



What To Do About Breast Lumps?

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Most breast problems in the premenopausal age group are a manifestation of benign disease, the most common abnormality being fibrocystic or hormonal change (Table 1). The role of the physician is to make an accurate diagnosis and to arrange for appropriate treatment.

Although breast cancer (BC) is not the most common problem of the breast, much of the focus in breast problems is to rule out or diagnose malignancy.

How do you assess your patient's risk of cancer?

One of the major risks for developing BC is age (Table 2). A diagnosis of cancer would be common in the elderly woman presenting with a breast mass. In a younger woman, the risk increases with increasing age. For example, the risk at 30 is approximately 1/6,000 per year, but rises to 1/300 by age 70. In other words, the overall risk of cancer at 50 is 1/63, but rises to 1/9 at 90.

Another less common, but even more serious, risk for the development of BC is a strong family history. This risk is especially apparent in women who have multiple premenopausal, first-degree relatives who have developed BC. If genetic testing is done and the woman tests positive for one of the breast cancer (BRCA) 1 or BRCA 2 genes, then the lifetime risk of developing BC rises to 80%. The cancer tends to occur at a younger age with each generation. These families, fortunately, only represent less than 10% of women with BC.

Jane's concern



Jane, a 42-year-old mother of two teens, is seen with a new lump in the left breast. She has a longstanding history of nodular breasts with cyclic hormonal variation. On this visit, the lump in the left upper, outer quadrant has been persistent for a month and a half. It is slightly tender, not fixed and rubbery. She has no other signs or

symptoms. Her paternal aunt developed breast cancer at 52.

The workup of the mass includes a complete examination to assess its "feel" and to look for other untoward signs, such as skin dimpling, redness, nipple change or suspicious axillary lymph nodes. There are no other abnormalities.

What next?

Breast imaging should be done. At Jane's age, the appropriate first test would be a mammogram. Her mammogram shows asymmetry on the left side.

If there is a concern, the radiologist will often give appropriate guidance. If the mass needs further assessment, an ultrasound is often helpful to rule out a cyst or to further delineate a solid mass.

In this case it showed multiple cysts, but these were not of clinical concern.

At this point, do you wait for a cycle, investigate further, or refer the patient to a surgeon for an opinion or an open biopsy?

Table 1

Common benign breast diagnoses

- Cyclic hormonal nodularity
- Fibrocystic breast condition
 - cysts
 - fibrous areas with or without cysts
- Fibroadenoma
- Nipple discharge
 - duct ectasia
 - papilloma
- Mastalgia
- Infections

Other strong risk factors include a personal history of lobular carcinoma *in situ*, or atypical hyperplasia diagnosed on an open biopsy of the breast, or a personal history of BC.

Risk factors often quoted, such as early menarche, late childbearing, or late menopause, are not nearly as significant.¹

What about adolescents & young adults?

The most common problems seen in adolescents are developmental abnormalities, hormonal changes, and fibroadenomas. In early adulthood (20 to 35), physiologic and cyclic changes are predominant. Benign problems include fibroadenomas, cysts, and fibrous

Table 2

Management of a palpable mass

Risk assessment

Age
Family history
Biopsy results: atypical hyperplasia
Lobular carcinoma *in situ*
Previous breast cancer

Clinical examination

Imaging

Mammography
Ultrasound

Histology

Fine-needle aspiration
Core biopsy
Open biopsy



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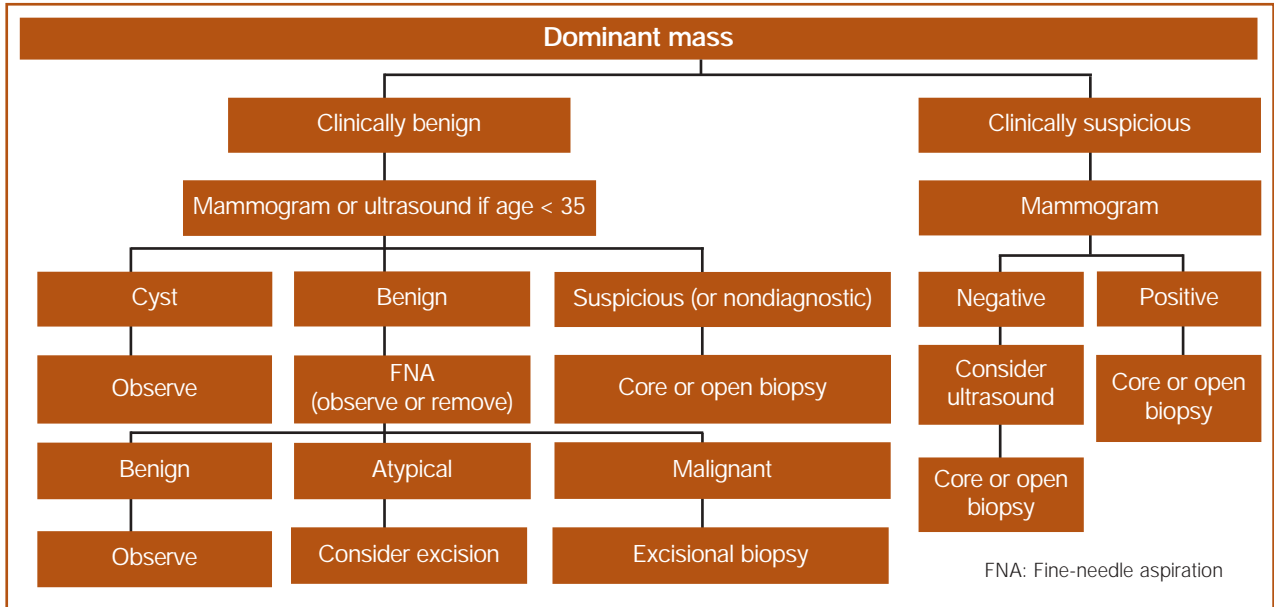


Figure 1. Workup of a breast lump.

