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Diagnosis and Management of Benign Breast Disease in Older Women

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The incidence of breast cancer increases with advancing age, and the relative frequency of benign breast disease (BBD) decreases. Therefore, all breast symptoms or abnormalities should be assessed with triple testing (clinical examination, imaging, +/-percutaneous needle biopsy if a localized lesion is identified) to establish a diagnosis. The spectrum of BBD changes substantially from about age 45 onwards. We review some of the benign conditions that occur in older women, such as cysts and duct ectasia, and describe clinical features and management. We also discuss specific BBDs that may be encountered more frequently and in a much older population of women than was previously identified, a consequence of both increased incidence of BBD due to past use of hormone replacement therapy and improved detection.

Key words: *benign breast disease, triple test, breast neoplasms, breast cyst, duct ectasia*

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Introduction

Understanding Benign Breast Disease in Older Women

Benign breast disease (BBD) is common and may occur during any phase of development and involution of the breast. Some benign conditions (such as fibroadenoma) are associated with young age, while other benign breast disorders occur in peri- and postmenopausal and older women. Figure 1[1] (see inset graph) shows the frequency of different discrete lumps relative to age and highlights that the spectrum of breast disease changes substantially between age 45 and 55 years. For individuals of this age range the most likely causes of a discrete breast lump are cysts, cancer, or localized benign change, while fibroadenoma and infection are rare. In older women—especially those >55 years—the most likely cause of a discrete lump is cancer. Whereas most BBD presents clinically as symptoms, the widespread implementation of population screening, especially in women aged 50–70 years, means that a spectrum of BBD may be incidentally identified in much older women.

Hormones and Changes in the Breast

Hormones are strongly associated with physiological and pathological changes in the breast at any age, and clinical observations in women receiving estrogens suggest that hormones play a role in the development of benign lesions.[2] Postmenopausal women receiving hormonal replacement therapy (HRT), particularly combined estrogen and progesterone HRT, for eight or more years have almost double the likelihood of developing benign proliferative epithelial disorders (considered benign changes) of the breast.[3] Even relatively short-term HRT in postmenopausal women has been shown to increase the proportion of women with abnormal mammograms.[4] The use of HRT in older women increases the chances of having some BBD,[2,3] such as cysts and fibroadenomas, which are now consequently encountered more often in a much older population of women than was previously observed (although this is largely based on clinical observation).[2,3] Although the incidence and development of BBD is altered by the use of HRT in older women, this has not been well quantified and is an area in need of further research.

It is important that primary care physicians be alert to these issues as they are often responsible for decisions about how and when to investigate and/or refer women with breast symptoms, and are also considerations in providing ongoing care and surveillance of women with a diagnosis of BBD.

Diagnosis

Two principles should guide the physician in evaluating lumps and/or other breast symptoms or lesions in older women. The

first is to adhere to the standard approach of triple testing,[1,5,6] which includes clinical examination, mammography (+/- ultrasound), and in the presence of a localized abnormality percutaneous needle biopsy, to achieve an accurate diagnosis. Second, given that the frequency of breast cancer increases and the relative frequency of benign conditions decreases with increasing age (Figure 1), the most important aspect of management is to ensure that malignancy is reliably excluded.

Breast Clinical Examination

Breast clinical examination (BCE) includes inspection with the patient's arms by her side, above her head, and pressing on her hips, looking for skin changes, swelling and asymmetry. Skin dimpling in an older woman is usually due to malignancy but is rarely associated with BBD, trauma, or breast involution.[1] Palpation of the breast is performed with the patient lying flat with her arms above her head, and ensuring that the entire breast gland is palpated, including the axillary tail and medial edge. If an abnormality is found, then its location, size, contour, texture, and mobility (or fixation to deep tissue) should be noted and this information provided in the referral as it may assist imaging interpretation.[7] The axillae and supraclavicular fossae should be routinely checked for nodes, although nodes may be palpable in the absence of significant breast disease. There is little evidence that routine BCE is of additional value if the woman is having regular screening mammography, although many cancer agencies and experts recommend that primary care physicians perform routine BCE yearly or every two years. BCE should always be performed whenever a woman presents with symptoms.

