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Psychiatry and Reproductive Medicine Reproductive events and processes have both physiological and psychological concomitants. Likewise, psychological states affect reproductive physiology and modulate reproductive events. This chapter examines these bidirectional relationships with the goal of introducing fundamental concepts related to the classic reproductive events, such as menarche, pregnancy, delivery, postpartum, and menopause. The fields of psychiatry and reproductive medicine continue to define the multiple mechanisms by which psyche and soma interact to determine a woman’s gynecological and psychological health. For instance, premenstrual dysphoric disorder—the impairing symptoms and severe mood, cognitive, and behavioral changes that occur in association with the menstrual cycle—exemplifies a somatopsychic disorder in which biological changes occurring in the soma trigger changes in psychological state. In contrast, functional forms of hypothalamic anovulation represent psychosomatic illness that originates in the brain but alters somatic functioning. REPRODUCTIVE PHYSIOLOGY The physiological processes associated with menarche, menstrual cycling, pregnancy, postpartum, and menopause occur within the context of a woman’s physiological and interpersonal life, interfacing with psychosocial functioning throughout adolescence, young adulthood, midlife, and late life. The fields of psychiatry and reproductive medicine are just beginning to elaborate the multiple mechanisms by which psyche and soma interact to determine a woman’s gynecological and psychological function. This chapter illustrates how reproductive processes interact with psychosocial events and aims ultimately to improve the approach to both gynecologic and psychiatric treatments. Menstrual Cycles Menstrual cyclicity results directly from ovarian cyclicity. Each ovarian cycle starts with the development of a group or cohort of follicles, one of which becomes dominant. The follicles are composed of an oocyte surrounded by granulosa cells, which, in turn, are surrounded by theca cells. As shown at the top of Figure 27-1, follicular development is initiated by the hypothalamic release of gonadotropin-releasing hormones (GnRH) at a pulse frequency of approximately one pulse every 90 minutes. GnRH stimulates the release of the pituitary gonadotropins, luteinizing hormone (LH), and follicle-stimulating hormone (FSH). In turn, LH stimulates ovarian theca cells to synthesize and secrete androgens;

FSH induces granulosa cell development, including the enzyme aromatase, which converts the thecally produced androgens to estrogens. In the presence of a constant GnRH pulse frequency of one pulse each 90 minutes, the secretion of LH and FSH in the follicular phase will be regulated primarily by estradiol feedback at the level of the pituitary. Rising estradiol concentrations suppress FSH, thereby limiting the number of follicles that become mature oocytes capable of ovulating. FIGURE 27-1Schematization of the human menstrual cycle. Es, estradiol; FSH, folliclestimulating hormone; GnRH, gonadotropin-releasing hormone; LH, luteinizing hormone; P, progesterone. As illustrated in the middle panel of Figure 27-1, when estradiol concentrations rise exponentially to exceed a critical threshold and remain elevated for at least 36 hours, which is the pattern one fully mature follicle produces, an LH surge is triggered and ovulation (release of the ovum from the follicle sac) ensues approximately 36 hours later. Thereafter, granulosa cells transform into progesterone-secreting luteal cells, and the ovulated follicle is then referred to as the corpus luteum, which secretes progesterone. Figure 27-1 displays the levels of LH, FSH, estradiol, and progesterone throughout the menstrual cycle and corresponding follicular events. The target tissues for ovarian steroids include the endometrium, whose developmental sequence is illustrated along the bottom panel, and the hypothalamic GnRH pulse generator, whose frequency, as indicated in the top right panel, is slowed dramatically by the combination of estrogen and progesterone secreted during the postovulatory or luteal phase of the menstrual cycle. This inhibition of GnRH is followed by decreased secretion of LH and FSH so that

new follicular development is prevented until the corpus luteum regresses. As progesterone concentrations decline, GnRH pulsatility increases, and gonadotropin, especially FSH, secretion rises. The phases of the menstrual cycle can be termed follicular and luteal in reference to ovarian events or proliferative and secretory in reference to endometrial events. PREGNANCY Biology of Pregnancy The first presumptive sign of pregnancy is the absence of menses for 1 week. Other presumptive signs are breast engorgement and tenderness, changes in breast size and shape, nausea with or without vomiting (morning sickness), frequent urination, and fatigue. A diagnosis can be made 10 to 15 days after fertilization by testing for human chorionic gonadotropin (hCG), which is produced by the placenta. The definitive diagnosis requires a doubling of hCG levels and the presence of fetal heart sounds. Transvaginal ultrasound scanning can reveal a pregnant uterus as early as 4 weeks after fertilization, by visualization of a gestational sac. Stages of Pregnancy Pregnancy is commonly divided into three trimesters, starting from the first day of the last menstrual cycle and ending with the delivery of a baby. During the first trimester, the woman must adapt to changes in her body, such as fatigue, nausea and vomiting, breast tenderness, and mood lability. The second trimester is often the most rewarding for women. A return of energy and the end of nausea and vomiting allow women to feel better and experience the excitement of starting to look pregnant. The third trimester is associated with physical discomfort for many women. All systems—cardiovascular, renal, pulmonary, gastrointestinal, and endocrine—have undergone profound changes that can produce a heart murmur, weight gain, exertional dyspnea, and heartburn. Some women require reassurance that those changes are not evidence of disease and that they will return to normal shortly after delivery—generally in 4 to 6 weeks. Psychology of Pregnancy Pregnant women undergo marked psychological changes. Their attitudes toward pregnancy reflect deeply felt beliefs about all aspects of reproduction, including whether the pregnancy was planned and whether the baby is wanted. The relationship with the infant’s father, the age of the mother, and her sense of identity also affect a woman’s reaction to prospective motherhood. Prospective fathers also face psychological challenges. Psychologically healthy

