ASSISTING IN OBSTETRICS AND GYNECOLOGY

SCENARIO

Betsy Davis, CMA (AAMA), recently was hired by the University Women’s Hospital to work for Dr. Erin Beck, an obstetrician/gynecologist for a busy family-centered healthcare facility in her community. Betsy has worked for a family practice physician for 3 years, but this is her first position in a specialty practice. Betsy is excited about the opportunity to focus on women’s health issues and is especially interested in helping in the obstetric area of the practice. Betsy’s responsibilities will include understanding current methods of contraception and the patient education factors that are important for each. She also needs to develop expertise in gynecologic diseases and conditions, including diagnostic and treatment protocols for cancers of the female system. Medical assistants in the practice are expected to be able to teach breast self-examinations and answer the questions of pregnant patients concerning a healthy pregnancy, labor, and delivery.

While studying this chapter, think about the following questions:

- What is the basic anatomy and physiology of the female system?
- What does Betsy need to learn about contraceptives to be able to answer patients’ questions?
- Betsy needs to become familiar with which gynecologic disorders?
- What are the primary malignancies of the female system?
- How should Betsy assist Dr. Beck with a Pap smear?
- How can Betsy teach patients to perform a breast self-examination?
- What are the stages of pregnancy and birth?
- How can Betsy help patients understand issues that can arise with menopause?
- What are the typical diagnostic procedures used in obstetrics and gynecology?

LEARNING OBJECTIVES

1. Define, spell, and pronounce the terms listed in the vocabulary.
2. Apply critical thinking skills in performing the patient assessment and patient care.
3. Identify the major organs of the female reproductive system and explain the primary function of each.
4. Trace the ovum through the three phases of menstruation.
5. Compare current contraceptive methods.
6. Summarize menstrual disorders and conditions.
7. Distinguish among different types of gynecologic infections.
8. Differentiate between benign and malignant neoplasms of the female reproductive system.
9. Prepare for and assist with the female examination, including obtaining a Papanicolaou (Pap) smear.
10. Demonstrate patient preparation for a cryosurgery procedure.
11. Teach the patient the techniques for a breast self-examination.
12. Compare the positional disorders of the pelvic region.
13. Summarize the process of pregnancy and parturition.
14. Describe the common complications of pregnancy.
15. Specify the signs, symptoms, and treatments of conditions related to menopause.
16. Outline the medical assistant’s role in gynecologic and reproductive examinations.
17. Demonstrate how to assist with a prenatal examination.
18. Distinguish among diagnostic tests that may be done to evaluate the female reproductive system.
VOCABULARY

adnexal (add’-nëks-uhl) Pertaining to adjacent or accessory parts.
clitoris (klîr’-tuh-ris) A small, elongated erectile body above the
    urinary meatus at the superior point of the labia minora.
coitus Sexual union between male and female; also called
    intercourse.
colostrum (koh-lahs’-trum) A thin, yellow, milky fluid secreted
    by the mammary glands a few days before and after delivery.
dilation The opening of the cervix through the process of labor,
    measured as 0 to 10 cm dilated.
dilation and curettage (D&C) The widening of the cervix and
    scraping of the endometrial wall of the uterus.
dysplasia An alteration in cell growth, causing differences in
    size, shape, and appearance.
effacement The thinning of the cervix during labor, measured
    in percentages from 0% to 100% effaced.
endocervical curettage The scraping of cells from the wall of
    the uterus.
fundus The curved, top portion of the uterus; the fundal height
    can be used as a measurement of fetal growth and estimated
    gestation.

The branch of medicine that deals with pregnancy, labor,
    and the postnatal period is known as obstetrics, and the
branch of medicine that deals with diseases of the genital
tract in women is called gynecology. Frequently, a physician prac-
tices both specialties and is known as an OB/GYN physician.
Assessment of the female reproductive system is an important
part of healthcare. Patients often are hesitant and uncomfortable
about talking about sexual matters, so they wait until symptoms
are intolerable or disease is advanced before seeking medical care.
In addition to the signs and symptoms of disease, the medical
assistant must be aware of the patient’s emotional state and must
give support when needed.

ANATOMY AND PHYSIOLOGY

Female Reproductive System

The female reproductive system includes both internal and exter-
nal organs. The internal organs are located in the pelvis and
cannot be seen without special instruments, such as a vaginal
speculum or a laparoscope. The external organs can be seen
during the physical examination.

The primary parts of the female reproductive system are the
vulva, vagina, uterus, fallopian tubes, and ovaries (Figure 41-1).
The vulva includes the clitoris, the urethral meatus, and the
vaginal orifice. These structures are covered by two sets of lips of
    tissue. The inner set, the labia minora, is a thin layer of skin
    that extends from the top of the clitoris to the base of the vaginal
opening. The external set, the labia majora, and the mons pubis
    are covered with hair in the adult.

The vagina connects the internal and external organs. This
    tubelike structure is constructed to receive the penis during
coitus. It is lubricated by a mucous membrane lining, and its
    walls are made up of overlapping tissue in the form of ruge,
    which allows the vagina to expand during the birth of an infant.
    At the distal end of the vagina is the cervix, often called the
    neck of the uterus, which is approximately 1 to 1½ inches long.
The uterus is an upside-down, pear-shaped muscular organ,
and its sole purpose is to house and nourish the fetus from
implantation shortly after conception until parturition. The
uterine walls have three layers. The inner layer, the endomet-
rium, is rich in blood and changes in consistency during the
menstrual cycle. The middle layer, the myometrium, is the pow-
erful muscular layer that contracts to make the birth of a baby
possible. The outer layer, the perimetrium, protects the structure
and attaches to ligaments that support and hold the uterus in
place (Figure 41-2).

On both sides of the fundus of the uterus are the fallopian
tubes, also called the oviducts. These tubes extend from the uterus
to the ovaries but do not attach to the ovaries. The distal end
of the tube opens freely into the abdominopelvic cavity and acts as
a passageway for the ovum to the uterus and for the sperm as
they search for the ovum. At the distal end of the fallopian tubes
are fingerlike projections, called fimbriae, that move in a wavelike
pattern to draw the released ovum into the fallopian tube.

The ovaries are almond-shaped organs that produce and
release the egg (ovum) and secrete the hormones necessary for
the development of secondary sexual characteristics and the
maintenance of a pregnancy. The ovaries secrete the hormones
progesterone and estrogen, which regulate reproductive function.
For pregnancy to occur, the vagina must receive the sperm from
the male; the sperm move up through the opening in the cervix
(the cervical os), through the uterus, and into the fallopian tubes.
As many as 200 million to 600 million sperm can be deposited,
and about 100,000 survive the acidic environment of the vagina
to swim toward the egg.
Fertilization occurs when one sperm cell penetrates and fertilizes an egg. Fertilization usually takes place in the distal third of the fallopian tube. The tiny fertilized ovum, now called a zygote, moves by peristalsis and the massaging motion of the cilia that line the fallopian tube into the uterus and implants itself into the uterine wall. After implantation, the placenta forms; this structure supplies the new life with all the nourishment needed for development. Once pregnancy begins, the serum levels of human chorionic gonadotropin (HCG) rise, and the hormone spills into the woman's urine, where it can be detected with a pregnancy test.

Breast Tissue

Mammary tissue develops from the increased estrogen secretion that occurs during puberty. In the center of each breast is a nipple surrounded by a pigmented region called the areola. Inside the breast are 15 to 20 lobes and their subunits, the lobules of glandular tissue that are separated by connective support tissue and surrounded by adipose tissue. The amount and distribution of adipose tissue determines the size and shape of the breast (Figure 41-3). Breast tissue also contains mammary glands, modified sweat glands that become the organs of milk production, and a system of ducts for the delivery of milk to the nipple. Mammary ducts respond to elevated levels of estrogen and progesterone produced during the menstrual cycle by increasing in size, resulting in premenstrual fullness and tenderness of the breasts.

Four hormones control the mammary glands: estrogen is responsible for the increase in size; progesterone stimulates the development of the duct system; prolactin stimulates the production of milk; and oxytocin causes the ejection of milk from the glands.

Menstruation

When a girl enters puberty, one of the many changes that occur is menarche, or the beginning of the menstrual cycle. Menstruation is a normal body process that occurs in every female. It is the physiologic means by which the body rid itself of the thickened endometrial wall that develops during the average 28-day cycle. The menstrual cycle involves a series of events controlled by hormones from the pituitary gland and the ovaries. The cycle is divided into three phases: the follicular phase, the luteal phase, and the menstrual phase.

Follicular Phase (Proliferative Phase)

The hypothalamus begins the follicular phase by secreting gonadotropin-releasing hormone (GnRH), stimulating the anterior pituitary to release follicle-stimulating hormone (FSH) and luteinizing hormone (LH). These hormones mature a graafian follicle in an ovary that contains an ovum. The ovarian follicle secretes estrogen, which stimulates the growth of the endometrium. It takes approximately 9 days (to day 14 of the menstrual cycle) for the graafian follicle to ripen and bulge out from the ovarian wall. The ovarian wall becomes thinner as the follicle enlarges until it bursts, allowing the ovum to be liberated into the abdominal cavity. Expulsion of the egg ends the follicular phase. The fallopian fimbriae begin their wave-like motion to fan the ovum into the fallopian tube. The rupture spot on the ovary, now called the corpus luteum, begins to secrete progesterone. Ovulation causes a rise in body temperature, and some women experience cramping and tenderness in the lower abdominal area at this time as a result of the rupture of the graafian follicle.
**Luteal Phase (Secretory Phase)**

Once ovulation is complete, the luteal phase begins (day 15). During this phase, progesterone secreted by the corpus luteum causes extensive growth of the endometrium as it prepares for a possible pregnancy. If conception occurs, the corpus luteum continues to secrete progesterone until the placenta is well established and can secrete progesterone and HCG to maintain the pregnancy. If conception does not occur, HCG is not secreted, and the corpus luteum atrophies. Without increased levels of progesterone and HCG, the endometrium breaks down, and menstruation begins.

**Menstrual Phase**

Menstruation begins on day 28. This discharge is made up of necrotic endometrial tissue, mucus, and the blood from the endometrial engorgement. As the uterus contracts to shed the excess tissue, a woman may experience cramping pain and irritability. This phase usually lasts approximately 5 days, and then the follicular phase begins again.

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**CONTRACEPTION**

A woman's choice of a contraceptive method is based on many factors. To make an informed choice, a patient should know the risks, benefits, side effects, costs, failure rates, and convenience of each available method. In addition, although condoms are only moderately successful at preventing pregnancy, they should be used consistently to prevent transmission of sexually transmitted diseases (STDs). The medical assistant may help provide patient education on contraceptive methods. Table 41-1 summarizes the characteristics of various contraceptive methods.

**Barrier Methods**

Barrier methods of contraception either kill sperm through the use of a chemical spermicide or prevent them from entering the cervical os. These methods, which are relatively inexpensive, include the condom, diaphragm, and cervical cap. Each method must be used every time the person has intercourse, which means the patient must be motivated to follow through on using it. Patient education on the use of a diaphragm includes the following instructions:

- Examine the diaphragm before each use by holding it up to a bright light to check for holes or cracks.
- Place 1 to 2 tablespoons of spermicidal jelly or cream into the diaphragm dome before insertion.
- Leave the diaphragm in place for 6 hours after intercourse; do not douche until after you have removed it.
- Before repeated intercourse, add spermicide to the outside of the diaphragm with an applicator. Do not remove the diaphragm until 6 hours after the last intercourse.
- After removal, wash the diaphragm with soap and water, allow it to air dry, and inspect it for breaks or holes before storing.
- Have the diaphragm refitted if (1) you gain or lose more than 10 to 15 pounds; (2) you have a miscarriage, give birth, or undergo any type of pelvic surgery; or (3) you...
TABLE 41-1 Characteristics of Various Contraceptive Methods

<table>
<thead>
<tr>
<th>Type</th>
<th>Failure Rate</th>
<th>Characteristics</th>
<th>Contraindications</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condom (barrier method)</td>
<td>2%-10%</td>
<td>No prescription or examination needed; easily available; inexpensive</td>
<td>Latex allergy in either partner</td>
<td>Possible allergic response to latex or spermicide</td>
</tr>
<tr>
<td>Diaphragm or cervical cap (barrier method)</td>
<td>2%-19%</td>
<td>Must be fitted by clinician; requires instruction on how to insert and remove; spermicide must be used each time; diaphragm must be left in place for 6 hours after intercourse</td>
<td>Latex, rubber, or spermicide allergy; uterine prolapse; severe cystocele or rectocele</td>
<td>Increased risk for UTI (diaphragm); increased risk of abnormal Pap test result (cap)</td>
</tr>
<tr>
<td>Intrauterine device (IUD)</td>
<td>2%-6%</td>
<td>Causes endometrial inflammation, preventing implantation of a fertilized egg</td>
<td>Cervicitis, vaginitis, endometriosis, pelvic infection, history of STD or ectopic pregnancy</td>
<td>Increased risk of PID; spotting in 10%-15% of users</td>
</tr>
<tr>
<td>Depo-Provera (DMPA)</td>
<td>0.5%</td>
<td>Requires 150-mg IM injection q 3 mo</td>
<td>Intention of becoming pregnant within 1 yr; breast cancer; liver disease</td>
<td>Return of fertility may be delayed 10-18 mo; headache, weight gain, possibly depression</td>
</tr>
<tr>
<td>Oral contraceptives (OCPs)</td>
<td>1%</td>
<td>Suppress ovulation; atrophy of the endometrium</td>
<td>Thrombolytic, liver, or coronary artery disease; breast, liver, reproductive tract cancer; smoker over age 35; diabetes; sickle cell disease</td>
<td>Nausea, breakthrough bleeding, breast tenderness, fluid retention, hypertension, elevated lipid levels, blood clots, strokes</td>
</tr>
<tr>
<td>Hormonal patch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal ring</td>
<td></td>
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</tbody>
</table>

IM, intramuscular; PID, pelvic inflammatory disease; STD, sexually transmitted disease; UTI, urinary tract infection.

have difficulty voiding or moving your bowels with the diaphragm in place.