Imaging

Mammography is an accurate test in women 50 years and older—in fact, its accuracy increases with increased age of the individual, as the glandular tissues involute and the breast becomes largely fat-replaced as women age—and is the main imaging test in investigating symptoms. Ultrasound is performed as an adjunct to mammography if a palpable lump or a localized area of asymmetric thickening (or nodularity) is palpated. This procedure has the advantage of being highly specific in diagnosing cysts. Ultrasound is also useful in accurately guiding needle biopsy and aspiration of lesions even when a lump is palpable. Women presenting with new breast symptoms or changes who have had a screening mammogram in the past 6–12 months may still require further mammography and the need for this should be decided in consultation with a radiologist. Ultrasound is highly operator dependent, and referral to a facility that does a high volume of breast imaging is preferred.

Needle Biopsy

A solid (or probably solid, or partially solid) breast lesion in an older woman, irrespective of whether initially identified clinically or with imaging, should be further evaluated with percutaneous needle biopsy. Needling should not be done until imaging has been performed to characterize the abnormality, and sampling is best performed under image guidance (usually using real-time ultrasound) to ensure correct sampling. Options for needle biopsy include a core needle, which provides histological information and is increasingly the standard approach,[6] or fine needle biopsy or aspiration, which provides a cytological diagnosis and is the preferred option where the lesion is likely to be cystic. Both methods are highly accurate if performed and interpreted by experienced operators; however, fine needle biopsy from some BBD in older women may be acellular. For this reason core biopsy is preferred. In older women, it is recommended that all patients with a breast lump be referred to a specialist breast surgeon. In communities where such referrals may not be possible, referral to a general surgeon may be applicable.

