Benign Breast Diseases
An introduction for the advanced practice nurse
Kari Mau, DNP, APRN-BC

Breast complaints are common in the outpatient clinical setting and warrant careful consideration. Because breast cancer is the most common cancer in women in the United States, nurse practitioners should approach breast complaints judiciously (Smania, 2017). However, most breast complaints stem from benign causes, and one million women are diagnosed with benign breast diseases (BBDs) each year (Figueroa et al., 2016).

BBDs encompass a heterogeneous group of breast lesions that may present with a range of patient symptoms and physical signs or may be detected only on radiologic imaging. These conditions occur across the lifespan because breast tissue is greatly influenced by the hormones estrogen and progesterone. In addition to hormonal status, changes in ductal and glandular breast tissue occur as women age. As a result, BBDs often arise in the second decade of life and peak during the fourth and fifth decades (Guray & Sahin, 2006). This article will describe pathological processes involved in the development of BBDs, examination for BBDs, and treatment strategies.

Pathology
The breasts are comprised of connective, glandular, and fatty tissues. Changes in the breast tissue are associated with age. At the onset of puberty, the levels of estrogen and progesterone rise, and breast development occurs. Estrogen is the hormone that regulates the development of ductal tissue, whereas progesterone mediates the branching of milk ducts and the development of lobules. With menses, estrogen and progesterone stimulate proliferation of cells, which results in an increase in breast size (Santen, 2018).

From early adolescence to menopause, the ducts and lobules that make up the glandular tissue dominate the composition of the breast. Prior to menopause, in the middle reproductive years, the glandular tissue of the breast may become firm or dense, or of a lumpy consistency (Santen, 2018). This is commonly described as nodularity or thickening, and fibrocystic changes are common.

Changes that occur with menopause often include a decrease in the glandular tissue of the breast and an increase in the fatty tissue. Breasts may decrease in size yet feel lumpier. In addition, the connective tissue may lose elasticity, causing the breasts to appear to sag. These changes in the breast tissue are largely attributable to the reduction in estrogen at the time of menopause (Guray & Sahin, 2006; Santen, 2018).

Examination
Evaluation for BBD begins with a taking of the patient’s history and a physical examination. The patient’s history may reveal factors that predispose the patient to BBD and malignancy. Age of onset of menses and age of menopause, along with history of pregnancy, provide insight into hormonal influences. Inquiring about the use of oral contraceptives or menopausal hormone therapy is another contributing...
factor. The patient’s history may also show a history of breast biopsies with pathologies that reveal an existing BBD. A family history of cancer may also be noted. These factors may affect the diagnostic evaluation (Smania, 2017).

Age is a factor as well. If a woman is aged younger than 35 years and has a palpable mass, ultrasound is the preferred imaging strategy. Mammography is less sensitive in younger women (Calonge, 2010). In women aged 35 years and older, mammography is the initial evaluation tool (Santen, 2018). Other imaging strategies, including breast ultrasound and breast magnetic resonance imaging (MRI), may be used for diagnosis.

Patients with BBD may or may not have signs and symptoms of breast changes. The most common signs and symptoms associated with BBD are breast pain, breast masses, and nipple discharge (Smania, 2017) (see Table 1).

A BBD diagnosis is confirmed through diagnostic imaging and/or biopsy. Correct diagnosis is important because some BBDs are associated with an increased risk for breast cancer and a need for further intervention. BBDs are classified into three categories: nonproliferative, proliferative without atypia, and atypical hyperplasia (American College of Obstetricians and Gynecologists’ Committee on Practice Bulletins—Gynecology, 2016) (see Table 2).

Treatment
Management of BBD often includes radiologic surveillance (i.e., mammography, ultrasounds, or breast MRIs). An increase in the frequency of clinical breast examinations may be indicated. When a patient’s radiologic evaluation is negative, the provider may recommend short-term follow-up clinical examinations (Amin, Purdy, Mattingly, Kong, & Termuhlen, 2013).

In general, surgical excision is recommended for breast atypia, including atypical hyperplasia, and may be indicated for a growing fibroadenoma, radial scar, and intraductal papilloma or multiple papillomas known as papillomatosis. Despite having the word “carcinoma” in its name, lobular carcinoma in situ (LCIS) is another BBD. It is not classified among the three BBD categories. Instead, LCIS is considered to be a precursor lesion for breast cancer. It is often not associated with a mass or abnormal breast imaging and is diagnosed as an incidental finding when the patient undergoes a biopsy of another breast lesion. However, an LCIS diagnosis increases the patient’s risk for breast cancer tenfold. Patients with breast atypia and LCIS should be referred to a breast surgeon or surgical oncologist for surgical excision and consideration of risk-reducing medications for breast cancer (American College of Obstetricians and Gynecologists’ Committee on Practice Bulletins—Gynecology, 2016; Dyrstad, Yan, Fowler, & Colditz, 2015).

