
- Cephalopelvic disproportion

The most common complications concerning the infant of an adolescent are related to preterm births, low birth weight, infection, chemical dependence, and sudden infant death syndrome.

B. The Older Adult – Women in their late 30s and 40s are likely to have healthy babies, but they often face particular risks. Some of these risks include:

- Diabetes
- High blood pressure
• Placenta previa
• Having a low birth weight baby
• Have a premature delivery
• Ectopic pregnancy
• Stillbirth

The newborns of mothers in their 40s can suffer more complications (such as asphyxia and brain bleeds) than those of younger mothers. Pregnant women who are 35 or older face some special risks, but many of them can be managed effectively with good prenatal care.

III. Building Your Medical Vocabulary

A. Medical Words and Definitions – this section provides the foundation for learning medical terminology. Medical words can be made up of four types of word parts:
   1. Prefix (P)
   2. Root (R)
   3. Combining Forms (CF)
   4. Suffixes (S)

By connecting various word parts in an organized sequence, thousands of words can be built and learned. In the text, the word list is alphabetized so one can see the variety of meanings created when common prefixes and suffixes are repeatedly applied to certain word roots and/or combining forms. Words shown in pink are additional words related to the content of this chapter that have not been divided into word parts. Definitions identified with an asterisk icon (*) indicate terms that are covered in the Pathology Spotlights section of the chapter.

IV. Diagnostic and Lab Tests

A. Amniocentesis (Fig. 18–7, p. 612) – determines chromosomal abnormalities and biochemical disorders.
B. Blood Grouping (A, B, AB, and O) – determines blood type.
C. Chorionic Villus Sampling (CVS) – determines chromosomal abnormalities and biochemical disorders.
D. Complete Blood Count (CBC) – test for anemia, infection, or cell abnormalities.
E. Cordocentesis, Fetal Blood Sampling, Percutaneous Umbilical Blood Sampling (PUBS), or Umbilical Vein Sampling – examination of blood from the fetus to detect fetal abnormalities.
F. Group B Streptococcus Screening (GBS) – performed between week 35 and 37 of pregnancy to check for vaginal strep B infection. Positive results indicate the need for intravenous antibiotics to reduce the chance of the baby becoming infected with GBS.
G. Hematocrit – test for anemia during pregnancy.
H. Hemoglobin – test for anemia during pregnancy.
I Hepatitis B Screen – test to identify carriers of hepatitis.
J. **Human Chorionic Gonadotropin (hCG)** – test to determine the presence of hCG, which is secreted by the placenta. A positive result usually indicates pregnancy.

K. **Human Immunodeficiency Virus (HIV)** – test to identify HIV infection.

L. **Maternal Blood Glucose** – test to screen for gestational diabetes. If level of glucose is moderately elevated, a more conclusive glucose tolerance test (GTT) can be ordered.

M. **Nonstress Test (NST)** – test to identify fetal compromise in conditions with poor placenta function, such as hypertension, diabetes mellitus, or postterm gestation.

N. **Papanicolaou (PAP) Smear** – test to screen for cervical cancer.

O. **Rh Factor (Positive or Negative)** – test to determine risk for maternal-fetal blood incompatibility.

P. **Rubella (German Measles) Titer** – test to determine immunity to rubella.

Q. **TORCH Panel** – test to screen for toxoplasmosis, rubella, cytomegalovirus (CMV), and herpes simplex virus (HSV).

R. **Toxoplasmosis Screen** – test to determine toxoplasmosis infection.

S. **Quad Marker Screen (AFP, hCG, UE, and inhibin-A)** – test to assess probabilities of potential genetic disorders by measuring high and low levels of alpha-fetoprotein (AFP), and abnormal levels of human chorionic gonadotropin (hCG); unconjugated estriol (UE); and inhibin-A.