Specific Benign Breast Disorders in Older Women

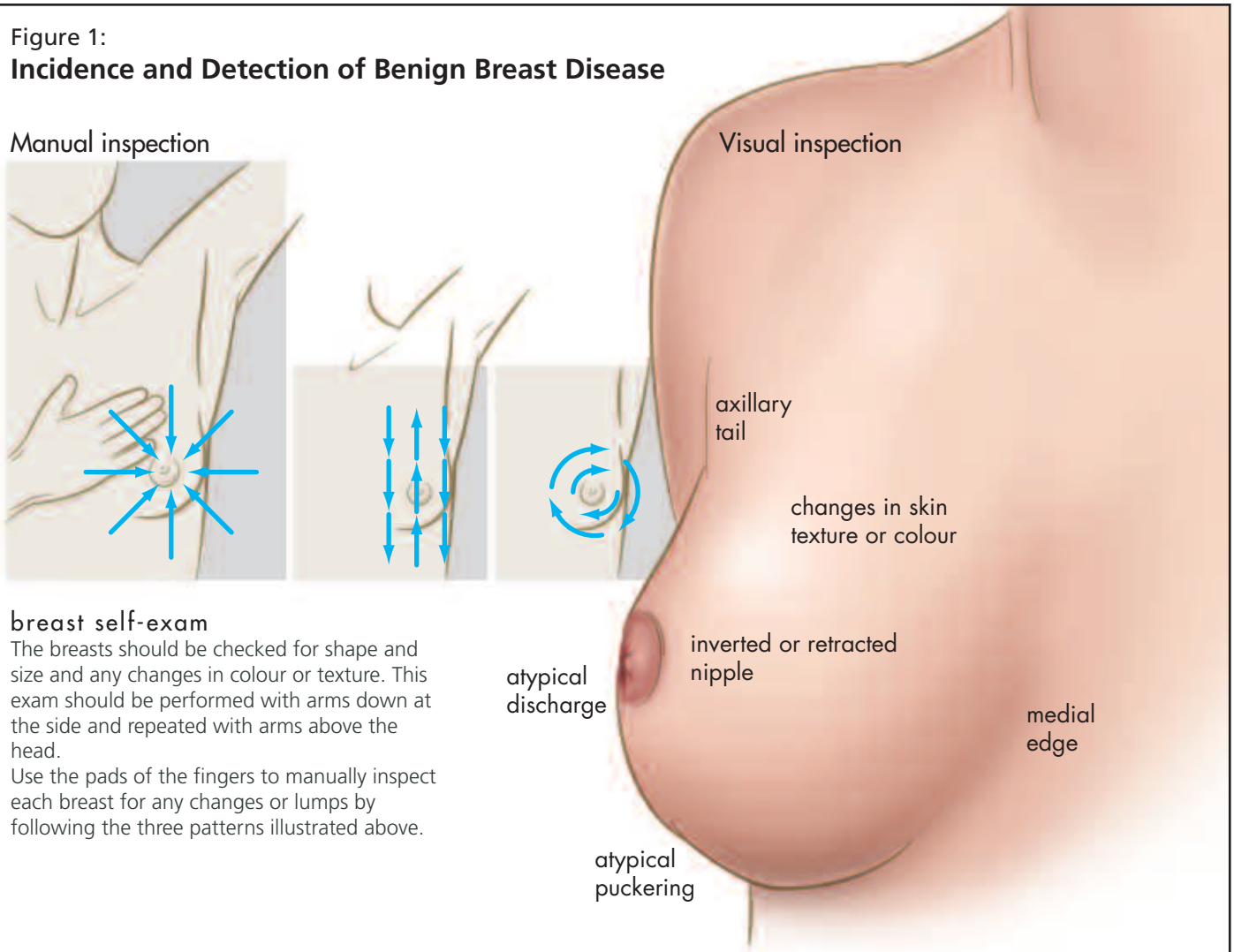
Cysts

Cysts are a common cause of breast lumps during the perimenopausal and late menopausal years and usually disappear after menopause unless the woman is using HRT. Typically cysts are discrete, firm, smooth lumps, may have a sudden onset, and may be tender or painful. Any new lump should be assessed; however, cysts presenting symptomatically in women older than 55 years of age as new solitary masses should be regarded with particular suspicion, especially in a woman not using HRT, and warrant full investigation. When assessing women taking HRT, one should not be complacent and all new lumps should be thoroughly investigated using the triple test approach. Aspiration of a dominant symptomatic cyst is performed unless the ultrasound confirms multiple cysts, and there is definite correlation between clinically palpable lumps and the ultrasound findings; in such cases, aspiration is performed only if the cyst is symptomatic or is reported as having "atypical" features on ultrasound.[8] If a cyst is drained, the aspirate does not need to be sent for cytological testing unless there is a residual mass postaspiration or the aspirated fluid is bloodstained.[8]

Nipple Discharge

Although physiological nipple discharge (secretion in response to expression of the nipple) may occur at any age, it is rare in older women. Some women may report an episode of discharge during or immediately after mammography screening, since this involves compression of the breast, and they should be reassured that this is not a cause for concern. An accurate history is essential to ascertain the nature of symptomatic nipple discharge and any spontaneous, persistent (defined as twice or more per week) discharge requires further evaluation, especially when bloodstained or serous. Spontaneous, unilateral, bloodstained nipple discharge in women aged 60 years and older is highly