women often find pregnancy a means of self-realization. Many women report that being pregnant is a creative act gratifying a fundamental need. Other women use pregnancy to diminish self-doubts about femininity or to

reassure themselves that they can function as women in the most basic sense. Still others view pregnancy negatively; they may fear childbirth or feel inadequate about mothering. During early stages of their own development, women must undergo the experience of separating from their mothers and of establishing an independent identity; this experience later affects their own success at mothering. If a woman's mother was a poor role model, a woman's sense of maternal competence may be impaired, and she may lack confidence before and after her baby's birth. Women's unconscious fears and fantasies during early pregnancy often center on the idea of fusion with their own mothers. Psychological attachment to the fetus begins in utero and, by the beginning of the second trimester, most women have a mental picture of the infant. Even before being born, the fetus is viewed as a separate being, endowed with a prenatal personality. Many mothers talk to their unborn children. Recent evidence suggests that emotional talk with the fetus is related not only to early mother–infant bonding but also to the mother's efforts to have a healthy pregnancy, for example, by giving up cigarettes and caffeine. According to psychoanalytic theorists, the child-to-be is a blank screen on which a mother projects her hopes and fears. In rare instances, these projections account for postpartum pathological states, such as a mother's desire to harm her infant, whom she views as a hated part of herself. Normally, however, giving birth to a child fulfills a woman's need to create and nurture life. Fathers are also profoundly affected by pregnancy. Impending parenthood demands a synthesis of such developmental issues as gender role and identity, separation or individuation from a man's own father, sexuality, and, as Erik Erikson proposed, generativity. Pregnancy fantasies in men and wishes to give birth in boys reflect early identification with their mothers as well as the wish to be as powerful and creative as they perceive mothers to be. For some men, getting a woman pregnant is proof of their potency, a dynamic that plays a large part in adolescent fatherhood. Marriage and Pregnancy The prospective mother–wife and father–husband must redefine his or her roles as a couple and as an individual. They face readjustments in their relationships with friends and relatives and must deal with new responsibilities as caretakers of the newborn and each other. Both parents may experience anxiety about their adequacy as parents; one or both partners may be consciously or unconsciously ambivalent about the addition of the child to the family and about the effects on the dyadic (two-person) relationship. A husband may feel guilty about his wife's discomfort during pregnancy and parturition, and some men experience jealousy or envy of the experience of pregnancy. Accustomed to gratifying each other's dependency needs, the couple must attend to the unremitting needs of a new infant and a developing child. Although most couples respond positively to these demands, some do not. Under ideal conditions, the decision to become a parent and have a child should be agreed on by both partners, but sometimes parenthood is

rationalized as a way to achieve intimacy in a conflicted marriage or to avoid having to deal with other life circumstance problems. Attitudes Toward the Pregnant Woman. In general, others' attitudes toward a pregnant woman reflect a variety of factors: intelligence, temperament, cultural practices, and myths of the society and the subculture into which the person was born. Married men's responses to pregnancy are generally positive. For some men, however, reactions vary from a misplaced sense of pride that they are able to impregnate the woman to fear of increased responsibility and subsequent termination of the relationship. A woman's risk of abuse by her

husband or boyfriend increases during pregnancy, particularly during the first trimester. One study found that 6 percent of pregnant women are abused. Domestic abuse adds significantly to the cost of health care during pregnancy, and abused women are more likely than nonabused controls to have histories of miscarriage, abortion, and neonatal death. The reasons for abuse vary. Some men fear being neglected and not having excessive dependency needs gratified; others may see the fetus as a rival. In most cases, however, one finds a history of abuse before the woman became pregnant. Same-Sex Partnering, Marriage, and Pregnancy Some lesbian couples decide that one partner should become pregnant through artificial insemination. Societal attitudes may put stress on this arrangement, but if the two women have a secure relationship, they tend to bond strongly together as a family unit. Men in committed gay relationships are fathering children through artificial insemination with surrogate mothers. Recent studies show that children raised in same sex couple households are not measurably different from children raised by heterosexual parents with respect to personality development, psychological development, and gender identity. These children are also not more likely to be gay or lesbian themselves. Some single, never-married women who do not wish to marry but do want to become pregnant may do so through artificial or natural insemination. Such women constitute a group who believe that motherhood is the fulfillment of female identity, without which they view their lives to be incomplete. Most of these women have considered the consequence of single parenthood and feel able to rise to the challenges. Sexual Behavior The effects of pregnancy on sexual behavior vary. Some women experience an increased sex drive as pelvic vasocongestion produces a more sexually responsive state. Others are more responsive than before the pregnancy, because they no longer fear becoming pregnant. Some have diminished desire or lose interest in sexual activity altogether. Libido may be decreased because of higher estrogen levels or feelings of unattractiveness. Avoidance of sex may also result from physical discomfort or an association of motherhood with asexuality. Men with a madonna complex view pregnant women as sacred and not to be defiled by the sexual act. Either a man or a woman may erroneously consider intercourse potentially harmful to the developing fetus and, thus, something to be avoided. Men who have extramarital affairs during their wives’

pregnancies usually do so during the last trimester. Coitus. Most obstetricians place no prohibitions on coitus during pregnancy. Some suggest that sexual intercourse cease 4 to 5 weeks antepartum. If bleeding occurs early in pregnancy, an obstetrician may prohibit coitus temporarily as a therapeutic measure. Bleeding in the first 20 days of pregnancy occurs in 20 to 25 percent of women and approximately half of that group experience spontaneous abortion. Maternal death resulting from forcibly blowing air into the vagina during cunnilingus has been reported; the deaths presumably result from air emboli in the placental–maternal circulation. Parturition Fears regarding pain and bodily harm during delivery are universal and, to some extent, warranted. Preparation for childbirth affords a sense of familiarity and can ease anxieties, which facilitates delivery. Continuous emotional support during labor reduces the rate of cesarean section and forceps deliveries, the need for anesthesia, the use of oxytocin (Pitocin), and the duration of labor. A technically difficult or even painful delivery, however, does not appear to influence the decision to bear additional children. Men’s responses to pregnancy and labor have not been well studied, but the recent trend toward inclusion of fathers in the birth process eases their anxieties and elicits a fuller sense of participation. Fathers do not parent the same way as mothers, and new mothers sometimes need to be encouraged to respect these differences and view them positively. Lamaze Method. Also known as natural childbirth, the Lamaze method originated with the French