T. **Ultrasound** – test to confirm viable pregnancy, fetal heartbeat (FHB), ectopic pregnancy, and molar pregnancy; multiple pregnancies, and intrauterine death; to measure the crown-rump length or gestational age; to assess abnormal gestation; to diagnose fetal malformation and structural abnormalities; to determine gender of the baby; to identify placenta location and uterine and pelvic abnormalities of the mother during pregnancy; and to observe fetal presentation and movements.

U. **Urinalysis** – test that checks for infection, renal disease, or diabetes.

V. **Venereal Disease Research Laboratory (VDRL)** – test to screen for syphilis. Another blood test that is used to screen for syphilis is the RPR (rapid plasma regain).

V. **Abbreviations (p. 622)**

VI. **Pathology Spotlights**

A. **Mastitis** – is an inflammation of the breast that occurs most commonly in women who are breastfeeding. It is caused by bacteria that enter through a crack or abrasion of the breast. Signs and symptoms of mastitis are as follows:

- Fever
- Chills
- Headache
- Breast pain
- Redness
- Tenderness
- Swelling
- Pain in the nipple
- Difficulty getting milk to flow

Treatment of mastitis includes local heat applications, antibiotics and anti-inflammatory drugs for 10 days, rest, increased fluids, and a recommendation to breastfeed (or pump) frequently to relieve breast fullness. If the symptoms increase in the mother after 48 hours or the baby develops signs of a yeast infection (thrush), the respective physicians should be contacted.

B. **Placenta Previa** – is a displaced attachment of the placenta over the cervical os (opening of the cervix). In this condition, the fetus receives less oxygen, and the expectant mother has an increased risk of hemorrhage and infection. Placenta previa is classified as one of four degrees:

1. **Total Placenta Previa** – the placenta completely covers the internal os.
2. **Partial Placenta Previa** – the placenta partially covers the internal os.
3. **Marginal Placenta Previa** – the edge of the placenta is at the margin of the internal os.
4. **Low-lying Placenta** – the placenta is implanted in the lower segment but does not reach the internal os, although it is in close proximity to it.

The most common symptom of placenta previa is painless uterine bleeding (either hemorrhage or scanty bleeding) during the second half of the pregnancy. Transabdominal ultrasound (Fig. 18–16, p. 635) is used to diagnose the condition, which may require hospitalization and monitoring until delivery. Other treatments include bedrest, no vaginal examinations, monitoring of blood loss, pain and uterine contractility, evaluation of fetal heart rate and mother’s vital signs, intake and output, assessing blood test for anemia, and administration of IV fluids. A Cesarean section is indicated if severe and life-threatening hemorrhage occurs or fetal distress is apparent.

C. **Preeclampsia and Eclampsia**

1. **Preeclampsia** – also known as toxemia or pregnancy-induced hypertension (PIH), is a complication of pregnancy characterized by hypertension, proteinuria, and edema. It develops in about 5% of pregnant women usually after week 20 of pregnancy and can be either mild or severe. Some experts believe that a problem with the placenta causes preeclampsia. The mother has spasms of the blood vessels, which increase her blood pressure, impairing the blood flow to the placenta. The high blood pressure can also affect the woman’s brain, kidneys, liver, and lungs.

   Symptoms of preeclampsia include:
   - Agitation and confusion
   - Changes in mental status
   - Decreased urine output
   - Headaches
• Nausea and vomiting
• Pain in the right upper part of the abdomen
• Shortness of breath
• Sudden weight gain over 1 to 2 days
• Weight gain of more than 2 pounds per week
• Swelling of the face or hands
• Visual impairment

Factors that increase a woman’s risk of preeclampsia are:
• African American ethnicity
• Age younger than 20 or older than 35
• First pregnancy
• Low socioeconomic status
• Multiple gestation such as twins or triplets
• Diabetes
• Preeclampsia or eclampsia in previous pregnancies
• High blood pressure before pregnancy
• Underlying kidney disease
• If the baby’s mother or father was born of a pregnancy in which the expectant mother developed preeclampsia or eclampsia.