The cervical cap is a thimble-sized, domed barrier device that fits over the end of the cervix. It also is used with spermicidal jelly. It is 92% to 96% effective if used properly. An advantage of this barrier method is that the cap can be inserted up to 12 hours before intercourse and can stay in place up to 72 hours without affecting effectiveness or safety.

Hormonal Contraceptives

Hormonal contraceptives are a highly effective and reversible form of contraception. They work by inhibiting ovulation, changing the cervical mucosa, affecting sperm mobility, and preventing the thickening of the endometrial wall. Hormonal contraceptives include the birth control pill or patch, the vaginal ring, and Depo-Provera injections.

Besides being a highly effective method of birth control, oral contraceptives can be used to treat a wide range of gynecologic conditions, including menstrual irregularities, premenstrual syndrome (PMS) symptoms, and anovulation; they also can be used to prevent ovarian cysts and may be prescribed to increase bone density. However, to be effective, the pills must be taken daily. Failure rates are associated with noncompliance and can range from less than 1% in highly compliant women to greater than 15% in those who do not take the pills as prescribed. Oral contraceptive pills (OCPPs) can have serious side effects, so patients should be informed of conditions that require immediate medical attention. These can be remembered with the mnemonic ACHEFS: abdominal pain (new and severe), chest pain (new and severe), headaches (new or more frequent), eye problems (blurred vision or vision loss), and severe leg pain. These symptoms may indicate the formation of a blood clot in the abdomen, chest, or leg, or they may be signs of a stroke; blood clot formation and strokes are the most serious complications of OCPs.

A type of oral contraception, Seasonale, limits the number of menstrual periods to four a year, although patients are more likely to have spotting and breakthrough bleeding with this hormone therapy than with the traditional 28-day birth control pill. Seasonale is designed to be taken once a day for 84 days, and then an inactive dose is taken for a week, during which the woman would menstruate. A recently released OCP, Yaz, may be prescribed for women suffering from a severe form of PMS and also is useful for treating acne in female patients less than 14 years of age who have started menstruating.

As mentioned, hormonal contraception also can be delivered via a transdermal patch, the Ortho Evra patch. The patch is a 1½-inch square that slowly releases estrogen and progesterin through the skin and into the bloodstream. It is considered as effective as oral contraceptives in women who weigh less than 198 pounds. Women who choose the patch as a birth control method are exposed to 60% more estrogen than those who take OCPs. For this reason, patch users may be at greater risk of side effects. The side effects of the patch are similar to those of birth control pills, but the risk for heart attack, stroke, and blood clots may be slightly greater. Cigarette smoking increases the risk of serious cardiovascular side effects, especially if the patient is over age 35. Patients should be told not to apply any creams or oils at the application site, to change the patch weekly for 3 consecutive weeks, and to go patch free the fourth week, allowing menstruation to occur. The patch can be applied to the buttocks,
lower abdomen, and upper body but not to the breasts. The woman can bathe, shower, and swim while wearing the patch, but if it comes off, it should be replaced immediately.

The vaginal ring (NuvaRing) contraceptive device is made of flexible plastic and is inserted into the vagina. The ring slowly releases estrogen and progestin to prevent pregnancy and provide effective contraceptive action for 1 month after insertion. The device is 2 inches in diameter and can be inserted anywhere in the vagina; however, the deeper it is placed, the less likely it is to be felt after insertion. Side effects of the NuvaRing are similar to those of other hormonal contraceptives, and it may increase the risk of heart attack, stroke, and blood clots. When the patient first starts using the ring, an additional method of birth control must be used for the first week. If the ring falls out, it should be rinsed with warm water and reinserted within 3 hours. If it is out for longer than 3 hours, contraception is not certain and the patient should use another birth control method for 1 week.

Depo-Provera is an injectable contraceptive that contains high doses of progestin. Each dose prevents pregnancy for up to 3 months, but women must be compliant in returning to the healthcare facility for follow-up and repeat doses every 9 to 13 weeks. The first injection should be administered within the first 5 days of the menstrual period for birth control coverage. This is a highly effective method of contraception and is ideal for women who either do not comply with a birth control regimen or do not want to take a pill every day. However, using Depo-Provera for 2 years or longer may increase the risk of bone loss and the eventual development of osteoporosis. Almost all patients using the injections experience some menstrual irregularities, but these usually subside after two doses. Women using this form of hormonal contraception are not at risk for the side effects of estrogen exposure, such as an increased risk of blood clots and cardiovascular disease.

### Intrauterine Devices

The intrauterine device (IUD) (Figure 41-4) is a T-shaped plastic frame with threads attached that is inserted by the physician into the uterus to prevent pregnancy. Two types of IUDs currently are available: the copper type (ParaGard) and the hormonal type (Mirena). Both products inhibit fertilization by blocking the sperm's journey to the fallopian tubes, and if fertilization does occur, they prevent the embryo from implanting in the uterine wall. In addition, ParaGard releases copper, which acts to slow sperm in the cervix, and Mirena releases progestin, which reduces sperm mobility and prevents thickening of the endometrial wall during the menstrual cycle. Both types of IUDs are extremely effective at preventing pregnancy (over 99%); the copper type can remain in place as long as 10 years, whereas hormonal IUDs must be replaced every 5 years. The copper IUD may increase vaginal bleeding and menstrual pain, and the hormonal IUD results in both decreased menstrual flow and cramping. Shortly after placement of an IUD, the risk of infection is greater, so the physician may prescribe antibiotics before insertion to reduce this risk. To remove an IUD, the physician gently withdraws it by pulling on the IUD string. In rare instances it must be removed surgically.

### Permanent Methods

Both male and female patients can undergo surgical procedures that are considered permanent contraceptive methods. Vasectomies in the male were addressed in Chapter 40. For the female, a bilateral tubal ligation can be performed in which a portion of both fallopian tubes is excised or ligated. The cost and rate of complications are higher for tubal ligations than for vasectomies. In addition, tubal ligations must be done on an outpatient basis with general anesthesia, so the woman has that additional risk. Both procedures can be reversed, but not always successfully.

### GYNECOLOGIC DISEASES AND DISORDERS

### Menstrual Disorders and Conditions

Amenorrhea is the absence of menstruation for a minimum of 6 months; in oligomenorrhea, the woman has not experienced a period for 35 days to 6 months. The absence of menstruation outside pregnancy could be the result of a number of factors, including hormonal imbalances, thyroid disease, ovarian failure, or structural defects in the female sex organs. If a patient has established menstruation that stops, this usually is because of a hypothalamic or a pituitary problem. Suppression of the hypothalamus can occur as a result of an eating disorder, stress, or extreme exercise that results in a low body fat content.

Women who do not ovulate and therefore do not go through a monthly shedding of the endometrial wall of the uterus are at greater risk of cancer of the endometrium and the breast. Patients usually are started on oral contraceptives that artificially provide-
the hormones needed to create a monthly menstrual cycle. These women may experience fertility problems and require further testing and medical intervention to become pregnant.

Abnormal menstrual bleeding is a common cause of OB/GYN visits. Menorrhagia is excessive menstrual blood loss, such as a menses lasting longer than 7 days. The physician may ask the patient to count the number of tampons and pads used for several cycles to establish a method of determining an estimate of blood loss. Iron-deficiency anemia is a sign that a woman is losing excessive amounts of blood. Metrorrhagia is spotting or bleeding between menstrual cycles. The physician may prescribe oral contraceptives to atrophy the endometrium and lessen the bleeding. Surgical options for excessive menstrual flow are a dilation and curettage (D&C) or, in extreme cases, a hysterectomy.

**Endometriosis**

Endometriosis is characterized by the presence of functional endometrial tissue outside the uterus. It commonly is found attached to the ovaries, urinary bladder, fallopian tubes, peritoneal ligaments, intestines, and peritoneum. Many hypotheses have been offered to explain this migration of endometrial tissue, but the most accepted is a retrograde flow curing menstruation that causes menstrual fluid and stray endometrial cells to migrate out of the fallopian tubes and implant in the pelvic region. The use of tampons has been suggested as a possible cause. A familial tendency also has been noted; a woman with a first-degree relative (a mother or sister) who has the condition has a 10 times greater risk of developing the disorder.

The ectopic endometrial tissue responds to routine hormonal changes; it proliferates, degenerates, and bleeds just as does the endometrium of the uterus throughout the menstrual cycle. This causes inflammation at the site of the implantation that recurs with each cycle, ultimately leading to adhesions and obstruction of the affected tissue. The primary symptom of endometriosis is dysmenorrhea (painful menstruation). More than one third of affected patients also report dyspareunia (painful intercourse), and others complain of contact pain in the lower abdomen, pelvis, and back beginning 7 days before menses and lasting 3 days after onset. Other symptoms can include profuse menses, hematuria, rectal bleeding, nausea, vomiting, and abdominal cramps. Infertility is a serious problem for approximately 70% of women afflicted with endometriosis because of the buildup of scar tissue and adhesions in and around the fallopian tubes.

Conservative treatment via the use of hormones is recommended when the woman wants to have children. Treatment may consist of a laparoscopy to remove the ectopic endometrial tissue. Pharmaceutical treatment includes continuous use of oral contraceptives to prevent menstruation or Depo-Provera injections. Leuprolide acetate (Lupron) injections may be prescribed intramuscularly every month for 6 months; however, Lupron puts the patient into a state of artificial menopause and can cause menopausal symptoms, including hot flashes, vaginal dryness, and bone density loss. In severe cases, a total hysterectomy may be indicated. No cure is available, but pregnancy, nursing an infant, or natural menopause frequently causes remission (Figure 41-5).

**CRITICAL THINKING APPLICATION 41-2**

Melissa Steiner, a 19-year-old patient of Dr. Beck, was diagnosed with endometriosis when she was 17. She has had two laparotomy procedures and continues to complain of moderate to severe pain before and during menstruation. What can Betsy tell her about the disease to help her understand why she has the pain? Melissa also wants to know about long-term complications, including the impact of the disease on fertility. She asks Betsy to help her understand Dr. Beck’s explanation of the disease.

**Infections**

**Candidiasis**

*Candida albicans* is the yeastylike fungus responsible for this candidiasis. *Candida* organisms are commonly part of the normal flora of the mouth, skin, intestinal tract, and vagina. Overgrowth of the organism can be caused by antibiotic use, high estrogen levels, oral contraceptive use, diabetes mellitus, and immunosuppression disorders, including acquired immunodeficiency syndrome (AIDS). Candidiasis also can be spread through sexual contact. Symptoms include vulvovaginal itching; dry, bright red vaginal tissue; and an odorless, white, "cottage cheese" vaginal discharge. This infection can be treated with prescription antifungal medications, such as oral Diflucan or miconazole or terconazole vaginal suppositories, as well as with over-the-counter (OTC) creams or suppositories, such as Gyne-Lotrimin or Monistat. Women prescribed an antibiotic for a different infection may develop vaginal candidiasis as a side effect. To help prevent the development of a fungal infection during antibiotic therapy, the patient can eat active-culture yogurt and drink acidophilus milk.

**Bacterial Vaginosis**

Bacterial vaginosis (BV) occurs when the normal level of bacteria in the vagina is disrupted and secondary bacteria begin to grow and infect the tissue lining. Signs and symptoms include vaginal discharge, odor, pain, pruritus, or burning. Although BV is the most common vaginal infection in women of childbearing age in the United States, it does not usually cause complications. However, an infection of the vagina appears to make women more susceptible to STDs, including infection with the human immunodeficiency virus (HIV); it may lead to pelvic inflammatory disease (PID) if the infection spreads; and in pregnant women, it is associated with a premature or low-birth-weight infant. For these reasons, antibiotic therapy is especially important for pregnant women. The antibiotic of choice is either metronidazole (Flagyl) or clindamycin (Cleocin).