obstetrician Fernand Lamaze. In this method, women are fully conscious during labor and delivery, and no analgesic or anesthetic is used. The expectant mother and father attend special classes, during which they are taught relaxation and breathing exercises designed to facilitate the birth process. Women who have such training often report minimal pain during labor and delivery. Participating in the birth process may help a fearful or ambivalent father bond with his newborn infant. Prenatal Screening Prenatal screening for potential or actual fetal malformation is conducted in most pregnant women. Sonograms are noninvasive and can detect structural fetal abnormalities. Maternal α-fetoprotein (AFP) is measured between 15 and 20 weeks, screening for neural tube defects and Down syndrome. The sensitivity of Down syndrome testing is increased when a triple screen is done (AFP, hCG, and estriol). Amniocentesis is indicated for women over 35 years, those with a sibling or parent with a known chromosome anomaly, and those with abnormal AFP or any other risk for severe genetic disorder. Amniocentesis is usually done between 16 and 18 weeks and carries a risk that 1 in 300 women will miscarry after the procedure. In the first

trimester, chorionic villus sampling (CVS) can be done, which reveals the same information concerning chromosomal status, enzyme levels, and DNA (deoxyribonucleic acid) patterns. With CVS, there is a risk that 1 in 100 women will have a spontaneous abortion after the procedure. Screening in the first trimester allows women to choose early termination, which may be physically and emotionally easier on the woman. Profound ethical questions are involved in whether or not to abort a fetus with a known defect. Some women choose not to terminate and report a strong loving bond that lasts throughout the life of the child, who usually predeceases the parent. Lactation Lactation occurs because of a complex psychoneuroendocrine cascade that is triggered by the abrupt decline in estrogen and progesterone concentrations at parturition. In general, babies should be fed as needed, rather than by schedule. Breast-feeding has many benefits. The composition of breast milk supports timely neuronal development, confers passive immunity, and reduces food allergies in the child. In subsistence-level cultures in which children are allowed to nurse as long as they want (a practice supported by La Leche League, a breast-feeding advocacy group), most babies will wean themselves between ages 3 and 5 if not encouraged by the mother to do so earlier. Women who decide to breast-feed need good teaching and social support, which if lacking may lead to frustration and feelings of inadequacy. Women must not feel pressured or coerced into breast-feeding if they are opposed or ambivalent. In the long term, no discernible difference exists between bottle-fed and breast-fed children as adults. An incidental finding about lactation is that some women experience sexual sensations during lactation, which in rare cases can lead to orgasm. In the early 1990s a woman who called a help line about such feelings was put in jail and had her infant taken from her on allegations of sexual abuse. Common sense ultimately prevailed, however, and mother and infant were reunited. Perinatal Death Perinatal death, defined as death sometime between the 20th week of gestation and the first month of life, includes spontaneous abortion (miscarriage), fetal demise, stillbirth, and neonatal death. In previous years, the intense bond between the expectant or new parent and the fetus or neonate was underestimated, but perinatal loss is now recognized as a significant trauma for both parents. Parents who experience such a loss go through a period of mourning much as that experienced when any loved one is lost. Intrauterine fetal death, which can occur at any time during the pregnancy, is an emotionally traumatic experience. In the early months of pregnancy, a woman is usually unaware of fetal death and learns of it only from her doctor. Later in pregnancy, after fetal movements and heart tones have been experienced, a woman may be able to detect fetal demise. When given the diagnosis of fetal death, most

women want the dead fetus removed; depending on the trimester, labor may be induced, or the woman may have to wait for spontaneous expulsion of the uterine contents. Many couples consider sexual relations during the period of waiting not only undesirable but psychologically unacceptable as well. A sense of loss also accompanies the birth of a stillborn child and induced abortion of an abnormal fetus detected by antenatal diagnosis. As mentioned, attachment to an unborn child begins before birth, and grief and mourning occur after a loss at any time. The grief experienced after a third-trimester loss, however, is generally greater than that experienced after a first-trimester loss. Some parents do not wish to view a stillborn child, and their wishes should be respected. Others wish to hold the stillborn, and this act can assist the mourning process. A subsequent pregnancy may diminish overt feelings of grief, but it does not eliminate the need to mourn. So-called replacement children are at risk for overprotection and future emotional problems. CONCEPTION Infertility Infertility is the inability of a couple to conceive after 1 year of coitus without the use of a contraceptive. In the United States, about 15 percent of married couples are unable to have children. In the past, women were blamed when couples did not have children, and feelings of guilt, depression, and inadequacy frequently accompanied the perception of being barren. Today, it is known that causes of infertility are attributed to disorders in men in 40 percent of cases, disorders in women in 40 percent, and disorders of both in 20 percent. Separate histories obtained for each partner (Table 27-1) and tests in an infertility workup (Table 27-2) usually reveal the specific cause; however, 10 to 20 percent of couples have no identifiable cause. Table 27-1 Focused History for Infertility Workup