There are no known ways to prevent preeclampsia.

2. **Eclampsia** – is a complication of severe preeclampsia that involves seizures and possibly coma. One in 200 pregnant women who have preeclampsia develop eclampsia. It is not known why some women with preeclampsia develop the seizures associated with eclampsia.

D. **Rh Incompatibility** (Fig. 18–14, p. 625) – the presence of a substance called an agglutinogen (a gluing or clumping together) in the red blood cells is responsible for what is known as the Rh factor. About 85% of the population has the Rh factor and is known as **Rh-positive (⁺)**. The other 15% lack the Rh factor and are designated as **Rh-negative (⁻)**. A pregnant woman who is Rh-negative can become sensitized by blood of an Rh-positive fetus. Sensitization can also occur if an Rh-negative woman has had a previous miscarriage, induced abortion, or ectopic pregnancy. In subsequent pregnancies, if the fetus is Rh-positive, Rh antibodies produced in the maternal blood may cross the placenta and destroy fetal cells, producing hemolytic disease of the newborn (HDN). This disease can be prevented today provided the Rh-negative woman has not already made antibodies against the Rh factor from an earlier pregnancy or blood transfusion. **RhoGAM** (Rh₀(D) immunoglobulin) is a product that can safely prevent sensitization of an Rh-negative mother by suppressing her ability to respond to Rh-positive red cells. It is not helpful if the mother is already sensitized.

E. **Spontaneous Abortion (SAB) or Miscarriage** – the loss of a fetus as a result of natural causes occurring during the first 20 weeks of gestation.
Miscarriage is the most common type of pregnancy loss, with an estimated 50% of all fertilized eggs dying and spontaneously aborting before the woman even knows she is pregnant. Risk for SAB is higher in women over the age of 35, in women with systemic diseases and women with a history of three or more prior spontaneous abortions. The most common causes of SAB are chromosomal abnormalities of the embryo, abnormalities of the placenta, endocrine disturbances, acute infectious disease, severe trauma, and shock. Other causes include lifestyle situations such as the use of certain drugs, alcohol, or excessive caffeine. Signs and symptoms of SAB include:

- Nausea
- Low back or abdominal pain that can be dull, sharp, or cramping
- True contractions occurring every 5 to 20 minutes
- Vaginal bleeding: brown or bright red blood or spotting with or without cramps
- Passing clots or bits of tissue from the vagina (These should be saved for laboratory analysis.)

For all of the following types of miscarriages mentioned below, treatment includes measures to prevent hemorrhage and infection so the patient should see her health care provider as soon as possible.

1. **Threatened (Fig. 18–15A, p. 626)** – uterine bleeding or spotting is accompanied by cramping or low back pain. The cervix is not dilated.

2. **Imminent or Inevitable (Fig. 18–15B, p. 626)** – uterine bleeding or spotting is accompanied by cramping or low back pain. The cervix is dilated. Miscarriage is inevitable when there is dilation or effacement of the cervix or rupture of the membranes.

3. **Incomplete (Fig. 18–15C, p. 626)** – some products of conception have been expelled, but some remain in the uterus. Bleeding and cramps may persist when the miscarriage is not complete. A dilation and curettage (D&C), which is an expansion of the cervical canal and scraping of the uterine wall, is usually performed.

4. **Complete** – all of the products of conception are expelled. A completed miscarriage can be confirmed by an ultrasound.

5. **Missed** – this is a pregnancy demise in which nothing is expelled. Signs would be a loss of pregnancy symptoms and the absence of fetal heart tones.

6. **Recurrent Miscarriage (RM) or Habitual Abortion** – defined as 3 or more consecutive first trimester miscarriages.

VII. Pathology Checkpoint

VIII. Study and Review (pp. 628–632)

IX. Practical Application: SOAP: Chart Note Analysis