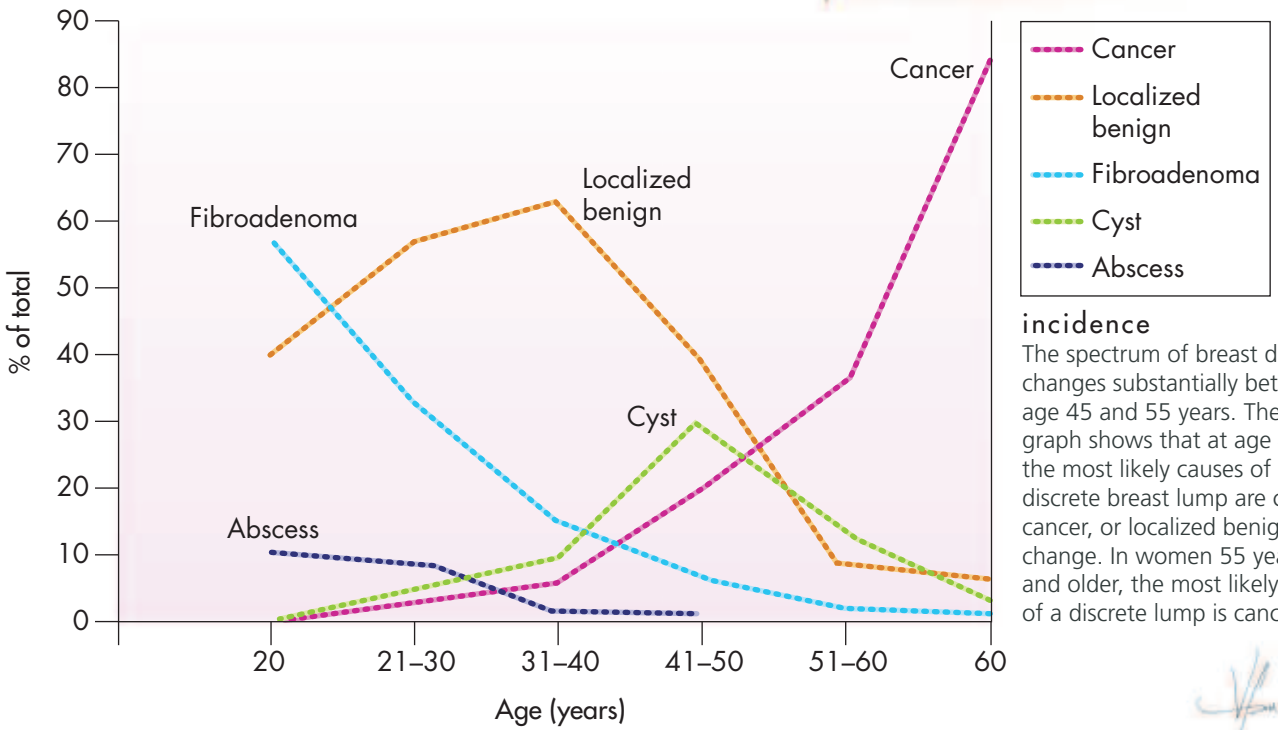
Figure 1:
Incidence and Detection of Benign Breast Disease



breast self-exam

The breasts should be checked for shape and size and any changes in colour or texture. This exam should be performed with arms down at the side and repeated with arms above the head.

Use the pads of the fingers to manually inspect each breast for any changes or lumps by following the three patterns illustrated above.



incidence

The spectrum of breast disease changes substantially between age 45 and 55 years. The graph shows that at age 45-55 the most likely causes of a discrete breast lump are cysts, cancer, or localized benign change. In women 55 years and older, the most likely cause of a discrete lump is cancer.

Source: Adapted from Dixon, JM, editor. ABC of Breast Diseases, 2nd edition. Oxford: BMJ Books, 2000.

suggestive of malignancy,[9] and all such cases should be referred for surgical opinion even in the absence of imaging or clinical abnormalities. Even among this age group, the majority of women with bloodstained discharge will have benign disease such as duct ectasia or duct papilloma.[10]

Duct Ectasia

A common cause of nipple discharge among older women is duct ectasia, a condition in which dilatation and shortening of the major subareolar ducts of the breast occur during involution.[1] This presents with symptoms that mimic cancer, including nipple discharge, nipple retraction, and less often a subareolar mass. Nipple discharge associated with duct ectasia is often described as "cheesy" (Figure 2), and may occur bilaterally and from several ducts.[1] Nipple retraction secondary to duct ectasia is classically slit-like (Figure 3), whereas cancer causes the whole nipple to be centrally inverted or "pulled in" (Figure 4). Most women with nipple discharge or retraction secondary to duct ectasia can be reassured if clinical findings are in keeping with this condition and the imaging is normal; such women require no treatment. If the discharge is troublesome, the ducts under the nipple can be excised.[1]