Table 27-2 Tests in the Infertility Workup The inability to have a child can produce severe psychological stress on one or both partners in a marriage. Self-blame increases the likelihood of psychological problems. Women—but not men—are at increased risk for psychological distress if they are older and do not already have biological children. If one or both partners are unwilling to take advantage of assisted reproductive techniques, the marriage may falter. A psychiatric evaluation of the couple may be advisable. Marital disharmony or emotional conflicts about intimacy, sexual relations, or parenting roles can directly affect endocrine function and such physiological processes as erection, ejaculation, and ovulation. No evidence exists, however, for any simple, causal relation between stress and infertility. When preexisting conflict gives rise to problems of identity, self-esteem, and guilt, the disturbance may be severe and may manifest through regression; extreme dependence on a physician, mate, or parent; diffuse anger; impulsive behavior; or depression. The problem is further complicated when hormone therapy is used to treat the infertility, because the therapy may temporarily increase depression in some patients. Mood and cognition can be altered by pharmacological agents used to treat disorders of ovulation or to hyperstimulate the ovaries. Persons who have difficulty conceiving may experience shock, disbelief, and a general sense of helplessness, and they develop an understandable preoccupation with the problem. Involvement in the infertility workup and the development of expertise about infertility can be a constructive defense against feelings of inadequacy and the humiliating, sometimes painful aspects of the workup itself. Worries about attractiveness and sexual desirability are common. Partners may feel ugly or impotent, and episodes of sexual dysfunction and loss of desire are reported. These problems are aggravated when a couple is scheduling sexual relations according to temperature charts

or ovulatory cycles. Treatments for infertility (Table 27-3) are expensive and consume much time and energy. Both men and women can be overwhelmed by complexity, cost, invasiveness, and

uncertainty associated with medical intervention. Table 27-3 Assisted Reproduction Techniques Single persons who are aware of their own infertility may shy away from relationships for fear of being rejected once their “defect” is known. Persons who are infertile may have particular difficulty in their adult relationships with their own parents. The identification and equality that come from sharing the experience of parenthood must be replaced by internal reserves and other generative aspects of their lives. Professional intervention may be necessary to help infertile couples ventilate their feelings and go through the process of mourning for their lost biological functions and the children they cannot have. Couples who remain infertile must cope with an actual loss. Couples who decide not to pursue parenthood may develop a renewed sense of love, dedication, and identity as a pair. Others may need help in exploring the options of husband or donor insemination, laboratory implantation, and adoption. FAMILY PLANNING AND CONTRACEPTION Family planning is the process of choosing when, and if, to bear children. One form of family planning is contraception, the prevention of fecundation, or fertilization of the ovum. The choice of a contraceptive method (Table 27-4) is a complex decision involving both women and their partners. Factors influencing the decision include a

woman’s age and medical condition, her access to medical care, the couple’s religious beliefs, and the need for coital spontaneity. The woman and her partner can weigh the risks and benefits of the various forms of contraception and make their decision on the basis of their current lifestyle and other factors. The success of contraceptive technology has enabled career-minded couples to delay child-bearing into their 30s and 40s. Such a delay, however, may increase infertility problems. Consequently, many women with careers feel their biological clocks ticking and plan to have children while in their early 30s to avoid the risk of not being able to have them at all. Table 27-4 Current Methods of Contraception

Sterilization Sterilization is a procedure that prevents a man or a woman from producing offspring. In a woman, the procedure is usually salpingectomy, ligation of the fallopian tubes, a procedure with low morbidity and low mortality. A man is usually sterilized by vasectomy, excision of part of the vas deferens, which is a simpler procedure than salpingectomy and can be performed in a physician’s office. Voluntary sterilization, especially vasectomy, has become the most popular form of birth control in couples married for more than 10 years. A small proportion of patients who elect sterilization may suffer from neurotic poststerilization syndrome, which can manifest through hypochondriasis, pain, loss of libido, sexual unresponsiveness, depression, and concerns about masculinity or femininity. One study of a group of women who regretted sterilization reported they had chosen the procedure while in poor relationships, frequently with abusive partners. Regret is most prevalent when a woman forms a new relationship and wishes to have a child with a new partner. Psychiatric consultation may be necessary to separate persons seeking sterilization for irrational or psychotic reasons from those who have made the decision after some time and thought. The operative procedures for sterilization, namely vasectomy and tubal ligation, have assumed less importance than in the past because of the advent of contraceptives and the relative ease of obtaining abortions. Nonetheless, sterilization procedures are still chosen by men and women who, for a variety of reasons, want to permanently end their ability to produce children. Abortion Induced abortion is the planned termination of a pregnancy. About 1.3 million abortions are performed in the United States each year—246 abortions for every 1,000 live births. The various types of abortion are listed in Table 27-5. Over the past decade, the number of abortions has declined by about 15 percent. Family planning experts believe that more sex education and

greater availability of contraceptive devices keep the number of abortions down. In Western countries, most women who obtain abortions are young, unmarried, and primiparous; in emerging countries, abortion is most common among married women with two or more children. Table 27-5 Types of Abortion

Of abortions, 60 percent are performed before 8 weeks of gestation, 88 percent are performed before 13 weeks, and 4.1 percent between 16 and 20 weeks, with 1.4 percent occurring after 21 weeks. Table 27-6 summarizes the most common abortion techniques, and Table 27-7 compares medical and surgical abortion techniques. Table 27-7 Comparison of Medical and Surgical Pregnancy Termination Table 27-6 Abortion Techniques