**Cervicitis**

Cervicitis is an inflammation of the cervix caused by an invading organism. The main sign is a thick, purulent, whitish discharge with an acrid odor. Dysuria may also be noted. Cervicitis can occur after vaginal delivery as a result of an infected cervical laceration, but most cases are caused by an STD. Treatment consists primarily of antibiotics, although cautery may be indicated when cervical erosion exists.
Pelvic Inflammatory Disease

PID is any acute or chronic infection of the reproductive system that ascends from the vagina (vaginitis), cervix (cervicitis), uterus (endometritis), fallopian tubes (salpingitis), and ovaries (oophoritis). These infections may cause the fallopian tubes to fill with pus, and chronic episodes can result in scarring of the fallopian tubes and the formation of adhesions. PID is caused by advanced, untreated vaginosis, gonorrhea, or chlamydial infections; or it can develop from infections after pelvic surgery, tubal examinations, or abortions. PID is responsible for a large percentage of cases of infertility in women, primarily because of adhesions that form in the fallopian tubes, preventing the ovum from migrating through the tube. The patient may be asymptomatic or may complain of purulent vaginal discharge, fever, malaise, dysuria, lower abdominal pain, bleeding, nausea, and vomiting. Cultures of cervical discharge typically are done to determine the pathogenic organism. Treatment should include broad-spectrum antibiotic therapy, such as cefoxitin (Floxin) with Flagyl or ceftriaxone (Rocephin) with doxycycline (Vibramycin). If cultures are positive for an STI, treatment of the patient's sexual partner is necessary to prevent reinfection.

TRENDS IN REPORTABLE SEXUALLY TRANSMITTED DISEASES

- Inflammatory STDs can facilitate the transmission of infection with the human immunodeficiency virus (HIV).
- Chlamydia is known as the “silent” STD because 75% of infected women and 50% of infected men are asymptomatic. An estimated 40% of women with untreated chlamydia infections develop pelvic inflammatory disease (PID), with resultant infertility in 20% of those. The condition is diagnosed in African-American women almost seven times more frequently than in Caucasian women. The highest rates are seen in 15- to 19-year-olds. The Centers for Disease Control and Prevention (CDC) recommends yearly chlamydia screening for sexually active women under age 26 and those older with risk factors, including new or multiple sex partners. Women infected with chlamydia are up to five times more likely to become infected with HIV if exposed. If chlamydia is diagnosed, the patient and partner should abstain from sexual intercourse until treatment has been completed to prevent reinfection.
Sexually Transmitted Diseases

The list of infectious diseases spread by sexual contact continues to grow. These diseases are considered the most common contagious diseases in the United States. All STDs are transmitted from one person to another through body fluids such as blood, semen, and vaginal secretions during sexual, anal, or oral sex (Figure 41-6). A summary of STDs was included in Chapter 40. This chapter focuses on the impact of STDs on women.

The human papilloma virus (HPV), which causes genital warts, is a special concern in women. The infection may be asymptomatic up to 2 years after exposure; however, regardless of whether the virus causes symptomatic wart development, the infection can lead to serious complications in women. HPV infection typically is first diagnosed by abnormal Pap test results, because all 100 of the identified HPV strains can cause Pap test abnormalities. A positive Pap test result is followed up with an HPV DNA test to diagnose the specific strain of HPV that caused the infection. Although most women have healthy immune systems that can successfully clear the virus without the development of future health problems, approximately 10 HPV strains are linked to the development of cervical carcinoma. Women diagnosed with one of these carcinogenic strains must have regular Pap testing, usually every 3 to 6 months, for early detection and treatment of precancerous and cancerous cells on the cervix.

A recently developed vaccine, Gardasil, is now available to protect women who have not yet been infected by HPV. It is the first vaccine designed to prevent diseases caused by specific strains of HPV, including cervical cancer, precancerous genital lesions, and genital warts. The vaccine is routinely recommended for 11- and 12-year-old girls, as well as those between the ages of 13 and 26 who have not been infected with HPV. The vaccine is effective against the four HPV types that cause approximately 70% of cervical cancers, and it can prevent 90% of genital warts outbreaks. The vaccine is administered in three separate doses over a 6-month period and total costs can range from $300 to $500.

Table 41-2 summarizes the effects of STDs on women. Individuals 35 to 44 years of age have the highest reported incidence of HIV infection and AIDS. The percentage of women and girls infected with HIV is declining, largely because of educational emphasis on the use of condoms; however, heterosexual exposure still accounts for 31% of HIV cases diagnosed each year. Because HIV can be transmitted through the placenta to the developing fetus, it is crucial that women be diagnosed either before pregnancy or as early in the pregnancy as possible. Treatment of HIV-positive pregnant women with a three-part ZDV regimen (zidovudine, AZT, or Retrovir) reduces the risk of HIV infection in the infant by almost 70%. According to this treatment protocol, the pregnant woman should start taking ZDV at 14 to 34 weeks; it should be administered intravenously during labor and delivery; and it should be given to the infant every 6 hours for 6 weeks after birth. Because some AIDS drugs are very dangerous for developing infants, the medication regimen of a woman currently receiving treatment may be changed during pregnancy. Women who are HIV positive should never breast-feed, because the virus is present in breast milk.

Benign Tumors

Fibroid Tumors

Uterine fibroid tumors, also called fibromyomas, leiomyomas, or myomas, are idiopathic benign tumors composed mainly of smooth muscle and some fibrous connective tissue. These tumors appear to have a genetic link, because they tend to run in families. Fibroids vary in number, size, and location in the uterus and are quite common. Menorrhagia is the primary symptom, although the patient may experience bladder or rectal pressure, pelvic pressure, pain, abdominal distention, and infertility. Fibroid tumors affect premenopausal women, because they consist of estrogen-sensitive cells. Fibroid tumors do not recur and do not undergo malignant transformation; therefore, patients with fibroid tumors have an excellent prognosis. Treatment depends on the severity of the symptoms and the patient's age. Because fibroid tumors tend to become smaller and calcify after menopause, the masses
can be removed surgically, or a hysterectomy may be indicated if bleeding is a serious problem (Figure 41-7).

**Ovarian Cysts**

Ovarian cysts are sacs of fluid or semisolid material that form on or near the ovaries. They can occur in the follicle or the corpus luteum anytime between puberty and menopause. Most cysts are benign, and small, asymptomatic cysts do not require treatment. Large or multiple cysts may cause discomfort, low back pain, nausea, vomiting, and abnormal uterine bleeding. These can be treated with birth control pills over a period of several months to reduce the size of the cysts or prevent the development of new cysts. If pharmaceutical therapy is not sufficient, laparoscopic procedures can be done to drain or remove large cysts. Surgery may be indicated if a cyst ruptures or in cases of torsion of the ovary, in which twisting cuts off the blood supply to the ovary.

Polycystic ovary syndrome is a hormonal problem that may cause cysts to develop over enlarged ovaries. The diagnosis depends on the presence of two or more indicators, including irregular or no menstruation, high testosterone levels, hirsutism (excessive body hair in a masculine pattern), acne, and male pattern baldness (alopecia). Women affected by this disorder have unusually high levels of testosterone, estrogen, and LH and decreased amounts of FSH. They initially may be diagnosed because of fertility problems. The combination of hormone irregularities causes the symptoms associated with the disorder; however, some women are diagnosed by menstrual irregularity alone. These women are at greater risk of uterine cancer, because the endometrium does not slough off monthly. Also, there appears to be a link with insulin and cholesterol metabolism, so women with this disorder are at greater risk of developing diabetes mellitus type 2 and heart disease. The condition is treated with OCPs to stimulate menses artificially, to lower androgen levels, and to reduce masculine-type symptoms if present.

**Fibrocystic Breast Disease**

Fibrocystic breast disease is characterized by the presence of multiple, palpable nodules in the breasts; the nodules usually are associated with pain and tenderness and fluctuate with the menstrual cycle (Figure 41-8). Over time, the cysts enlarge, and the connective tissue of the breast is replaced with dense, firm fibrous tissue. The masses may be fibrous tumors that have degenerated or sacs filled with fluid. The cysts feel firm and movable, and the degree of tenderness and size depend on the point in the menstrual cycle, with tenderness peaking just before and during the secretory phase. Several different cellular types of cysts can form, but fibrocystic changes in the breast are not considered precancerous.

Although the risk of breast cancer is not increased with fibrocystic breast disease, the diagnosis of cancerous breast masses becomes more complicated. Because the breasts consistently feel lumpy, breast examinations may not isolate a suspicious mass. In
<table>
<thead>
<tr>
<th>DISEASE (CAUSATIVE ORGANISM)</th>
<th>SIGNS AND SYMPTOMS</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia (Chlamydia trachomatis)</td>
<td>Dysuria; urinary frequency; abdominal pain; increased or decreased vaginal discharge. May cause endometritis, PID, and urethritis. Transmission to newborn can occur during vaginal delivery; causes neonatal eye infections and pneumonia.</td>
<td>Curable with antibiotic therapy; azithromycin (Zithromax), tetracycline, or Vibramycin</td>
</tr>
<tr>
<td>Genital herpes simplex virus (HSV-2) infection</td>
<td>Painful genital vesicles and ulcers; erythema and pruritus; tingling or shooting pain 1-2 days before outbreak; cycle through episodes. Viral shedding may occur during asymptomatic periods. Newborns can be infected by active lesions in vagina at birth. Brain damage, blindness, or death of the newborn may occur. Cesarean section if active lesions at time of birth. Increases risk for cervical cancer.</td>
<td>No care, but antiviral therapy during episodes shortens duration of lesions; acyclovir (Zovirax), famciclovir (Famvir), or valacyclovir (Valtrex)</td>
</tr>
<tr>
<td>Genital warts (HPV)</td>
<td>Most prevalent STD; period of communicability is unknown; lesions seen more frequently in women; tend to recur; 25% of women with HPV develop invasive cervical cancer, should be followed with routine Pap smears (every 3-6 months).</td>
<td>Goal of treatment is to remove symptomatic warts; cryotherapy to lesions; podofilox solution or imiquimod cream to lesions</td>
</tr>
<tr>
<td>Gonorrhea (Neisseria gonorrhoeae) — bacteria</td>
<td>Dysuria; urinary frequency; abdominal pain; increased or decreased vaginal discharge. May cause endometritis, PID, and urethritis.</td>
<td>Curable with antibiotic therapy; cefixime (Suprax), azithromycin, doxycycline</td>
</tr>
<tr>
<td>Syphilis (Treponema pallidum) — spirochete bacteria</td>
<td>Six stages that can affect multiple body systems; 10- to 90-day incubation; initial sign is a painless lesion, or chancre, at the exposure site (vulva or vagina); serous discharge from chancre; lymphadenopathy. If not treated, advances to later stages. Can infect fetus via the placenta, resulting in congenital syphilis.</td>
<td>Penicillin G (Wycllin); if patient is allergic to penicillin, doxycycline or tetracycline</td>
</tr>
<tr>
<td>Trichomoniasis (T. vaginalis) — protozoa</td>
<td>May be asymptomatic; urinary frequency, urgency, and dysuria; frothy yellow-green vaginal discharge; pruritus.</td>
<td>Metronidazole (Flagyl); partner must be treated</td>
</tr>
</tbody>
</table>

HPV, human papillomavirus; PID, pelvic inflammatory disease; STD, sexually transmitted disease.
addition, accurate mammography screening is complicated by the dense nature of the cysts, making visualization of a cancerous area more difficult. Because caffeine and high-fat diets aggravate the symptoms of fibrocystic breast disease, diet therapy often is recommended. Patients should be encouraged to perform monthly breast self-examination (BSE) and report any changes in the breast immediately.

**Malignant Tumors**

Most problems encountered with the female reproductive organs are related to abnormal cell growth. Early screening and preventive intervention are essential. Most malignant tumors require surgical removal. Radiation, chemotherapy, and hormone therapy are alternative treatment choices.

**Cervical Cancer**

Almost all cervical carcinomas are caused by HPV. The first stage of cervical cancer is asymptomatic, but early diagnosis of cervical cellular changes is possible with a Papanicolaou (Pap) smear. During the invasive stage, the patient reports abnormal vaginal bleeding and persistent discharge, as well as bleeding and pain during intercourse. The average age of diagnosis for carcinoma in situ (cancerous cells restricted to the original site) currently is 35; however, it continues to drop, because the number of cases in young women is increasing. The American Cancer Society recommends that all sexually active women and those over age 18 have a Pap smear annually (Procedure 41-1). Women with HPV infection may be tested every 3 to 6 months, depending on previous Pap results.

