

# Pregnancy-Associated Breast Cancer

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## Case Study

R.M., a 38-year-old woman, gravida 4, para 2, was 28 weeks pregnant. She was a busy mother of two active boys, aged 7 and 4, and was thrilled to learn she was expecting a baby girl. Her pregnancy had progressed normally, with common complaints of fatigue and heartburn. Her prior pregnancies also were without complications except for cesarean deliveries because of a breech presentation in her first pregnancy.

R.M. had a history of a benign breast cyst, so she was not overly concerned when she felt a quarter-sized painless lump in her right breast. She waited two weeks until her next scheduled office visit to mention the lump to her obstetrician. Her doctor performed a thorough breast examination and reassured her that the lump probably was a blocked milk duct. He suggested that she have an ultrasound to be sure. The ultrasound was inconclusive, so her doctor insisted on a fine needle biopsy to rule out any possibility of cancer.

Several days later, R.M. received devastating news: She had stage II invasive ductal carcinoma of the breast. After meeting with an oncologist, surgeon, and maternal fetal medicine doctors, she was scheduled for a modified radical mastectomy at 30 weeks. Her first round of chemotherapy would be at 32 weeks and second infusion at 35 weeks; her next treatment would be held to avoid complications of anemia or neutropenia in the infant. R.M. would then be scheduled for a repeat cesarean section at 37.5 weeks.

## Pregnancy-Associated Breast Cancer

Pregnancy typically is viewed as a time of health and wellness, so the possibility of

being diagnosed with cancer usually is far from a pregnant woman's mind. Although uncommon, breast cancer is second to cervical cancer as the most commonly diagnosed cancer during pregnancy (Psyrrri & Burtness, 2005). Pregnancy-associated breast cancer (PABC) occurs in about 1 in 1,000 to 3 in 10,000 pregnancies (Hahn et al., 2006). As many women delay childbirth until age 30–40, the incidence of PABC is expected to rise (Psyrrri & Burtness). In the United States, about 3,500 cases of breast cancer are diagnosed in pregnant women every year (Hassey Dow, 2000). A first pregnancy at 30 years of age or older and advanced maternal age are known risk factors for breast cancer (Psyrrri & Burtness). The rate for women in their 40s having a first pregnancy has increased steadily since 1984. The number of women aged 30–34 years having a first pregnancy in 1975 has increased from 53 per 1,000 to 92 per 1,000 in 1997 and first-time mothers aged 35–39 years have risen from 36 per 1,000 in 1990 to 44 per 1,000 in 1997 (Keleher et al., 2002).

Breast cancer is classified as “pregnancy associated” if it is diagnosed during pregnancy or within one year of delivery (Hahn & Theriault, 2008). About 3% of all breast cancers are diagnosed during pregnancy (Ring, Smith, & Ellis, 2005). The average age at diagnosis for patients with PABC is 32–38 years (Keleher et al., 2002). A painless mass is palpated by the patient in 90% of reported cases (Scott-Conner, 1999). The incidence of breast cancer is the same in pregnant women as nonpregnant women in the general population. The hormonal and immunologic changes

in pregnancy were presumed to provide a favorable environment for the growth of breast cancer cells, but multiple studies have failed to prove the theory (Scott-Conner).

The physiologic changes that take place in the breast during pregnancy can contribute to a delay in the diagnosis of PABC. In preparation for lactation, a woman's breast size will nearly double in size and weight. The influence of estrogen and progesterone cause an increase in blood flow and fat, resulting in an increase in the size of milk-producing glands. Some women may begin to leak colostrum by 25 weeks gestation. Irritation of the breast ducts caused by rapid tissue growth may cause a bloody discharge, which usually is a benign condition (e.g., cells in the lining of the breast ducts being shed, secretion from a papilloma) (Imaginis, 2007). The areola also may increase in size and become darker in color. In addition, Montgomery tubercles, small nodules surrounding the areola, will produce a fluid to lubricate and cleanse the nipple in preparation for nursing (Imaginis).

## Breast Mass Assessment in Pregnant Women

A thorough baseline examination of the breast should be performed in the early stages of pregnancy before the physiologic changes are pronounced. Breast cancer most often presents as a painless lump or thickening, sometimes accompanied by a bloody discharge from the nipple (Eedarapalli & Jain, 2006). Palpating a mass is more difficult when the breast becomes

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