Abortion has become a political and philosophical issue in the United States. The country is sharply divided between pro-choice and pro-life factions. In recent years, antiabortion demonstrators have picketed abortion clinics and have provoked angry confrontations with patients. The atmosphere of moral condemnation and intimidation may make the decision to terminate a pregnancy difficult. Psychological Reactions to Abortion. Recent studies demonstrate that most women who have an abortion for an unwanted pregnancy (i.e., induced abortion) were satisfied with their decision, with few, if any, negative psychological sequelae. Women who had miscarriages, however (i.e., spontaneous abortion), reported a high rate of dysphoric reactions. The difference can be explained, in part, by the fact that most women who induced abortion did so because they did not want the child. Women who spontaneously miscarried presumably wanted their babies. In the long term, however, about 10 percent of women who had induced abortion regretted having had the procedure. Second-trimester abortions are more psychologically traumatic than first-trimester abortions. The most common reason for late abortions is the discovery (via amniocentesis or ultrasound) of an abnormal karyotype or fetal anomaly. Thus, late abortions usually involve the loss of a wanted child with whom the mother has already formed a bond. Before the legalization of abortion in the United States in 1973, many women sought illegal abortions, often performed by untrained practitioners under nonsterile conditions. Considerable morbidity and mortality were associated with these abortions, and women who were denied abortion sometimes chose suicide over continuation of an unwanted pregnancy. In general, however, the risk of suicide is low in pregnant women, even in those who do not want a child but who carry the baby to term. When a woman is forced to carry a fetus to term, even though the risk of suicide is low, the risk increases for infanticide, abandonment, and neglect of the unwanted newborn.

Abortion can also be a significant experience for men. If a man has a close relationship with the woman, he may wish to play an active role in the abortion by accompanying her to the hospital or abortion clinic and providing emotional support. Fathers may experience considerable grief over the termination of a wanted pregnancy. Reproductive Senescence Both men and women age and experience an age-related decline in reproductive capacity, but only women experience complete gonadal cessation. Loss of reproductive capacity may present a psychological challenge to those who are not reconciled to the loss of fertility. Even with gonadal failure, however, the availability of donor oocytes and sperm means that pregnancy can be initiated in a menopausal woman with an intact uterus who elects to pursue that option. Studies have shown that older men may develop a genetic sperm mutation, giving rise to a higher incidence of autistic or schizophrenic offspring. Menopause Menopause, the cessation of ovulation, generally occurs between 47 and 53 years of age. The hypoestrogenism that follows can lead to hot flashes, sleep disturbances, vaginal atrophy

and dryness, and cognitive and affective disturbances. Women are at increased risk for osteoporosis, dementia, and cardiovascular disease. Depression at menopause has been attributed to the “empty nest syndrome.” Many women, however, report an enhanced sense of well-being and enjoy opportunities to pursue goals postponed because of child rearing. PSYCHIATRIC ASPECTS OF PREGNANCY Postpartum Depression Many women experience some affective symptoms during the postpartum period, 4 to 6 weeks following delivery. Most of these women report symptoms consistent with “baby blues,” a transient mood disturbance characterized by mood lability, sadness, dysphoria, subjective confusion, and tearfulness. These feelings, which may last several days, have been ascribed to rapid changes in women’s hormonal levels, the stress of childbirth, and the awareness of the increased responsibility that motherhood brings. No professional treatment is required other than education and support for the new mother. If the symptoms persist longer than 2 weeks, evaluation is indicated for postpartum depression. Postpartum depression (coded as a subtype of major depressive disorder in the fifth edition of Diagnostic and Statistical Manual of Mental Disorders [DSM-5]) is characterized by a depressed mood, excessive anxiety, insomnia, and change in weight. The onset is generally within 12 weeks after delivery. No conclusive evidence indicates that “baby blues” will lead to a subsequent episode of depression. Several studies do indicate that

an episode of postpartum depression increases the risk of lifetime episodes of major depression. Treatment of postpartum depression is not well studied because of the risk of transmitting antidepressants to newborns during lactation. Table 27-8 differentiates postpartum “baby blues” from postpartum depression. Table 27-8 Comparison of “Baby Blues” and Postpartum Depression A syndrome described in fathers is characterized by mood changes during their wives’ pregnancies or after the babies are born. These fathers are affected by several factors: added responsibility, diminished sexual outlet, decreased attention from his wife, and the belief that the child is a binding force in an unsatisfactory marriage. Postpartum Psychosis Postpartum psychosis (sometimes called puerperal psychosis) is an example of a psychotic disorder that occurs in women who have recently delivered a baby. The syndrome is often characterized by the mother’s depression, delusions, and thoughts of harming either herself or her infant. Such ideation of suicide or infanticide must be carefully monitored; although rare, some mothers have acted on these ideas. Most available data suggest a close relation between postpartum psychosis and mood disorders, particularly bipolar disorder and major depressive disorder. It is coded as a subtype of bipolar disorder in DSM-5. The incidence of postpartum psychosis is about 1 to 2 per 1,000 childbirths. About 50 to 60 percent of affected women have just had their first child, and about 50 percent of cases involve deliveries associated with nonpsychiatric perinatal complications. About 50 percent of the affected women have a family history of mood disorders. The most robust data indicate that an episode of postpartum psychosis is essentially an episode of a mood disorder, usually a bipolar disorder but possibly a depressive disorder. Relatives of those with postpartum psychosis have an incidence of mood disorders that is similar

to the incidence in relatives of persons with mood disorders. As many as two thirds of the patients have a second episode of an underlying affective disorder during the year after a baby’s birth. The delivery process may best be seen as a nonspecific stress that causes the development of an episode of a major mood disorder, perhaps through a major hormonal mechanism. The symptoms of postpartum psychosis can often begin within days of the delivery, although the mean time to onset is within 2 to 3 weeks and almost always within 8 weeks of delivery. Characteristically,