The patient should be informed of factors that can interfere with Pap test results, including menstruation and the use of vaginal creams, spermicidal foams, and douching 2 to 3 days before the examination. Also, the patient should refrain from vaginal intercourse for 24 hours before the examination because it may cause inflammation. The medical assistant should include in the patient history the use of certain medications, such as tetracycline, which may interfere with results; whether the patient has a latex allergy; the date of the last menstrual period (LMP); whether the patient has a history of a bleeding disorder or is taking anticoagulant medications; and whether the patient is pregnant or may be pregnant.

The physician obtains the cervical smear with a Cytobrush or small wooden spatula that is inserted and rotated in the cervical canal to obtain endocervical cells for cytology. The ThinPrep Pap Test has replaced the traditional slide preparation method for analyzing these cells, because it is more accurate in diagnosing precancerous and cancerous lesions and rarely has to be repeated because of an inadequate cellular sample. The physician uses the same technique to collect the cellular sample, but instead of fixing it onto a glass slide, the collection device is rinsed into a vial containing a preservative solution. In the laboratory, a processor filters the sample and creates a slide with a thin layer of cellular cells that is more uniform and better preserved than is possible with the traditional method.

The pathologist examines the slide to determine whether cellular abnormalities are present. The results are classified into one of five categories: negative or normal; atypical squamous cells; abnormal with low-grade squamous lesions; abnormal with high-grade lesions (precancerous); or carcinoma cells. Inflammation or an STD infection can cause abnormal changes in cervical cells, so the physician decides how to manage abnormal results based on other diagnostic studies.

If the Pap test indicates abnormal cells, the pathologist can grade cervical changes using a cervical intraepithelial neoplasia (CIN) system of I to III, depending on the degree of cellular dysplasia (Figure 41-9). CIN I indicates mild to moderate dysplasia; CIN II, moderate and moderate to severe dysplasia; and CIN III, carcinoma in situ. Patients whose Pap smears indicate dysplasia of any severity should have a colposcopy with biopsy if indicated and possibly an endocervical curettage or conization procedure. If adequately diagnosed and treated, carcinoma in situ of the cervix has a 100% survival rate at 5 years.

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**PROCEDURE 41-1**

**Prepare a Patient for Procedures and/or Treatments: Assist with the Examination of a Female Patient and Obtain a Pap Smear**

**GOAL:** To assist the physician in the examination of a female patient and in obtaining a diagnostic Pap smear.

**EQUIPMENT and SUPPLIES**

- Patient gown
- Lubricant
- 4 x 4-inch gauze squares
- Laboratory requisition slips
- Drape sheet
- Examination light
- Cervical spatula and Cytobrush
- ThinPrep container
- Vaginal speculum
- Uterine sponge forceps
- Disposable examination gloves
- Urine specimen container if needed
- Stool for occult blood test, if needed
- Biohazard waste container
- Appropriate patient education materials
- Patient’s record

**PROCEDURAL STEPS**

1. Assemble the materials needed and prepare the room.

Prepare the equipment and supplies needed for the Pap smear (Figure 1).
2. Sanitize your hands and follow Standard Precautions.
   **PURPOSE:** To ensure infection control.

3. Identify the patient and briefly explain the procedure.
   **PURPOSE:** To gain the patient's cooperation and alleviate apprehension.

4. Instruct the patient to empty the bladder and collect a urine specimen if needed.
   **PURPOSE:** The physician's bimanual examination (see Figure 41-15) is performed on an empty bladder.

5. Instruct the patient to disrobe completely and to put on a gown with the opening in the front.

6. Assist the physician with the breast examination. To start, have the patient sit at the end of the examination table. Drape the patient and assist the physician with the examination. Reassure the patient as needed.

7. When the physician is ready to examine the breasts and the abdomen with the patient in the supine position, assist the patient into the supine position and drape as needed.
   **PURPOSE:** To prevent unnecessary exposure of the patient.

8. When the physician is ready to begin the vaginal examination, assist the patient into the lithotomy position. Have the patient slide down to the end of the table; then adjust the stirrups as needed so that the knees are relaxed and rotated outward. Remember always to position the patient while she is underneath the drape.

9. Direct the light source onto the perineum.
   **PURPOSE:** To facilitate better viewing of the cervix.

10. Put on gloves. Warm the stainless steel vaginal speculum in warm water (the physician may prefer a disposable plastic speculum). Pass the proper instruments to the physician in the proper sequence. The physician will need the Cytobrush for cervical cells and the spatula for the cervical sample.
    **PURPOSE:** Teamwork enhances efficiency.

11. Assist the physician with ThinPrep preparation if desired by swirling the cervical specimen in the preservative solution at least 10 times to ensure that the specimen has been mixed with the preservative solution (Figure 2).

12. Label the specimen container and place it in a biohazard bag.

13. Apply water-soluble lubricant to the physician's fingers.
    **PURPOSE:** To facilitate the bimanual examination.

14. The physician may prepare a stool sample for occult blood testing after the rectal examination. Have the materials ready.

15. Instruct the patient to breathe deeply through the mouth with the hands crossed over the chest.
    **PURPOSE:** To help relax the muscles.

16. Place the soiled instruments in a basin.
    **PURPOSE:** To help create better aesthetic surroundings.

17. Assist the patient off the table and with dressing if needed.

18. While the patient is in the dressing room, clean the examination room, removing used equipment.

19. Sanitize and sterilize stainless steel equipment. Remove your gloves and sanitize your hands.
    **PURPOSE:** To ensure infection control.

20. Prepare the Pap smear and other samples for transportation to the laboratory. Complete the requisitions, including the date of the patient's last menstrual period (LMP) and whether she is on hormone therapy.

21. Record all procedures in the patient's medical record.
    **PURPOSE:** A procedure is not done until it is entered into the patient's record.

8/23/XX  2:00 PM    Pap smear and pelvic examination completed by physician. ThinPrep specimen placed for pick-up by University Laboratory for cytology. Pt tolerated procedure well.
    Betsy Davis, CMA (AAMA)
Carcinoma of the cervix is classified into the following stages:
- Stage 0: Carcinoma in situ
- Stage I: Carcinoma of the cervix with no adnexal involvement
- Stage II: Carcinoma of the cervix that has not spread into the pelvic wall or vagina
- Stage III: Carcinoma of the cervix that has spread into the lower part of the vagina; may be blocking the ureters
- Stage IV: Carcinoma of the cervix that has spread to nearby organs, such as the bladder or rectum, with involvement of structures outside the pelvic area

Colposcopy is the visual examination of the vagina and the cervical surfaces through the use of a colposcope (Figure 41-10). The colposcope is a microscope with a light source and a magnifying lens that can be used during a vaginal examination to locate and evaluate abnormal cells and detect cancer of the cervix in the early stages, examine tissue from which an abnormal Pap smear has been obtained, and monitor areas of the cervix where malignant lesions have been removed. Colposcopy also can be used to monitor women at risk of developing cervical cancer because their mothers were given diethylstilbestrol (DES) during their pregnancy. A cervical biopsy may be performed in conjunction with a colposcopy. A major advantage of obtaining a biopsy during colposcopy is that the instrument permits visualization of the suspicious area so that the biopsy can be taken from the most atypical site.

Colposcopy is a relatively safe, painless procedure performed in the physician's office. Discomfort may occur when the speculum is inserted into the vagina to improve visualization of the tissue. Discomfort and bleeding can occur when tissue is taken for biopsy. Depending on the results of a previous biopsy, the patient may need a more extensive procedure or conization, in which a cone-shaped wedge of cervical tissue is removed for treatment or further analysis. Some physicians prefer the less invasive loop electrosurgical excision procedure (LEEP), which is performed with injection of a local anesthetic to the cervix and insertion of a wire loop into the vagina. A high-frequency electrical current running through the wire is used to remove abnormal tissue from both the cervix and the endocervical canal. Like conization, LEEP can be used as a diagnostic tool to collect biopsy samples and as a treatment to remove abnormal tissue.
Depending on the condition of the cervix, cryosurgery, or the application of freezing temperatures, may be used to treat chronic cervicitis and cervical erosion. Freezing causes cellular necrosis, and in approximately 1 month, the dead cells are replaced with healthy cells. The procedure involves placing a probe against the problem area on the cervix and applying liquid nitrogen to the area for approximately 3 to 4 minutes or until the site is frozen (Procedure 41-2). The patient may experience some pain for 30 minutes or so after the procedure and a slight watery discharge for up to a week. If any signs of infection, foul discharge, or pain develop, the patient should call the physician’s office. She is advised not to engage in sexual intercourse for 1 month and to expect a heavier than usual menstrual flow for the first cycle after the procedure.

Endometrial Cancer

The inner lining of the uterus, the endometrium, is at increased risk for dysplasia in postmenopausal women who have never had children and in those who experienced early menarche and late menopause. Endometrial cancer also is seen more frequently in obese women and in those with a history of irregular ovulation. This slow-growing cancer begins with hyperplasia of the endometrial wall, followed by dysplasia. Early signs are irregular vaginal bleeding and leukorrhea (white or yellow) vaginal discharge. The diagnosis usually is made with an endometrial biopsy. Treatment involves a complete hysterectomy with radiation therapy and chemotherapy. Because most of these tumors develop after menopause, vaginal bleeding is unusual, and the woman is more likely to seek medical attention. Because of this, early diagnosis and treatment lead to a survival rate of almost 90%.

**Ovarian Cancer**

Ovarian neoplasms are the most important pathologic disorder of the ovaries. Ovarian cancer is the second most common gynecologic cancer but is ranked first in gynecologic cancer deaths. In fact, it causes more deaths than all other tumors of the reproductive system combined. Metastasis has occurred in 71% of cases before the tumor is diagnosed. Symptoms do not appear until the tumor has enlarged enough to exert pressure on nearby structures; patients complain of vague abdominal discomfort, bloating, urinary urgency, weight loss, and general malaise.

Researchers are working to perfect a blood test that can be used to screen for ovarian cancer so the disease can be diagnosed earlier, more treatable stages. Currently, ovarian cancer is diagnosed by a combination of a pelvic examination that indicates a mass in an ovary; a cancer antigen (CA)-125 blood test, which

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**PROCEDURE 41-2**

**Prepare a Patient for Procedures and/or Treatments: Prepare the Patient for Cryosurgery**

**GOAL:** To prepare the patient and assist the physician in cryosurgery.

**EQUIPMENT and SUPPLIES**

- Cryosurgery machine equipped with liquid nitrogen canister
- Cryoprobe
- Cervical tenaculum
- Cervical ring forceps or disposable cervical swabs
- Vaginal speculum
- 4 x 4-inch gauze squares
- Disposable examination gloves
- Gowns and face protection, appropriate PPE
- Specimen containers
- Biohazard waste container
- Cytology request forms
- Patient's record

**PROCEDURAL STEPS**

1. Assemble the necessary equipment.  
   **PURPOSE:** To expedite the procedure.
2. Sanitize your hands.  
   **PURPOSE:** To ensure infection control.
3. Take the patient’s temperature and blood pressure and record them in the patient’s record.  
   **PURPOSE:** To establish a baseline for vital signs.
4. Drape the patient and assist her into the lithotomy position. Put on gloves.
5. Assist the physician with the procedure by handing equipment as needed.
6. Encourage the patient to take deep breaths to promote relaxation of the pelvic muscles during the procedure. Observe the patient for any signs of distress.  
   **PURPOSE:** To ensure patient safety.
7. When the procedure is complete, place the patient in a supine position and allow her to rest while you tidy the room and remove the used supplies. Retake her temperature and blood pressure.  
   **PURPOSE:** To ensure that vital signs and blood pressure return to baseline levels.
8. Help the patient sit up and assist her in dressing if needed.  
   **PURPOSE:** To ensure patient safety.
9. Remove your gloves and sanitize your hands.  
   **PURPOSE:** To ensure infection control.
10. Disinfect and sterilize equipment per the manufacturer’s directions and return the equipment to the proper storage area.  
11. Provide instructions on follow-up care as ordered by the physician.
12. Record the procedure and the final vital sign measurements in the patient’s record.  
   **PURPOSE:** A procedure is not done until it is recorded.

7/22/XX 10:25 AM Cervical cryosurgery procedure completed by physician without incident. Pt stable, T=98.6°, BP 118/72. No c/o discomfort. Pt to call office if any problems noted. Betsy Davis, CMA (AAAMA)
identifies a protein found in abnormally high levels in women with ovarian cancer (although the test can produce false-positive and false-negative results); and a pelvic or transvaginal ultrasound to evaluate the size and shape of the ovaries. The ultimate diagnosis is based on a biopsy to confirm the presence of cancerous cells.