Case Study
J.N., a 41-year-old Caucasian woman, presents to her primary care nurse practitioner (NP) with complaints of a new mass in her right breast. J.N. noticed the mass one week after her last menstrual period, and she reports that the mass is tender. J.N. appears anxious and reports that she is concerned that the mass is cancerous. The NP reviews J.N.’s history. She has not had any previous breast surgeries or biopsies. She had her menarche at age 13 years, and she had her first child at age 26 years. J.N. has had two pregnancies and two deliveries (gravida 2, para 2). She took oral contraceptives for 10 years, and she is premenopausal. A maternal aunt of J.N.’s was diagnosed with postmenopausal breast cancer at age 55 years. Her family has no history of ovarian cancers. J.N. had her first screening mammogram 11 months ago. The NP performs

TABLE 1
COMMON PRESENTING SIGNS AND SYMPTOMS OF THE BREAST

<table>
<thead>
<tr>
<th>SIGN OR SYMPTOM</th>
<th>DIFFERENTIAL DIAGNOSES</th>
<th>INITIAL DIAGNOSTIC EVALUATION</th>
</tr>
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<tbody>
<tr>
<td>Breast mass</td>
<td>Cyst, fibroadenoma, malignancy</td>
<td>Clinical breast examination, diagnostic mammogram, breast ultrasound</td>
</tr>
<tr>
<td>Breast pain</td>
<td>-</td>
<td>Clinical breast examination, diagnostic mammogram, breast ultrasound</td>
</tr>
<tr>
<td>Nipple discharge</td>
<td>Intraductal papilloma, duct ectasia, infection, malignancy</td>
<td>Clinical breast examination, diagnostic mammogram, breast ultrasound, breast magnetic resonance imaging</td>
</tr>
</tbody>
</table>

Note. Physical examination includes a clinical breast examination. An advanced practice nurse can identify suspicious clinical findings, including breast masses, skin changes (e.g., dimpling), and nipple discharge. Diagnosis and treatment begin with a review of the patient’s history and the advanced practice nurse’s clinical breast examination. From this point, diagnostic breast imaging will generally include diagnostic mammography and breast ultrasound and/or breast magnetic resonance imaging, if warranted.

Note. Based on information from Santen, 2018; Smania, 2017.
a clinical breast examination. A round, mobile mass of about 1 cm is noted in J.N.’s right breast at the 11 o’clock position, 6 cm from the nipple. There are no associated skin changes or nipple discharge. The mass is not tender during the clinical breast examination. There is no axillary adenopathy. The NP orders a bilateral diagnostic mammogram with a right breast ultrasound for further evaluation.

This case study exemplifies a typical presentation of BBD. Using diagnostic imaging techniques for diagnosis will permit the advanced practice nurse to guide the patient for appropriate treatment. In this case study, observation with annual mammograms was recommended.

**Implications for Practice and Conclusion**

Breast complaints are reported by women of all ages in the outpatient setting. Reporting a breast concern to a healthcare provider can provoke anxiety. These concerns are more frequently related to the diagnosis of BBD than to breast cancer. Nurse practitioners and clinical nurse specialists provide assessment, diagnosis, and treatment of breast disease. Advanced practice nurses can facilitate proper evaluation with radiologic imaging (e.g., mammography), breast biopsy, and a referral to a breast surgeon, if warranted. Advanced practice nurses are also well positioned to recognize women’s anxiety when reporting a breast concern and can provide essential patient support and education about breast health.

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**TABLE 2.**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>BREAST LESION</th>
<th>BREAST CANCER RELATIVE RISK (95% CI)</th>
<th>REFERRAL*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atypical hyperplasia</td>
<td>Atypical ductal hyperplasia, atypical lobular hyperplasia</td>
<td>3.93 (1.24, 4.76)</td>
<td>Recommended</td>
</tr>
<tr>
<td>Nonproliferative</td>
<td>Simple breast cyst; mild, usual-type hyperplasia; papillary apocrine change</td>
<td>1.17 (0.94, 1.47)</td>
<td>Based on patient’s history and physical examination</td>
</tr>
<tr>
<td>Proliferative without atypia</td>
<td>Fibroadenoma, giant fibroadenoma, intraductal papilloma, moderate/florid hyperplasia, sclerosing adenosis, radial scar</td>
<td>1.76 (1.58, 1.95)</td>
<td>Recommended</td>
</tr>
</tbody>
</table>

*To breast surgeon or surgical oncologist

CI—confidence interval

**Note.** Based on information from Dyrstad et al., 2015.

**REFERENCES**


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