patients begin to complain of fatigue, insomnia, and restlessness, and they may have episodes of tearfulness and emotional lability. Later, suspiciousness, confusion, incoherence, irrational statements, and obsessive concerns about the baby's health and welfare may be present. Delusional material may involve the idea that the baby is dead or defective. Patients may deny the birth and express thoughts of being unmarried, virginal, persecuted, influenced, or perverse. Hallucinations with similar content may involve voices telling the patient to kill the baby or herself. Complaints regarding the inability to move, stand, or walk are also common. The onset of florid psychotic symptoms is usually preceded by prodromal signs such as insomnia, restlessness, agitation, lability of mood, and mild cognitive deficits. Once the psychosis occurs, the patient may be a danger to herself or to her newborn, depending on the content of her delusional system and her degree of agitation. In one study, 5 percent of patients committed suicide and 4 percent committed infanticide. A favorable outcome is associated with a good premorbid adjustment and a supportive family network. Subsequent pregnancies are associated with an increased risk of another episode, sometimes as high as 50 percent. As with any psychotic disorder, clinicians should consider the possibility of either a psychotic disorder caused by a general medical condition or a substance-induced psychotic disorder. Potential general medical conditions include hypothyroidism and Cushing's syndrome. Substance-induced psychotic disorder can be associated with the use of pain medications such as pentazocine (Talwin) or of antihypertensive drugs during pregnancy. Other potential medical causes include infections, toxemia, and neoplasms. Postpartum psychosis is a psychiatric emergency. Antipsychotic medications and lithium (Eskalith), often in combination with an antidepressant, are the treatments of choice. No pharmacological agents should be prescribed to a woman who is breastfeeding. Suicidal patients may require transfer to a psychiatric unit to help prevent a suicide attempt. The mother is usually helped by contact with her baby if she so desires, but the visits must be closely supervised, especially if the mother is preoccupied with harming the infant. Psychotherapy is indicated after the period of acute psychosis, and therapy is usually directed at helping the patient accept and be at ease with the mothering role. Changes in environmental factors may also be indicated, such as increased support from the husband and others in the environment. Most studies report high rates of recovery from the acute illness.

Mrs. Z is a 30-year-old high school teacher living in Lagos, Nigeria. She is married and has five children. The birth of her last child was complicated by hemorrhage and sepsis, and she was still hospitalized on the gynecology service for 13 days after delivery when her gynecologist requested a psychiatric consultation. Mrs. Z was agitated and seemed to be in a daze. She said to the psychiatrist: "I am a sinner. I have to die. My time is past. I cannot be a good Christian again. I need to be reborn. Jesus Christ should help me. He is not helping me." A diagnosis of postpartum psychosis was made. An antipsychotic drug, chlorpromazine (Thorazine), was prescribed, and Mrs. Z was soon well enough to go home. Three weeks later, she was readmitted, this time to the psychiatric ward, claiming she "had had a vision of the spirits" and was "wrestling with the spirits." Her relatives reported that at home she had been fasting and "keeping a vigil" through the nights and was not sleeping. She had complained to the neighbors that there was a witch in her house. The witch turned out to be her mother. Mrs. Z's husband, who was studying engineering in Europe, hurriedly returned and took over the running of the household, sending his mother-in-law away and supervising Mrs. Z's treatment himself. She improved rapidly on an antidepressant medication and was discharged in 2 weeks. Her improvement, however, was short-lived. She threw away her medications and began to attend mass whenever one was given, pursuing the priests to ask

questions about scriptures. Within 1 week, she was readmitted. On the ward, she accused the psychiatrist of shining powerful torchlights on her and taking pictures of her, opening her chest, using her as a guinea pig, poisoning her food, and planning to bury her alive. She claimed to receive messages from Mars and Jupiter and announced that there was a riot in town. She clutched her Bible to her breast and accused all the doctors of being “idol worshippers,” calling down the wrath of her god on all of them. After considerable resistance, Mrs. Z was finally convinced to accept electroconvulsive treatment, and she became symptom free after six treatments. At this point, she attributed her illness to a difficult childbirth, the absence of her husband, and her unreasonable mother. She saw no further role for doctors, called for her priest, and began to speak of her illness as a religious experience that was similar to the experience of religious leaders throughout history. However, her symptoms did not return, and she was discharged after 6 weeks of hospitalization. (Courtesy of Bushra Naz, M.D., Laura J. Fochtmann, M.D., and Evelyn J. Bromet, Ph.D.) Psychotropic Medications in Pregnancy No definitive answers exist to the questions of which psychotropic medications are safest during pregnancy and lactation. In patients with worsening psychiatric illness during pregnancy, outpatient psychotherapy, hospitalization, and milieu therapy should be attempted before routine use of psychotropic medication. The risks and benefits of treatment with psychotropics versus maternal psychiatric illness must be carefully evaluated on an individual basis. If the patient, her psychiatrist, and her obstetrician

decide to continue psychiatric medications throughout pregnancy, the dosage should be calibrated to the physiological changes each trimester. Although no antidepressant medications have been associated with intrauterine death or major birth defects, both selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs) are associated with a transient perinatal syndrome. Studies demonstrate that fluoxetine (Prozac) has been found in amniotic fluid. Mood stabilizers are associated with more consequential teratogenic risks, namely cardiac anomalies and neural tube defects, but women with bipolar disorder are at a significant risk of relapse without medication maintenance. Lithium has been associated with an increased risk of Ebstein’s anomaly, a congenital downward displacement of the tricuspid valve into the right ventricle. The U.S. Food and Drug Administration (FDA) rates drugs in five categories of safety for use in pregnancy, with categories of risk coded A, B, C, D, and X (Table 27-9). In general, all medications that are not absolutely essential should be avoided during pregnancy. Table 27-9 Food and Drug Administration Rating of Drug Safety in Pregnancy Teratogens Teratogens are drugs or other agents that cause abnormal fetal development. Infections such as varicella, toxoplasmosis, and herpes simplex, among others, can interfere with normal development. Pregnant women who smoke are subject to premature births, and congenital defects are more common in smokers than in nonsmokers. Alcohol abuse is associated with fetal alcohol syndrome (see Section 20.2). Other drugs of abuse, such as cocaine and heroin, produce drug-dependent newborns. In general, pregnant women should not use prescription and over-the-counter drugs and phytomedicinals. Drugs given in the third trimester are rarely teratogenic. Retinoids (used to treat acne) taken early in pregnancy have been associated with fetal abnormalities. Premenstrual Dysphoric Disorder