Little is known about how or why ovarian cancer occurs, but pregnancy, breast-feeding, and oral contraceptive use may reduce the risk. Treatment includes a complete hysterectomy (removal of the uterus, fallopian tubes, and ovaries), radiation therapy, and chemotherapy. Ovarian tumors are classified on the basis of their biologic features. About 20% of all ovarian tumors are cancerous, and the recovery rate is linked to the location, the stage of tumor development, and the patient’s age.

**Breast Cancer**

Breast cancer is the second leading cause of cancer deaths in women. According to the American Cancer Society, 1 in 8 women has a lifetime risk of developing breast cancer and a 1 in 28 risk of dying from the disease. Predisposing factors include a family history of breast cancer (especially in the mother or a sister), early menarche and late menopause, first pregnancy after age 30 or no pregnancy, prolonged use of estrogen replacement therapy, excess alcohol intake, smoking, and obesity.

Because recent research has failed to link reduced death rates from breast cancer with monthly breast self-examinations (BSE), the American Cancer Society now recommends that women have their physician perform a clinical breast examination (CBE) rather than rely on monthly SBEs for early detection. However, although monthly SBE is now considered optional, women still should be aware of the normal appearance and texture of the breasts and immediately report any changes or new breast symptoms to the physician. The medical assistant should be prepared to teach the BSE technique (Procedure 41-3). CBEs should be done every 3 years from age 20 to 39 and annually at age 40 and over. A mammogram should be done annually starting at age 40 and each year after that. If a woman has an increased risk of breast cancer (e.g., family history), the physician may recommend annual mammography screening before age 40 or other diagnostic procedures, such as ultrasound or magnetic resonance imaging (MRI). An MRI scan can reveal tumors too small to detect with a breast examination that may not show up clearly on a mammogram. The American Cancer Society recommends MRI screening for women with a high risk of developing breast cancer.

Indications of breast cancer include a palpable breast mass that is firm and immovable, breast pain, tissue thickening, nipple retraction or dimpling, nipple discharge, and axillary lymphadenopathy. If a breast mass is palpated, a mammogram or ultrasound of the area is ordered and, if indicated, a biopsy is performed. The physician may perform a needle biopsy to remove cells and/or tissue from a palpated mass for evaluation by the pathologist. If a nonpalpable mass is found on a mammogram, a **stereotactic**-guided needle aspiration is done, and surgical biopsy is a possible follow-up. During this procedure, the physician uses a mammogram to guide the needle toward the suspicious mass from which a biopsy sample can be taken. If a tissue sample cannot be obtained through a needle, a wire localization may be done to pinpoint the areas of concern from the mammogram. During this diagnostic procedure, a thin wire is passed through the breast to the point of concern (based on mammogram visualization). This wire marking is used during a surgical procedure to pinpoint tissue that was suspicious on the mammogram. If a biopsy shows malignant cells, the physician orders an estrogen and progesterone receptor test to determine whether hormones affect the way the cancer grows. If the cancer cells increase growth patterns when exposed to hormone levels, the physician may recommend treatment with a drug such as tamoxifen, which prevents estrogen from binding to these sites.

The treatment of breast cancer depends on the type of carcinoma and its staging. Treatment almost always begins with surgery, but the type of surgery and the extent of the tissue removed depend on several factors. Breast-saving surgeries include lumpectomy, in which only the suspicious mass plus a surrounding area of normal tissue is removed, and radiation

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**PROCEDURE 41-3**

**Instruct Patients According to Their Needs to Promote Health Maintenance and Disease Prevention:**

**Teach the Patient Breast Self-Examination**

**GOAL:** To teach the patient how to palpate her breasts to check for possible abnormalities.

**EQUIPMENT and SUPPLIES**

- Instruction pamphlet/shower card
- Teaching model (to demonstrate the technique before a return demonstration by the patient)
- Patient’s record

**PROCEDURAL STEPS**

1. Assemble the necessary equipment.
2. Instruct the patient to examine her breasts while bathing or showering in warm water, because the fingers glide more easily over wet tissue. The best time to perform this examination is immediately after the end of the menstrual period, when breast engorgement is minimal. Nonmenstruating women should examine their breasts the first of each month.
3. Instruct the patient to raise one arm, using the right hand to examine the left breast and the left hand for the right breast. Using the finger pads of the three middle fingers, move in a small circular pattern up and down the breast. Starting at the axillary region, work down the area and back up again from the axillary to the ribs below the breast, back up to the clavicle, repeatedly across to the sternum bilaterally (Figure 1).
4. After finishing her bath or shower, the patient should continue the
PROCEDURE 41-3—cont’d

examination in front of a mirror with the arms at the sides. Then, with her arms raised above her head, she should look carefully for changes in the size, shape, and contour of each breast. She should look for puckering, dimpling, or changes in skin texture (Figure 2).

5. Instruct the patient to squeeze both nipples gently and to look for discharge (Figure 3).
6. Before dressing, the patient should lie on a bed. A towel or pillow is placed under the right shoulder, and the right hand is placed behind the head. The right breast is examined with the left hand. Instruct the patient to press gently in small circles, starting at the top outermost edge, including the axillary region, and spiraling in toward the nipple. This is repeated with the left breast (Figure 4).

7. The patient should return the demonstration using the teaching model to confirm her understanding.
8. Give the patient an instruction pamphlet to use at home. If you have given her a shower card to follow, show her how it will hang inside the shower on a faucet or the shower nozzle and serve as a quick reference guide.
9. Record the patient education intervention in the patient’s medical record.

PURPOSE: Patient education interventions should always be documented; a procedure is not done until it is entered into the patient’s record.

therapy is used as a follow-up to destroy any remaining cancerous cells. A partial mastectomy may be done for more advanced cases; this procedure involves removal of the tumor and tissue surrounding it, part of the chest muscle beneath the mass, and some of the lymph nodes in the axillary region. A complete mastectomy, which involves removal of the entire breast, chest muscle, and axillary lymph nodes, may still be indicated if the mass has spread. However, removal of multiple axillary lymph nodes greatly increases the risk that subsequent lymphedema and recurrent infections will develop in the arm on the affected side. New techniques recommend the removal of the sentinel lymph node, the first lymph node to which the cancer is likely to spread from the tumor. The sentinel node is found by injecting a blue dye near the tumor; the lymph vessels absorb the dye and carry it toward the lymph nodes, and the first node to receive the dye and turn blue is the one that is removed for pathologic testing. If the sentinel node is cancer free, there is very little chance the breast tumor has metastasized, and no other nodes need to be removed. If cancer cells are evident, further diagnostic procedures are indicated to determine possible locations of metastatic tumors.

Many patients now opt for breast reconstruction after either a partial or complete mastectomy. This procedure typically is performed by a plastic surgeon and can be done using a variety
of methods, including implantation of either a silicone or gel material or the use of fat and other tissue from another part of the body, such as the abdomen, to reconstruct breast tissue. After the breast has been reformed, the physician uses tattoo techniques to create the areola and nipple. The patient must discuss these options with her surgeon before the mastectomy is performed; therefore, the medical assistant may be involved in the referral process.

**INFLAMMATORY BREAST CANCER**
- Inflammatory breast cancer is a rare, aggressive cancer that causes the sudden onset of discoloration and warmth in the affected breast, along with edema, dimpling of the skin, enlarged axillary lymph nodes, and pain.
- The condition is easily confused with a breast infection, so patients should contact their physician as soon as symptoms appear.
- Cancer cells spread rapidly and block lymph vessels in the skin, which results in the classic symptoms.
- The condition is diagnosed by an excisional biopsy to confirm the presence of ducted cancer cells in the area lymph vessels.
- Inflammatory breast cancer typically is diagnosed as stage II, which means the cancer has spread to local lymph nodes. However, one third of patients are diagnosed with stage IV carcinoma, in which metastasis already has occurred.

**Positional Disorders of the Pelvic Region**

The correct anatomic position for the uterus is tipped slightly anteriorly (anteverted) and bent over the bladder, with the cervix down and back. However, the uterus may be positioned in various angles because of a congenital anomaly, aging, or the effects of childbirth. With the aging process and/or multiple pregnancies, the muscles and ligaments that support the uterus, bladder, and rectum can stretch or weaken. This weakening of the supportive structures of the pelvic floor can result in multiple structural disorders.

A cystocele is a protrusion of the bladder into the anterior wall of the vagina. The bladder becomes angled, and urinary retention is common, along with frequent cystitis. The diagnosis can be made by having the patient bear down as the vaginal opening is examined; this allows the physician to feel the bladder protrusion. A cystocele can result from injury during childbirth, obesity, heavy lifting, chronic coughing, and poor musculature that comes with aging (Figure 41-11).

A rectocele is a protrusion of the rectum into the posterior wall of the vagina. The patient complains of difficulty with bowel movements and pressure in the pelvic region. The diagnosis can be made by having the patient bear down as the vaginal opening is examined so that the physician can palpate the posterior wall. Rectoceles are most often seen in postmenopausal women. A rectocele may result from pregnancy, difficult delivery, prolonged labor, obesity, chronic coughing, and lifting heavy objects.

The uterus also may lose supportive structure and drop into the vagina. This structural disorder is called uterine prolapse. The prolapse may involve only descent of the cervix into the vaginal area, or it may progress to protrusion of both the uterus and the cervix from the vaginal opening.

The first step in the treatment of pelvic positional disorders is to teach the patient how to perform pelvic floor muscle exercises, or Kegel exercises. The patient may be referred to a physical therapist who specializes in female disorders and uses biofeedback to help train the patient to perform the exercises accurately. If severe, all three of these structural abnormalities can be corrected with surgery.

**STEPS FOR PERFORMING KEGAL EXERCISES**

Kegel exercises help strengthen the pelvic floor muscles and are done to prevent or treat pelvic organ prolapse and incontinence. The steps are as follows:

1. Contract the muscles that make up the pelvic floor by visualizing that you are stopping the flow of urine midstream.
2. Hold the contraction to the count of three and then slowly relax for a count of three.
3. Repeat the exercise until you are performing 10 to 15 contractions in a set, with up to three sets throughout the day.

**PREGNANCY**

**Anatomy and Physiology**

Fertilization usually takes place in the distal third of the fallopian tube when one sperm cell penetrates and fertilizes an egg, which is then called a zygote. The zygote, which is made up of 23 chromosomes from the ovum and 23 chromosomes from the sperm, forms the first complete cell. This cell begins to grow and multiply immediately. The zygote travels down the fallopian tube and reaches the uterus in 5 to 6 days, implanting in the uterine
endometrium. Enzymes are secreted by the zygote to aid the implantation process.

After implantation, the placenta forms within the uterine wall. It is derived from maternal endometrial tissue and the chorion, the outermost membrane that surrounds the developing zygote. The amnion, the innermost layer of the membranes, holds the fetus suspended in an amniotic cavity surrounded by a fluid called the amniotic fluid. The amnion and fluid sometimes are called the "bag of water." in about 25% of pregnancies, breaking of the amniotic sac signals the onset of labor.

Within 2 weeks of fertilization, the zygote has undergone mitosis and is well established in the uterus. The next stage of development is the embryonic period, which includes the third to twelfth weeks of pregnancy (the first trimester). The embryonic period is a crucial time for the developing fetus, because it is when all tissues and organs develop. During the second and third trimesters, the embryo becomes a fetus; this is when cells develop and begin their primary functions, organs mature, and the fetus gains weight and grows in length.

Throughout the pregnancy, maternal and fetal blood never mix. Nutrients and oxygen diffuse from the mother's blood across the placental membrane into the blood vessels of the fetus's umbilical cord. Carbon dioxide and waste materials pass from the umbilical cord, through the placenta, and into the mother's circulatory system for excretion (Figure 41-12).

The placenta also acts as a gland by producing HCG and progesterone to maintain the pregnancy. Low levels of progesterone can lead to spontaneous abortion in pregnant women and menstrual irregularities in nonpregnant women. The average gestation is calculated at 9 calendar months, 10 lunar months, or 266 to 280 days. As previously mentioned, it is divided into three trimesters.

**First Trimester**

The first trimester is the period from the beginning of the LMP through the fourteenth week. It is a time of multiple physical and psychological changes for the woman and a crucial time for fetal organ development. It is essential that the pregnant woman understand the importance of a nutritious diet and of avoiding potential teratogens. The woman may complain of breast tenderness, constipation, headaches, urinary frequency, and nausea and vomiting. Rest, relaxation exercises, plenty of fluids, regular exercise, and small, frequent meals help relieve these discomforts. During this time, the obstetrician obtains a complete health history of the patient, including family, medical, menstrual, and obstetric histories. The obstetric history includes the number of times the patient has been pregnant (gravida) and the number of times she has given birth to a live infant (para).