Eczema

Eczema may affect the nipple and areola region at any age and must be distinguished from Paget's disease of the nipple (a rare condition in which eczematoid change of the nipple is associated with an underlying malignancy).[11] Eczema usually affects the areola first and only secondarily affects the nipple (Figure 5).[11] No specific cause for eczema is known, but the areola is very sensitive. Eczema probably results from an irritant or allergy to something in the environment, such as detergents, which is why health professionals might recommend unperfumed soaps and hypoallergenic detergents for such patients. In contrast, Paget's disease always involves the nipple (Figure 6). Eczema is best treated by a short sharp course of topical steroids such as the low-potency topical corticosteroid betamethasone valerate (Betnovate®). If Paget's is suspected, the diagnosis is established by a skin biopsy.[11] If eczematoid change of the nipple is found in association with an underlying mass, then the woman should be referred to a breast specialist irrespective of imaging findings.

Mastalgia

Breast pain in older women rarely originates from the breast, unless they are taking HRT, and is usually referred from the chest wall.[12] Features suggesting that pain is referred from the chest wall are: unilateral pain; pain related to activity; pain located in the very lateral aspect of the breast (or medially at the costochondral junctions); and when the symptom is elicited with pressure on a specific spot of the chest wall.[12] To check for this on BCE, the woman can be rolled on her side so that the breast falls away from the chest wall, and the underlying chest wall can be palpated for localized tenderness. Women using estrogen-containing HRT may experience bilateral mastalgia, but this tends to settle over time. In most cases of true breast pain, reassurance after exclusion of underlying pathology is sufficient, but if the pain is significant or persistent then the woman should be referred for specialist management. It is important to note that mastalgia alone is uncommonly due to malignancy, and treatment is often for reducing symptoms. Evidence-based clinical practice guidelines for mastalgia have recently been published and are endorsed by the Society of Obstetricians and Gynaecologists of Canada.[13]

Fibroadenoma

Although fibroadenomas rarely present as a new clinical finding in older women, they may be detected by screening and, unless classical imaging features are present, a core biopsy is performed to establish the diagnosis. In older women, the

Figure 2: Nipple Discharge in Duct Ectasia

The ectasia is often "cheesy" (note that the nipple is also retracted in keeping with this condition).

Source: Dixon JM et al., 2006.[1]

Figure 3: Nipple Inversion Associated with Duct Ectasia

Nipple inversion associated with duct ectasia is usually slit-like.

Source: Dixon JM et al., 2006.[1]

Figure 4: Nipple Inversion Caused by Cancer

The nipple is centrally pulled in. Also note associated skin change in the medial part of the breast caused by the cancer.

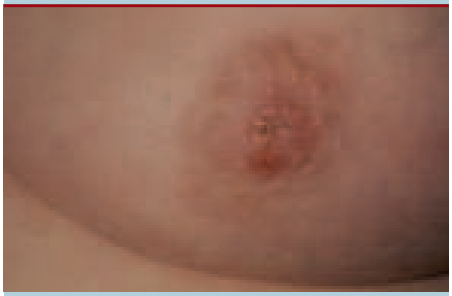
Source: Dixon JM et al., 2006.[1]

Figure 5: Eczema Affecting the Areola

No certain cause of eczema is known but is likely due to exposure to irritants or allergens in the environment.

Source: Dixon JM et al., 2006.[1]

Figure 6: Paget's Disease of the Nipple



Paget's disease of the nipple always affects the nipple first, causing eczematoid change or ulceration (and may also cause bloodstained discharge).