Premenstrual dysphoric disorder (PMDD) is a somatopsychic illness triggered by changing levels of sex steroids that accompany an ovulatory menstrual cycle. It occurs about 1 week before the onset of menses and is characterized by irritability, emotional lability, headache, anxiety, and depression. Somatic symptoms include edema, weight gain, breast pain, syncope, and paresthesias. The diagnostic criteria for premenstrual dysphoric disorder according to DSM-5 are listed in Table 27-

10. Approximately 5 percent of women have the disorder. Treatment is symptomatic and includes analgesics for pain and sedatives for anxiety and insomnia. Some patients respond to short courses of SSRIs. Fluid retention is relieved with diuretics. Table 27-10 DSM-5 Criteria for Premenstrual Dysphoric Disorder

The generally recognized syndrome involves mood symptoms (e.g., lability, irritability), behavior symptoms (e.g., changes in eating patterns, insomnia), and physical symptoms (e.g., breast tenderness, edema, and headaches). This pattern of symptoms occurs at a specific time during the menstrual cycle, and the symptoms resolve for some period of time between menstrual cycles. The hormonal changes that occur during the menstrual cycle are probably involved in producing the symptoms, although the exact etiology is unknown. Because of the absence of generally agreed-upon diagnostic criteria, the epidemiology of premenstrual dysphoria is not known with certainty. Up to 80 percent of all women experience some alteration in mood, sleep, or somatic symptoms during the premenstrual period, and about 40 percent of these women have at least mild to

moderate premenstrual symptoms prompting them to seek medical advice. Only 3 to 7 percent of women have symptoms that meet the full diagnostic criteria for PMDD. Given that most women who experience changes in affect or somatic symptoms during the premenstrual period are not severely functionally impaired, it is important to distinguish these women from those who are diagnosed with PMDD. Premenstrual syndrome (PMS) is distinguished from PMDD by the severity and number of symptoms, as well as the degree to which function is impaired. Table 27-11 lists the diagnostic criteria for PMS in which the patient reports at least one of the affective or somatic symptoms during the 5 days before menses in each of the three prior menstrual cycles. Table 27-11 Diagnostic Criteria for Premenstrual Syndrome The course and the prognosis of PMDD have not been studied sufficiently to reach any reasonable conclusions. Anecdotally, the symptoms tend to be chronic unless effective treatment is initiated. Treatment of PMDD includes support for the patient about the presence and recognition of the symptoms. SSRIs (e.g., fluoxetine) and alprazolam (Xanax) have been reported to be effective, although no treatment has been conclusively demonstrated to be effective in multiple, well-controlled trials. If symptoms are present throughout the menstrual cycle, with no intercycle symptom relief, clinicians should consider one of the nonmenstrual cycle–related mood disorders and anxiety disorders. The presence of especially severe symptoms, even if cyclical, should prompt clinicians to consider other mood disorders and anxiety disorders. A thorough medical workup is necessary to rule out medical or surgical conditions to account for symptoms (e.g., endometriosis). OTHER ISSUES Sexually Transmitted Diseases A sexually transmitted disease (STD) is a contagious disease acquired as a result of a physical sexual interaction. From the 1950s through 1970s, the infections were considered treatable and not life-threatening. That was before acquired immune deficiency syndrome (AIDS) was recognized, which is caused by infection with human immunodeficiency virus (HIV) and is currently incurable, life-threatening, and transmissible from mother to fetus. A sequela of STDs, such as gonorrhea and chlamydia, is pelvic inflammatory disease

(PID). Untreated, PID can develop into bilateral tubo-ovarian abscesses and necessitate hysterectomy and bilateral salpingo-oophorectomy. Early antibiotic treatment is advocated to prevent development of the abscesses and to reduce the likelihood of infertility, chronic pelvic pain, and ectopic pregnancy from tubal damage. These infections also can lead to obstruction of the vas deferens and chronic prostatitis and subsequent male infertility. Another STD that can have

serious consequences is venereal warts, or human papillomavirus (HPV). Genital infections with certain subtypes of HPV can lead to premalignant changes of the penis, vulva, vagina, and cervix and are thought to cause cervical cancer. Venereal warts can be removed chemically or surgically but are difficult to eradicate completely. Women who contract HPV are encouraged to have regular gynecological examinations and Papanicolaou smears to detect premalignant lesions. An HPV vaccine exists, which is recommended for all girls 11 to 12 years of age to decrease the incidence of certain strains of HPV virus. This vaccine would then decrease the incidence of genital warts and cervical cancer. Sexual monogamy and abstinence, which will prevent most STDs, are advocated as public health measures. Libidinal impulses, however, can be difficult to control and restrict. Therefore, measures such as condom use are strongly recommended as an alternative public health measure. Adolescents, in particular, need to know the potential consequences of sexual activity with regard to STDs and pregnancy. Admonishing teens to remain chaste is unlikely to be completely effective and may be counterproductive. The risks of sexual intercourse may be forgotten or seem minimal in comparison to the need for affection or escape. Persons with low self-esteem or under stress may view sex as a means of bolstering their self-image or escaping their stresses. The reinforcing properties of sex ensure that the problem of STDs will endure. Studies in Europe, especially Holland, have shown that easy availability of condoms (e.g., in schools) reduces both STDs and unwanted pregnancies. Pelvic Pain Pelvic pain can have many causes, including endometriosis, pelvic adhesions, ovarian or adnexal masses, hernias, and bowel or rectal disease. Pelvic pain can also be secondary to psychogenic causes such as guilt, fertility, or fears of infertility, and the emotional disturbances associated with ongoing or past incest or sexual abuse. Pelvic pain should not be attributed to psychogenic causes unless a thorough evaluation has excluded organic causes. In most instances, the evaluation should include a diagnostic laparoscopy. Likewise, dyspareunia or pain with intercourse should not be assumed to have a psychogenic origin unless all anatomical causes have been excluded. Pseudocyesis Pseudocyesis (false pregnancy) is the development of the classic symptoms of pregnancy —amenorrhea, nausea, breast enlargement and pigmentation, abdominal distention (Fig. 27-2), and labor pains—in a nonpregnant woman. Pseudocyesis demonstrates the