**Second Trimester**

The second trimester extends from the fifteenth through the twenty-eighth week after the LMP. The uterus has enlarged to above the umbilicus, and the patient feels the first fetal movements, called quickening. In addition to the basic health history and physical examination, assessment is performed by abdominal palpation and fetal heart monitoring. The height of the fundus may be measured in centimeters from the symphysis pubis to the fundus. At each office visit, a urine sample is screened with a dipstick to detect protein or glucose, and the woman's blood pressure is monitored for signs of hypertension. The mother may complain of backache, dizziness, leukorrhea, and leg cramps from the increasing size of the uterus.

**Third Trimester**

The third trimester begins at the twenty-eighth week and lasts until delivery. This period is marked by rapid fetal growth, with the baby gaining close to 1 pound per week. The patient continues to be closely monitored. Childbirth preparation classes usually begin during this time. The patient experiences noticeable breast enlargement and may have an occasional discharge from the nipples of the clear, sticky fluid colostrum. The pregnant woman may complain of uterine cramping (Braxton-Hicks contractions), heartburn, edema, and frequent urination. Lightening, the dropping of the fetus into the pelvis, may occur a few weeks before birth, especially in primigravids (women in their first pregnancy).
Parturition

Labor is the physiologic process by which the uterus expels the fetus and the placenta (Figure 41-13). To be born vaginally, the baby must drop down into the pelvic floor, and the cervix must efface (thin out) and dilate (open up). Effacement is the thinning of the cervix from its prelabor length of 1 to 1½ inches to a completely thin tissue (Figure 41-13, A). This occurs when uterine contractions pull cervical tissue upward as labor progresses so that the bottom uterine segment (the cervix) becomes thinner and the top uterine segment (the fundus) becomes thicker. Effacement is measured as a percentage; the cervix is said to be 0% to 100% effaced. Dilation (sometimes called dilatation) is the opening of the cervix, which allows the infant to pass out of the uterus and into the vaginal birth canal. Dilation is measured in centimeters, which are estimated during vaginal examinations by manual palpation. Labor is divided into three stages:

- **Stage 1**—from the onset of labor through complete dilation and effacement of the cervix (Figure 41-13, B). During this time, uterine contractions become longer, stronger, and closer together until complete dilation and effacement occur and pushing begins. Stage 1 is divided into early active (up to 3 cm dilation and 80% to 100% effaced), active (4 to 7 cm dilation and completion of effacement), and transition (8 to 10 cm dilation). The average length of time for primigravidas in stage 1 is 9 to 11 hours.
Stage II—from complete dilation and effacement of the cervix through the birth of the fetus (Figure 41-13, C). This is the pushing stage, which lasts approximately 1 hour for primigravidas.

Stage III—from the birth of the fetus through expulsion of the placenta (Figure 41-13, D). This occurs approximately 20 minutes after the birth of the baby.

Pregnancy Complications

Infertility andAbortions

Fertility problems in women can occur for many different reasons, including a history of STDs that have caused scarring or adhesions of the fallopian tubes, failure to ovulate or irregular ovulation, congenital anomalies of the reproductive organs, endometriosis, medications that reduce fertility, and advancing age.

Problems in becoming pregnant can occur at several points in time, the first being abnormal fertilization. Some couples are unable to have a child because of the inability of the sperm and ovum to unite. Ovarian factors are not totally understood; however, it is known that as women age, the ovum become less viable. If the couple is able to fertilize an egg, another problem that can occur is improper implantation.

An ectopic pregnancy is one that occurs outside the uterus. Although an ectopic pregnancy can develop on or near the ovary or in the abdominal cavity, most occur in the fallopian tube. As the zygote develops, the cells that form the placenta begin to erode the muscle layer of the tube, bleeding and destruction of the muscular layer occur, and the tube ruptures. Rupture of the fallopian tube containing an ectopic pregnancy is a serious event that requires immediate surgical intervention to prevent fatal hemorrhage.

Once a woman becomes pregnant, problems can occur with carrying the infant to term. Interruption of a pregnancy before the term of fetal viability is called an abortion, which is identified in lay terms as a miscarriage. There are several different categories of naturally occurring abortions, including the following:
- Spontaneous—Abortions that do not have an identifiable cause.
- Complete—Complete expulsion of both fetus and placenta without any medical intervention.
- Incomplete—Expulsion of only parts of the fetus and placenta. A D&C must be done to remove the remaining pieces or the mother will continue to bleed.
- Missed—The fetus dies in utero and must be removed surgically.
- Threatened—Cervical bleeding occurs, but dilation does not, and the pregnancy continues uninterrupted.

It is estimated that 1 in 3 pregnancies terminates by a naturally occurring abortion, and in most cases the causes are not clear. Chromosomal anomalies frequently are detected in an aborted fetus or placenta and may be the primary reason for the abortion. Spontaneous abortion is the loss of a pregnancy before the twentieth week of fetal development. Common causes are defective development of the embryo, abnormalities of the placenta, endocrine disorders, malnutrition, infection, drug reaction, blood group incompatibilities, severe trauma, and shock. Symptoms include vaginal bleeding of varying degrees of severity and lower abdominal cramping that progresses to cervical dilation with rupture of membranes and complete expulsion of the products of conception. Induced abortions are the evacuation of the uterus at the request of the mother.

Placental Abnormalities

Pregnancy complications can occur because of the site of placental implantation. In placenta previa, the placenta implants in the lower uterine segment. If the condition is diagnosed early in the pregnancy from routine sonograms, the placenta may migrate with uterine wall enlargement. However, if the previa persists throughout the pregnancy and the placenta is implanted on or near the cervix when the mother goes into labor, dilation and effacement of the cervix can cause the placenta to tear loose (Figure 41-14). Complete dilation and effacement cannot progress without serious oxygen deprivation in the fetus and hemorrhaging in the mother. The signs of placenta previa are painless, bright red vaginal bleeding during or near the last trimester. The diagnosis is confirmed with a sonogram. A cesarean section is done as close to term as possible to prevent complications in both the mother and fetus.

Another placental problem, abruptio placenta, occurs when the placenta detaches from the uterine wall. The pregnant woman reports an acute onset of severe abdominal pain; firmness on palpation and hemorrhaging from the vagina also are factors. She also shows signs of shock, including tachycardia, a thready pulse, hypotension, and clammy, cool skin. The fetus shows signs of distress from lack of oxygen, including a decreased fetal heart rate and lack of movement. This is a true obstetric emergency and requires immediate cesarean delivery to save the infant and mother.

Maternal Disorders

Gestational Diabetes. Any degree of impaired glucose tolerance during pregnancy is diagnosed as gestational diabetes
mellitus (GDM). Women at greatest risk are over age 30; have a family history of diabetes mellitus; had a body mass index (BMI) greater than 25 before pregnancy; and are members of certain racial groups, including African-Americans, Hispanics, and Native Americans.

Currently, the American College of Obstetricians and Gynecologists (ACOG) recommends that all pregnant patients be screened for GDM at 24 to 28 weeks’ gestation using a 50-g, 1-hour glucose challenge test. The patient is given a concentrated drink equivalent to 50 g of glucose, and blood is drawn 1 hour afterward to measure blood glucose levels. A level greater than 140 mg/dL is indicative of GDM, but these patients are retested with a 3-hour glucose challenge. Blood is checked every hour for 3 hours after the patient drinks a concentrated glucose solution, and elevations in two of these blood draws is considered positive for GDM.

It is very important that women diagnosed with GDM carefully monitor their blood glucose levels regularly using a glucometer. This requires the patient to place a drop of blood on a machine that analyzes it and reports the current blood glucose level. Patients may be able to achieve normal glucose levels with diet therapy and exercise, although some patients require medication. Most women with GDM are prescribed insulin to manage elevated glucose levels; however, the oral antihyperglycemic glyburide (Micronase) also may be effective. The mother’s problem with glucose metabolism typically goes away after the birth of the infant, but these women are at greater risk of developing diabetes mellitus type 2 later in life. Patient education on healthy lifestyles, including the importance of a nutritious diet, weight management, and exercise, is needed to help prevent adult-onset diabetes mellitus type 2.

The medical assistant’s responsibilities include performing blood tests as ordered, routine urinary dipstick tests at each visit, and referral to a dietitian for help with diet therapy management.

Hypertension. Most women who develop hypertension during pregnancy had a normal blood pressure before becoming pregnant and also during early pregnancy but develop hypertension in the second half of the pregnancy. Gestational hypertension (pregnancy-induced hypertension) can be mild to severe and occurs in approximately 10% to 15% of pregnancies.

If hypertension is accompanied by proteinuria after 20 weeks of pregnancy, the patient is diagnosed with pre-eclampsia or toxemia, which occurs in approximately 2% to 3% of pregnancies. Pre-eclampsia usually shows up unexpectedly during a routine prenatal visit. The patient has an elevated blood pressure with protein or albumin in the urine and may also have uric acid, altered liver function, and a reduced platelet count. The birth of the baby cures pre-eclampsia, with the blood pressure returning to normal within a few days of delivery. However, if indicators of pre-eclampsia occur early in the pregnancy, the physician attempts to balance the need to prevent premature birth of the infant with what is best for the mother. The baby is monitored with routine nonstress tests (NSTs), sonograms, and maternal reports of fetal movement. If pre-eclampsia persists, the patient is at risk of severe headaches, vision disturbances, oliguria, and convulsions either before or during labor, and an emergency cesarean section may be required to prevent serious maternal complications.

The medical assistant is responsible for monitoring the pregnant woman’s vital signs at each visit, including any report of a sudden weight gain that may indicate edema, and for performing routine urine dipstick tests. Complete and accurate documentation of findings help alert the physician to possible problems with hypertension.

MENOPAUSE

Menopause is the permanent ending of menstruation as a result of cessation of ovarian function. It usually occurs between 45 and 55 years of age but can occur as early as the 30s and as late as the 60s. Menses may stop suddenly, flow may decrease over time, or the time between menses may lengthen until complete cessation occurs. Menopause can be diagnosed only retrospectively. Only after 12 months of amenorrhea is a woman said to be in menopause, and the years after this are called postmenopause.

Perimenopause begins when hormone-related changes start to appear, and it lasts until the final menses; this can be as long as 10 years before menopause. During this time, women are still ovulating, but the uneven rise and fall of estrogen and progesterone may cause symptoms. Some women experience few or no symptoms, whereas others have hot flashes, concentration problems, mood swings, irritability, migraines, vaginal dryness, urinary incontinence, dry skin, and sleep disorders. Treatment focuses on relieving these signs and symptoms. The physician may prescribe low-dose oral contraceptives (Alesse) to balance estrogen and progesterone levels or short-term hormone replacement therapy (HRT) (e.g., Premarin or Prempro) to treat symptoms. The physician also may recommend that the patient consume soy products or take soy supplements for a plant source of estrogen. Vitamin E may help alleviate hot flashes, and vitamin B6 helps create natural serotonin, a neurotransmitter that affects mood. Other methods that help alleviate symptoms include avoiding caffeine and spicy foods to reduce hot flashes, relaxation techniques to aid with sleep disorders, a low-fat diet high in calcium, and performing regular weight-bearing exercise to help prevent osteoporosis and heart disease.

Medical treatment of menopause focuses on managing uncomfortable symptoms and preventing conditions associated with a drop in blood levels of estrogen, such as osteoporosis and coronary artery disease. Physicians traditionally treated perimenopause and menopause with long-term HRT for most women; however, studies indicate that although HRT does protect the menopausal woman from osteoporosis, hip fractures, and colon cancer, at the same time it increases the risk of heart attacks, strokes, breast cancer, and blood clots. It is now recommended that physicians prescribe HRT to meet individual patient needs short term (i.e., no longer than 5 years) rather than as a routine treatment for all menopausal women. Studies show that the risk for heart disease and other complications increases after 5 years of HRT. The medical assistant must be aware of the physician’s recommendations regarding HRT.

Other medications that may be prescribed include antidepressants, such as venlafaxine (Effexor) or fluoxetine (Prozac,
Sarafem), to prevent hot flashes. Gabapentin (Neurontin) and clonidine (Catapres) also may be prescribed to reduce the frequency of hot flashes. Since the development of osteoporosis is a concern in perimenopausal and postmenopausal women, the physician may prescribe alendronate (Fosamax), risedronate (Actonel), or ibandronate (Boniva) to reduce bone loss and the risk of fractures. Another drug that may be used to improve postmenopausal bone density is raloxifene (Evista); however, hot flashes are a common side effect of this medication. Vaginal dryness can be treated with estrogen administered locally by vaginal tablet, ring, or cream, or the patient can use K-Y Jelly or some other vaginal moisturizer as a lubricant.

**CRITICAL THINKING APPLICATION 41-4**

Rose Conrad, a 53-year-old patient of Dr. Beck, calls because she read recently that the hormone replacement therapy she has been taking for 3 years may be dangerous. Dr. Beck has reviewed her case and agrees that if she is concerned, she can stop taking the medication; however, she recommends that Mrs. Conrad try some alternative therapies. What suggestions might Dr. Beck make for nonpharmaceutical treatment of perimenopausal symptoms?