Source: Dixon JM et al., 2006.[1]

classical feature associated with a fibroadenoma is coarse (popcorn-like), benign calcification on mammography.

Phyllodes Tumour

Phyllodes tumour is a rare neoplasm that can occur in the perimenopausal age group and can be benign or malignant. Phyllodes tumours may or may not be related to fibroadenomas and have a different behaviour pattern, but they can be difficult to differentiate from fibroadenoma clinically and on testing, including core biopsy.[1] They tend to be larger than most fibroadenomas (>4 cm) and present clinically as a discrete, well-circumscribed mass. Whenever this diagnosis is suspected the woman should have appropriate investigations including core biopsy and be referred for surgical management.

Benign Breast Disease Identified through Screening

Mammography screening for cancer will lead to BBD being identified in older women in an age range (up to 70 years and older) in whom BBD was previously infrequently encountered in clinical practice. Radial scars, complex sclerosing lesions, sclerosing adenosis, fibroadenomas, cysts, papillomas, and areas of localized fibrosis are examples of BBD that may be diagnosed as a result of screening for cancer. One study of women undergoing annual screening found that 18.6% had a false positive result that required an open, core, or fine needle biopsy after 10 screens.[14] Many of these biopsies yield benign disease. Organized screening programs (in many countries) are usually responsible for evaluation of all abnormalities recalled from screening and, in addition to imaging, core or excision biopsy may be needed to establish a diagnosis of BBD. In some screening programs, general practitioners or other physicians will be involved in the work-up of screen-detected abnormalities and the ongoing care of women during and following the diagnosis of screen-detected (benign) disease, and need to reassure them that these conditions are benign.

Radial Scars, Complex Sclerosing Lesions

This spectrum of sclerotic and fibrotic lesions represents aberrations of stromal involution[1] and are usually screen-detected abnormalities in women having mammography.[15,16] These lesions are often difficult to diagnose since their mammography appearance mimics cancer, and needle biopsy may not be reliable in differentiating them from cancer.[16] Although these lesions do not increase the risk of developing breast cancer, they are usually managed by excision biopsy to exclude an underlying malignancy and to establish a histological diagnosis.[16]

Benign Breast Disease and Risk of Breast Cancer

Certain benign breast disorders are associated with an increased risk of subsequent development of breast cancer. Where the histology shows proliferative benign change with atypia (i.e., atypical ductal hyperplasia, atypical lobular

Key Points

- The most important aspect of management of breast symptoms (or lesions) is to exclude cancer, the incidence of which increases with age relative to benign conditions.
- The standard approach in breast evaluation at any age is triple testing (clinical examination, imaging, +/- percutaneous needle biopsy), which maximizes the accuracy of diagnosis and avoids surgery in many women with benign breast conditions.
- Mammography is the standard imaging technique in older women; adjunct ultrasound is useful in women with discrete lumps, and in guiding needle biopsy.
- The use of HRT in older women has led to an increased incidence of some benign breast disorders, such as cysts and fibroadenomas.
- Cysts are a common cause of a discrete lump in women aged 45–55, and their diagnosis should be confirmed with ultrasound; aspiration is recommended if atypical on imaging or the patient is symptomatic.
- Duct ectasia may present in older women with nipple discharge and/or nipple retraction and requires careful clinical evaluation and imaging for the differential diagnosis.
- Breast screening has increased the detection of benign lesions that are considered indeterminate on mammography, and which may require histologic diagnosis (such as core biopsy) to rule out malignancy.

hyperplasia), there is increased and significant risk, whereas if there is proliferative benign change without atypia there is only a slightly and nonsignificant increased risk for breast cancer.[17] Atypical hyperplasia combined with a family history of breast cancer further increases the risk of breast cancer compared with atypical hyperplasia alone. Women who have had a surgical biopsy showing atypical hyperplasia should be encouraged to participate in regular screening mammography and are usually advised to have annual surveillance, particularly if they have a family history of breast cancer in addition to these BBD categories.

No competing interests declared.

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