ability of the psyche to dominate the soma, probably via central input at the level of the hypothalamus. Predisposing psychological processes are thought to include a pathological wish for, and fear of, pregnancy; ambivalence or conflict regarding gender, sexuality, or childbearing; and a grief reaction to loss following a miscarriage, tubal ligation, or hysterectomy. The patient may have a true somatic delusion that is not subject to reality testing, but often a negative pregnancy test result or pelvic ultrasound scan leads to resolution. Psychotherapy is recommended during or after a presentation of pseudocyesis to evaluate and treat the underlying psychological dysfunction. A related event, couvade, occurs in some cultures in which the father of the child undergoes simulated labor, as though he were giving birth. In those societies couvade is a normal phenomenon. FIGURE 27-2Abdominal distention in patient at 36th week. Bimanual examination revealed uterus normal in size and position. Miss S, aged 16, thought she had become pregnant after her first coital experience, which occurred without contraception. Shortly after she read about the signs and symptoms of pregnancy, her menses stopped. She related that she felt tingling in her breasts, which she believed were enlarged. She also reported nausea and vomiting in the morning, which was observed by her mother. On examination, the uterus was enlarged, breasts were developed with dark areola and contained milk, and a pigmented line was observed from the umbilicus to the pubis. The abdomen was not enlarged, but she believed she felt fetal movement.

A pregnancy test had negative results and the patient was so informed; however, she could not be dissuaded of her belief that she was pregnant. She entered psychotherapy, and within 2 months her menses returned and she accepted the fact that she was not pregnant.

Hyperemesis Gravidarum Hyperemesis gravidarum is differentiated from morning sickness in that vomiting is chronic, persistent, and frequent, leading to ketosis, acidosis, weight loss, and dehydration. The prognosis is excellent for both mother and fetus with prompt treatment. Most women can be treated as outpatients, with changing to smaller meals, discontinuing iron supplements, and avoiding certain foods. In severe cases, hospitalization may be necessary. Although the cause is unknown, a psychological component may exist. Women with histories of anorexia nervosa or bulimia nervosa may be at risk. Pica Pica is the repeated ingestion of nonnutritive substances, such as dirt, clay, starch, sand, and feces. This eating disorder is most often seen in young children, but is common in pregnant women in some subcultures, most notably among African American women in the rural South, who may eat clay or starch (e.g., Argo). The cause of pica is unknown, but it may be related to nutritional deficiencies in the mother. REFERENCES Berga SL, Marcus MD, Loucks TL, Hlastala S, Ringham R, Krohn MA. Recovery of ovarian activity in women with functional hypothalamic amenorrhea who were treated with cognitive behavior therapy. Fertil Steril. 2003;80:976–981. Berga SL, Parry PL, Cyranowski JM. Psychiatry and reproductive medicine. In: Sadock BJ, Sadock VA, eds. Kaplan & Sadock's Comprehensive Textbook of Psychiatry. 8th ed. Vol. 2. Philadelphia: Lippincott Williams & Wilkins; 2005:2293. Bloch M, Rotenberg N, Koren D, Klein E. Risk factors for early postpartum depressive symptoms. Gen Hosp Psychiatry. 2006;28(1):3–8. Dell DL. Premenstrual syndrome, premenstrual dysphoric disorder, and the premenstrual exacerbation of another disorder. Clin Obstet Gynec. 2004;47:571. El Kissi Y, Romdhane AB, Hidar S, Bannour S, Ayoubi Idrissi K, Khairi H, Ben Hadj Ali B. General psychopathology, anxiety, depression and self-esteem in couples undergoing infertility treatment: a comparative study between men and women. Eur J Obst Gynecol Reprod Biol. 2013;167(2):185–189. Goriely A, McGrath JJ, Hultman CM, Wilkie AO, Malaspina D. "Selfish spermatogonial selection": A novel mechanism for the association between advanced paternal age and neurodevelopmental disorders. Am J Psychiatry. 2013;170(6):599– 608. Grigoriadis S, VonderPorten EH, Mamisashvili L, Roerecke M, Rehm J, Dennis CL, Koren G, Steiner M, Mousmanis P, Cheung A, Ross LE. Antidepressant exposure during pregnancy and congenital malformations: Is there an association? A systematic review and meta-analysis of the best evidence. J Clin Psychiatry. 2013;74(4):e293–e308. Kroll R, Rapkin AJ. Treatment of premenstrual disorders. J Reprod Med. 2006; 51(4 Suppl):359–370. Lamberg L. Risks and benefits key to psychotropic use during pregnancy and postpartum period. JAMA. 2005;294:1604– 1608. Nelson HD, Humphrey LL, Nygen P. Postmenopausal hormone replacement therapy: Scientific review. JAMA. 2002;288:882. Rosenberg R, Greening D, Windell J. Conquering Postpartum Depression: A Proven Plan for Recovery. Cambridge, MA:

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