**THE MEDICAL ASSISTANT’S ROLE IN GYNECOLOGIC AND OBSTETRIC PROCEDURES**

As the female progresses from menarche through the childbearing years and then into menopause, her medical concerns change, and the focal point of the physical examination may change as well. The overall goal of the medical office is to keep her physically and mentally healthy. Being able to assist the physician in identifying possible problems before the problem becomes a threat to the patient’s health is a major priority of care. This is best accomplished by listening to the patient. Remember, to the patient, there is no such thing as a routine examination.

### Examination Preparation

An annual or semiannual examination of the female reproductive system is done to ensure normality of the reproductive organs or to diagnose and treat abnormalities of these organs. Before the physician begins the examination, the medical assistant should obtain a complete gynecologic history. After documenting the patient’s history and chief complaint, the medical assistant should prepare the room and the patient for the examination (see Procedure 41-1).

The following should be included in the gynecologic history:

- Date of LMP
- Lifestyle factors, including diet, exercise, smoking, alcohol use, and so on

The physical examination during a first prenatal visit includes an overall assessment of the woman’s health status, including vital signs, weight, and urinalysis. The medical assistant must prepare the patient and also the supplies and equipment necessary to obtain pelvic measurements, perform serologic tests, and prepare for laboratory tests (Procedure 41-4). The physician assesses heart, lung, and thyroid function and performs a physical examination to rule out any other abnormality. Next, the practitioner performs an obstetric examination that includes palpation of the mother’s abdomen, measurement of the height of the uterus, and an internal or pelvic examination.

A series of blood tests also is performed during the initial prenatal visit. In follow-up prenatal visits, the medical assistant should collect a urine specimen for urinalysis, weigh the patient, measure the blood pressure, and answer questions about diet and health habits. The mother should gain approximately 10 to 12 pounds in the first half of pregnancy and another 15 to 17 pounds during the second half. Experts believe that a healthy weight gain is somewhere between 25 and 35 pounds. The baby’s heart tones can be picked up through a specialized method, called Doppler ultrasound, somewhere between 9 and 12 weeks of pregnancy. Once recorded, the fetal heart rate is assessed at each subsequent visit.

Prenatal blood and laboratory tests include the following:

- Hematocrit and hemoglobin levels to check for anemia
- Blood type and Rh with antibody screening for possible Rh incompatibility
- Rubella titer to determine whether the mother is immune to German measles; rubella infection during pregnancy can cause multiple birth defects, including deafness, vision disorders, and mental retardation
- Syphilis screening; if the result is positive, antibiotic treatment is initiated to protect the fetus from congenital syphilis
- Hepatitis B screening, because this virus can be passed to the fetus in utero
- HIV screening is suggested; if the result is positive, treatment of the mother greatly reduces the risk of transmission to the fetus
- Pap smear to check for abnormal cervical cells
- Gonorrhea and chlamydia cultures to prevent infection of the baby at birth
- Urinalysis to detect protein, white blood cells, or glucose
- Group B streptococcus culture of the lower vagina for strep B infection, performed between the thirty-second and thirty-sixth weeks; if the result is positive, the mother is treated with antibiotics to prevent fetal exposure during vaginal birth
- NST to evaluate the fetal heart rate; the mother is attached to a fetal monitor, with the goal of seeing accelerations in the fetal heart rate with movement
- Stress test or oxytocin challenge test (OCT) if the NST is abnormal; a small amount of oxytocin (which causes the uterus to contract) is administered intravenously while the
Prepare a Patient for Procedures and/or Treatments: Assist with a Prenatal Examination

**GOAL:** To promote a healthy pregnancy for the mother and fetus and to screen for potential problems.

**EQUIPMENT and SUPPLIES**
- Scale with height measure
- Sphygmomanometer
- Stethoscope
- Tape measure
- Doppler fetoscope
- Ultrasound gel
- Urine specimen container
- Disposable examination gloves, vaginal speculum, and lubricant if vaginal examination is to be performed
- STD test setups
- Laboratory acquisition slips
- Biohazard waste container
- Biohazard bags for specimen transport
- Patient education materials
- Patient’s chart

**PROCEDURAL STEPS**

1. Sanitize your hands, assemble equipment, and identify the patient.
2. Weigh the patient and record the weight. **PURPOSE:** An expectant mother’s weight reflects both maternal nutritional status and fetal growth; an unusual weight gain may indicate fluid retention.
3. Collect a urine specimen and perform a urinalysis to detect protein, glucose, or ketones in the urine; record the urinalysis results. **PURPOSE:** Protein, glucose, or ketones in the urine may indicate problems with the pregnancy.
4. Measure and record the mother’s blood pressure.
5. Instruct the patient to disrobe from the waist down and to put on a gown open to the front so that the uterine fundal height can be measured.

**Assisting with the Examination**

The female reproductive system examination is probably the most emotionally charged medical experience the average woman undergoes. Even women with relatively sophisticated attitudes toward their bodies and sexuality may be embarrassed by the casual, impersonal approach of the medical team during this procedure. Many women fear the physician’s findings. Anxieties and fears are best handled through explanations and by showing a genuine interest in the patient’s concerns.

If the physician is male, a female medical assistant should be present during the examination. The only exception to this rule is when the patient requests that the medical assistant leave the room; if this is done, the request is noted on the patient’s medical record. A male medical assistant is not usually in the room during the examination except when he must assist with a procedure. The physician makes the decision regarding the male assistant’s
role in the female reproductive system examination. The medical assistant is responsible for supporting the patient and assisting the physician during the procedure. The procedure should be fully explained to the patient to prevent unnecessary embarrassment and discomfort. During the explanation, the assistant has the opportunity to conduct patient teaching.

In preparation for the examination, the patient should empty her bladder, completely disrobe, and put on an examination gown that opens in the front. The patient should have been advised at the time the appointment was made not to douche or have sexual intercourse for 24 hours before the examination so that vaginal discharges can be evaluated properly and to ensure accurate results of cytologic studies.

Breast Examination

Begin the examination by assisting the patient into a sitting position and by adjusting the gown so that the breast tissue can be easily exposed. The physician will instruct the patient to place her arms above her head, and the assistant should be present to assist the patient if she has difficulty following these instructions. The physician may prefer to examine the breasts with the patient in the supine position. When the patient is instructed to assume a supine position, help the patient, adjust the gown, and drape as needed for the physician and to protect the patient's privacy. A small pillow may be placed under the patient's head for comfort. When the examination is complete, the gown is readjusted to cover the breasts. The physician may choose to discuss breast self-examination with the patient at this time or may inform the patient that you will be explaining the technique at the end of the examination (see Procedure 41-3).

Abdominal Examination

After the breasts have been examined, cover them and position the drape to allow the physician to palpate the abdomen; this is done to confirm normal symmetry and detect any masses. In the case of pregnancy, the level of the fundus is measured to determine fetal growth. For this examination, the patient's arms should be placed at her sides to achieve better relaxation of the abdominal muscles.

Pelvic Examination

The medical assistant should remain in the examination room to provide reassurance to the patient and as legal protection for a male physician while the patient's vaginal and perineal areas are examined. Furthermore, the lithotomy position is awkward to assume without assistance and may be embarrassing to the patient. Never place the patient in the lithotomy position until the physician is ready to begin the examination. When you assist the patient into the lithotomy position, always keep her totally covered.

You should stand at the patient's side so that you can observe the patient, yet still be able to move quickly if needed by the physician. First, the physician inspects the external genitalia and palpates the perineal body. The patient may be asked to bear down to show any muscular weaknesses that may be the result of lacerations of the perineal body during childbirth. A third-degree laceration may have involved the rectal sphincter and may cause rectal incontinence.

Next, the vaginal speculum, without lubrication, is inserted for examination of the cervix and the vaginal canal and for obtaining the Pap specimen. The speculum should be prewarmed with warm water. Have the patient take some deep breaths to help relax the abdominal muscles. The normal cervix points posteriorly and has smooth, pink, squamous epithelium. Abnormalities most frequently seen are ulcerations (erosions), Bartholin cysts, and cervical polyps. Because erosions cannot be palpated, inspection is the only method of detecting them. Healed lacerations from childbirth are common in a multiparous patient. Pregnancy increases the size of the cervix, and hormone deficiency causes it to atrophy. The vaginal wall is reddish pink and has a corrugated appearance from the overlapping tissue (rugae) lining. Vaginal infections change the appearance of the vaginal mucosa. After the Pap specimen has been obtained, you may be responsible for labeling the specimen and preparing it for transport to the cytology laboratory. Be sure to follow laboratory instructions during the preparation to avoid having to repeat the examination.

After removal of the vaginal speculum, the physician does a bimanual examination; that is, two gloved fingers are lubricated with a water-soluble jelly (lubricant) and inserted into the vaginal canal, and the other hand palpates the abdomen over the pelvic organs and the mons pubis (Figure 41-15). The uterus is examined for shape, size, and consistency, and its position is noted. A normal uterus is freely movable with limited discomfort. A laterally displaced uterus usually is the result of pelvic adhesions or displacement caused by a pelvic tumor. The fallopian tubes and ovaries are evaluated. Normal tubes and ovaries are difficult to palpate. The physician completes the examination by performing a rectovaginal abdominal examination. A stool test for occult blood may be done at this time.
Postexamination Duties
When the examination is finished, help the patient into a sitting position and into the dressing room if needed. Following the Standard Precautions established by the Occupational Safety and Health Administration (OSHA), remove the examination equipment and supplies while the patient is dressing so that when the physician returns to talk to the patient, the room is neat and clean. Once the patient has left, the room should be cleaned and restocked as necessary and made ready for the next patient.

SAFETY ALERT
Instruments that come in contact with a patient, including vaginal speculums, should be disinfected and sterilized before they are used for another patient. If the instrument does not penetrate tissue, it can be stored under clean or medically aseptic conditions. Some physicians prefer to use disposable speculums for routine pelvic examinations. Instruments that penetrate tissue (e.g., uterine biopsy punch, uterine tenaculum, and cervical dilators and sounds) must be sterilized and stored under sterile conditions.

DIAGNOSTIC TESTING
Sonography
Sonography is a technique in which high-frequency sound waves are used to produce images of the body’s soft tissues. It can be used to distinguish between cysts and tumors, and it is used during pregnancy to determine the number of fetuses, their age and gender; fetal abnormalities; and the position of the placenta. The skin over the area to be studied is coated with conductive gel or lotion, and the transducer is pressed lightly against the area. Sound waves emitted by the transducer bounce off the structure being studied and are converted into electrical impulses that create a picture for analysis. The mother must drink three to four glasses of water 1 hour before the procedure and not void so that the full bladder can be used as a reference point.

Sonograph technology is divided into two methods. The grayscale image converts sound wave echoes into graphs or dots that form pictures of organs and blood vessels (Figure 41-16). The Doppler method converts the ultrasound into audible sounds that are heard as pulsations and is used in the obstetrician’s office to monitor the heartbeat of the fetus. Color-coded Doppler signals, three-dimensional imaging, and contrast medium enhancement of ultrasound images provide more accurate images and data on organ structure and function.

FETAL DIAGNOSTIC TESTS
- Chorionic villus sampling: Chorionic villi are tiny placental projections, the cells of which have the same genetic material that is found in fetal cells. Cellular screening at 8 to 12 weeks of gestation provides early detection of genetic or chromosomal disorders. Potential complications include accidental abortion, infection, bleeding, and fetal limb deformities. Results are available within several days.
- Amniocentesis: This procedure involves needle aspiration of approximately 2 tablespoons of amniotic fluid after week 14 of pregnancy to detect genetic and chromosomal abnormalities or inherited metabolic disorders (Figure 41-17). Potential complications include miscarriage, fetal injury, infection, premature labor, and maternal hemorrhage. Results usually are not available for 2 weeks.
- Alpha-fetoprotein (AFP): Maternal blood sample is analyzed between 16 and 18 weeks; elevated level indicates a neural tube defect such as a myelomeningocele. Levels also increase with multiple pregnancies (twins) or fetal congenital anomalies. The test is controversial, because it has a high rate of false-positive results.
- Percutaneous umbilical cord sampling (PUBS): Under ultrasound guidance, a sample of fetal blood is removed from the umbilical cord to detect blood diseases not diagnosed with amniocentesis.

Mammography
Mammography is a specialized x-ray technique that provides images of breast tissue and is performed to identify abnormal masses that would go undetected in a breast palpation examination (Figure 41-18). Special x-ray equipment is used that compresses the breast firmly during each exposure. Compression is essential to provide the high degree of detail needed to visualize the significant but often subtle signs of a tumor. This process is not usually painful, but some patients, especially those with fibrocystic breast disease, may find it uncomfortable. If pain persists after the examination, aspirin or ibuprofen is recommended for relief. Women with fibrocystic breast disease may find it helpful to avoid caffeine 24 to 72 hours before the procedure.

Patients with breast implants should follow the same guidelines for mammography; however, implants may make diagnosing breast cancer more difficult, because they tend to obscure the breast image. It is recommended that women with implants have mammograms done at a facility where the radiologist is experienced in interpreting these particular studies. In addition, women
Pregnancy Testing

Pregnancy tests are designed to detect hCG, which is secreted after the ovum has been fertilized. It appears in the blood and urine of pregnant women as early as 10 days after conception. Once pregnancy has been confirmed, the patient undergoes a complete medical and obstetric examination, which includes a number of laboratory tests. The estimated day of delivery (EDD) is calculated at the first office visit (the EDD is frequently called the expected due date). The EDD typically is determined with a gestational wheel (Figure 41-19). However, most obstetricians rely on fetal sonograms to determine the expected due date.

Closing Comments

Patient Education

The medical assistant can assist the physician by providing the patient with information that promotes sexual health and prevents gynecologic and obstetric disorders throughout the patient’s life. A woman planning a pregnancy or who has just found out she is pregnant may benefit from some simple guidelines for healthy living.

- Nutrition: Before pregnancy, emphasize the need for folic acid to prevent neural tube defects. The woman can take a supplement or eat dark green, leafy vegetables. Many women have iron-deficiency anemia, and eating foods high in iron (red meat, spinach, or enriched cereal) is helpful. A pregnant woman must meet the calcium needs of both herself and her fetus; therefore she needs about 1,000 mg of calcium a day. Most pregnant women should consume about 2,500 calories a day. Women of average weight should gain 25 to 35 pounds, but underweight women should gain 28 to 40 pounds for a healthy infant.
Alcohol: Alcohol passes through the placenta to the fetus and can cause serious problems. No one knows how much is safe, so it is a good idea for pregnant women to avoid alcohol completely.

Smoking: Smoking can cause premature birth and low-birth-weight full-term infants. Smoking is linked to an increased risk of otitis media, heart problems, and upper respiratory infections in infants, as well as sudden infant death syndrome (SIDS). Pregnant women should not smoke and should not be exposed to secondhand smoke.

Medicine: All chemicals pass through the placenta; therefore, a pregnant woman should never take any medicine (even over-the-counter drugs) without the knowledge and approval of her obstetrician. If the medical assistant is managing telephone screening, having a list of physician-approved medications next to the phone helps in answering patients’ questions.

STD screening: STD screening should be done before a woman becomes pregnant. Many STDs are asymptomatic in women but treatable. Infants are at risk for serious health problems if exposed to certain STDs in utero or during the birth process.

### Advantages of Breast-Feeding

**For the Infant**
- Completely digestible nutrition source for the infant
- Protects against gastrointestinal infection
- Protects against food allergies
- Provides newborn with mother’s antibodies to infectious disease
- Associated with higher infant IQ
- Promotes muscular eye and facial development
- Promotes maternal-infant bonding

**For the Mother**
- Simple, safe, and economical
- Promotes uterine involution, which reduces postpartum bleeding
- Reduces the incidence of breast cancer
- Promotes maternal-infant bonding

Pregnant women usually are searching for information about pregnancy and wellness both during and after the birth. Use the waiting room as an education center with videos, books, and pamphlets on health issues and parenting. Keeping an up-to-date list of community education and support programs also is helpful. The obstetric patient who is interested in breast-feeding may need education and support to be successful. The American College of Pediatricians recommends breast milk as the optimum food for newborns. Referral to a breast-feeding support group or lactation consultant can help a new mother solve her breast-feeding problems and find answers to her questions.

### Legal and Ethical Issues

Many ethical and legal issues arise as a result of missed communication. Listen to what every patient reports and write down any information that will assist the physician in treating the patient. The issue may appear to be an insignificant problem, but to the patient, it may be a major concern. Let the physician be the judge of whether the problem is relevant. As the patient’s advocate and the physician’s assistant, the medical assistant plays an important role in establishing good communication as a vital link in patient care.

Confidentiality is crucial in dealing with obstetric and gynecologic disorders. Only healthcare professionals directly involved in the patient’s care should know the purpose of the patient’s visit, diagnosis, or treatment. Maintaining patient confidentiality is not just an ethical responsibility; in the case of HIV status, it is a legal requirement.

The medical assistant may be in the position to recognize and provide assistance to women who are being mistreated. Battered women seldom come forward and tell healthcare workers they are being abused. If the patient reports such problems to the medical assistant or if an abusive situation is suspected, the medical assistant should not hesitate to report this information to the physician. The American Medical Association (AMA) has developed guidelines to help caregivers recognize victims of abuse.

- **Know what to look for:** Suspicious findings include multiple injuries at different sites, especially areas that normally are covered by clothing. Also, the patient may be frightened, anxious, and passive and may have a history of “accidents.”
- **Know what to ask when obtaining a patient history:** Even patients who show no signs of abuse should be asked whether they have ever been in an abusive relationship; if verbal arguments ever become physical; if their partner acts differently when drinking or using drugs; and if their partner is overprotective and jealous.
- **Know what to say and do:** A battered woman suffers both physical and emotional abuse. She may begin to believe that she deserves to be mistreated, and she needs unconditional and nonjudgmental emotional support from the healthcare worker. She needs to be treated with warmth and respect and encouraged to develop a plan of action to deal with the next violent episode. Suggestions include having immediate access to important documents, keys, money, transportation, the address of a safe house, and phone numbers for the police and local domestic violence hotlines if available. The National Domestic Violence Hotline can be reached at 1-800-799-SAFE (7233). It provides 24-hour help for victims seeking local shelters.
Having worked with obstetric and gynecologic patients, Betsy has learned that a wide range of disorders and conditions can affect a woman's health and pregnancy. She also has learned how to assist with a number of different diagnostic procedures performed in the ambulatory care setting. An integral role of the medical assistant in the OB/GYN practice is reinforcing the physician's patient education efforts. Betsy enjoys this part of the practice but realizes that it involves extensive reading and discussion with Dr. Beck to determine her preferred method of practice. Betsy stays up-to-date on current contraceptive practices by attending local AAMA workshops and regional conferences. She has networked with other CAs to develop a comprehensive community resource guide for obstetric and gynecologic patients in the practice and has created an educational center in the patient waiting room. Betsy recognizes that she must continue to learn about new practices and recent research to help provide the best possible care for the women in Dr. Beck's practice.

1. Define, spell, and pronounce, the terms listed in the vocabulary. Spelling and pronouncing medical terms correctly bolster the medical assistant's credibility. Knowing the definitions of these terms promotes confidence in communication with patients and co-workers.

2. Apply critical thinking skills in performing the patient assessment and patient care. Completing the Critical Thinking Application exercises throughout the chapter can help the student medical assistant become more adept at critical analysis of real-life situations.

3. Identify the major organs of the female reproductive system and explain the primary function of each. The female reproductive system is made up of the external genitalia and the internal organs, including the vagina, the cervix, which must dilate and efface for vaginal birth of a child; the uterus; the fallopian tubes; and the ovaries, which mature and produce ova.

4. Trace the ovum through the three phases of menstruation. The follicular phase matures a graafian follicle so that an ovum can be released at the same time the endometrial wall is thickening; the luteal phase causes extensive growth of the endometrium; if conception does not occur, the menstrual cycle begins with the breakdown of the endometrium and menstrual flow.

5. Compare current contraceptive methods. Barrier contraceptive methods include the use of condoms, a diaphragm, or a cervical cap; all of these are relatively inexpensive and reversible, but they must be used with each instance of intercourse. Hormonal contraceptives include Depo-Provera injections, oral and patch contraceptives, and the vaginal ring, which are very effective but have side effects and contraindications. Contraceptive methods are summarized in Table 41-1.

6. Summarize menstrual disorders and conditions. Menstrual disorders include amenorrhea and oligomenorrhea; abnormal menstrual bleeding includes menorrhagia and metrorrhagia; endometriosis is characterized by the presence of functional endometrial tissue outside the uterus.

7. Distinguish among different types of gynecologic infections. Gynecologic infections include candidiasis; BV; cervicitis; and PID, which is any acute or chronic infection of the reproductive system that ascends from the vagina (vaginitis), cervix (cervicitis), uterus (endometritis), fallopian tubes (salpingitis), or ovaries (oophoritis). STDs are summarized in Table 41-2.

8. Differentiate between benign and malignant neoplasms of the female reproductive system. Benign tumors of the reproductive system include uterine fibroids; ovarian cysts; the hormonal disease of polycystic ovary syndrome; and fibrocystic breast disease, the presence of multiple palpable nodules in the breasts. Malignant tumors include cervical, endometrial, and ovarian cancers that vary in their diagnostic features and symptoms. Breast cancer can have multiple origins. Treatment of all forms of reproductive cancer depends on the staging and grading of the tumors.

9. Prepare for and assist with the female examination, including obtaining a Papianicolau (Pap) smear. Procedure 41-1 explains the steps for assisting with the examination of a female patient.


12. Compare the positional disorders of the pelvic region. Positional disorders of the pelvic region include cystocele or rectocele, which cause prolusion of the bladder or the rectum into the vaginal wall, and uterine prolapse, in which the cervix or uterus drops into the vaginal area. Kegel exercises van help improve these problems, but if they are severe, all three structural abnormalities can be corrected with surgery.

13. Summarize the process of pregnancy and parturition. Pregnancy occurs when the ovum and sperm meet in the fallopian tube and a zygote is formed. The zygote implants in the uterine wall, and the placenta begins to form, which provides hormonal support for the pregnancy. The fetus is surrounded by an amniotic sac and floats in amniotic fluid. Oxygen and nutrients for the fetus pass through the placenta to the umbilical cord. The embryonic period ends at 12 weeks, and by then all tissues and organs have developed. During the remainder of the pregnancy, the organs mature and begin to function, and the fetus grows. Pregnancy is divided into three trimesters. The first trimester is a crucial time for fetal organ development; the second trimester brings quickening and many physiologic changes in the mother; during the third
trimester, the fetal organ systems mature. The three stages of labor are
dilation and effacement of the cervix, birth, and expulsion of the
placenta.

14. Describe the common complications of pregnancy.
The complications of pregnancy include potential loss of the pregnancy
as a result of different types of abortions (miscarriages). Placental
abnormalities include placenta previa, in which the placenta covers the
cervical os, and abruptio placentae, in which the placenta breaks away
from the uterine wall. Both cause maternal hemorrhage, threaten the
fetal oxygen supply, and require a cesarean birth to protect the fetus
and mother. Maternal disorders include GDM, which requires dietary
changes and possible insulin therapy, and hypertension, which may
progress to toxemia, a life-threatening rise in blood pressure accompa-
nied by edema, uremia, and possibly seizure activity.

15. Specify the signs, symptoms, and treatments of conditions related
to menopause.
Menopause is the permanent ending of menstruation because of the
cessation of ovarian function. Perimenopause begins when hormone-
related changes start to appear and lasts until the final menses. Some
women experience few or no symptoms, whereas others have hot
flashes, concentration problems, mood swings, irritability, migraines,
vaginal dryness, urinary incontinence, dry skin, and sleep disorders. The
physician may prescribe low-dose oral contraceptives or HRT, weight-
bearing exercise, soy products or vitamin supplements, dietary changes,
and medication to manage hot flashes, mood swings, and vaginal
dryness and to prevent osteoporosis.

16. Outline the medical assistant's role in gynecologic and reproductive
examinations.
The medical assistant prepares the patient for the examination, equips
the room, makes sure supplies are available and properly prepared;
positions and dries the patient as needed, assists with the Pap smear
or any other procedures, and provides support and understanding for the
patient.

17. Demonstrate how to assist with a prenatal examination.
Procedure 41-4 explains how to assist with a prenatal examination.

18. Distinguish among diagnostic tests that may be done to evaluate
the female reproductive system.
Diagnostic tests for the female reproductive system include sonography
during pregnancy to determine the number of fetuses, fetal age and
gender, fetal abnormalities, the position of the placenta; chorionic villi
sampling, amniocentesis, or umbilical blood sampling to perform genetic
testing; AFP blood tests to diagnose neural tube defects; mammography,
which provides an x-ray image of the breast tissue to identify cancerous
tumors; colposcopy procedures that permit visualization of abnormal
cervical tissue for evaluation or biopsy; and a variety of tests done during
pregnancy.

CONNECTIONS

Study Guide Connection: Go to the Chapter 41 Study Guide. Read
and complete the activities.

Evolve Connection: Go to the Chapter 41 link at evolve.elsevier.
com/kinn to complete the Chapter Review and Chapter Quiz. Peruse other resources
listed for this chapter to increase your knowledge of Assisting in Obstetrics and
Gynecology.