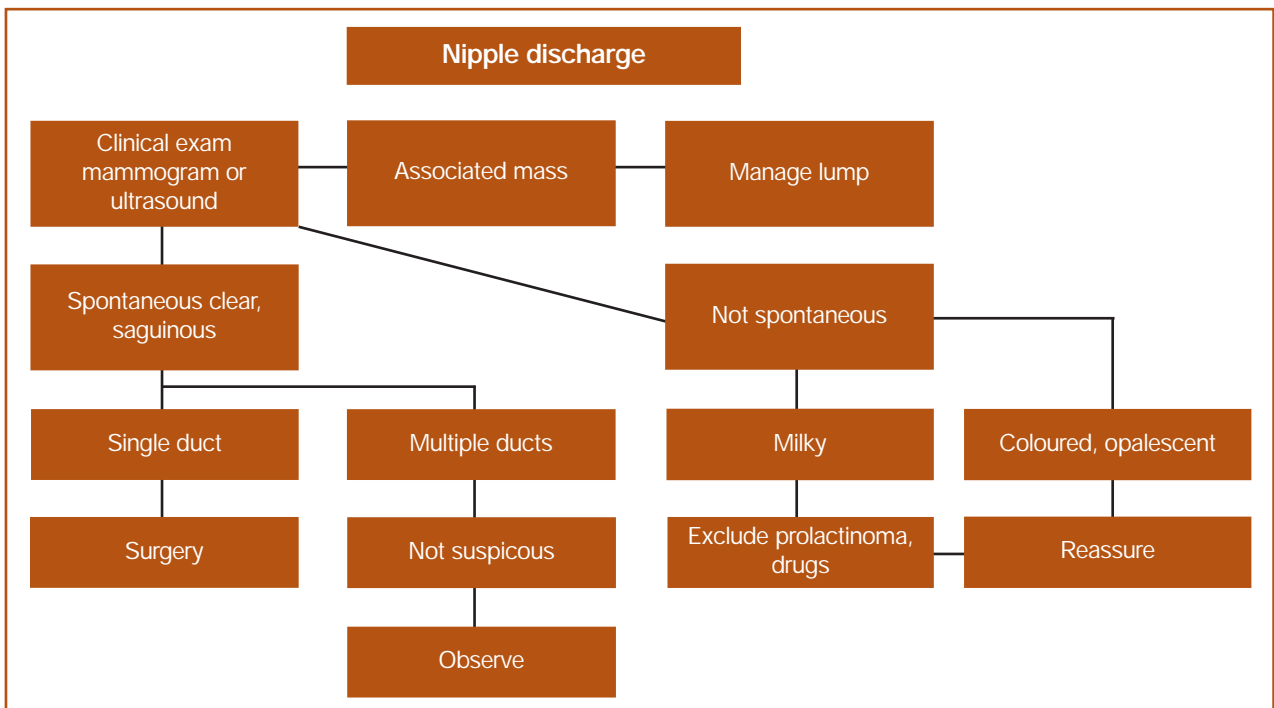


Figure 2. Workup of a nipple discharge.

Table 3

Management of a mammographic abnormality

Rely on advice from radiologist on suspicion of malignancy

- Magnification views
- Ultrasound

Visible on ultrasound

- Fine-needle aspiration
- Core biopsy
- Fine-wire localization biopsy with ultrasound localization

Visible on mammogram

- Followup only
- Stereotactic biopsy
- Fine-wire localization biopsy

Table 4

Nipple discharge and cancer

Nipple discharge can occasionally be a presenting symptom of cancer.

Alerts

- Clear (like water)
- Bloody/yellow, profuse, and spontaneous
- Uniductal
- Post-menopausal
- Associated mass

changes. Fibroadenomas are benign tumors composed of fibrous and epithelial components. About 15% are multiple and bilateral. These tumours usually present as a smooth, round, well-defined mass, which can be tender and can grow over time. Treatment can consist of observation only, but a diagnosis should first be obtained. Needle aspiration would be sufficient.

What about the middle years?

Fibrocystic breast problems peak in the 35 to 50 age group and represent much of the problems seen in the office. Mastalgia and menstrual cycle changes, that occur during a normal cycle in response to the estrogen and progesterone effects, are also common. Although a woman may believe there is a serious lump in her breast, the area of concern may subside or disappear after her period. Women with these concerns can be reassured and followed. In patients over 40, screening mammography should be considered.

Fibrocystic changes refer to clinical changes in response to cyclic hormonal change. This term defines multiple clinical and pathologic entities, such as gross cysts and true fibrous masses. Breast cysts range in size from microscopic to visible masses many centimetres in size. Cysts may be detected on mammography or on palpation. If cysts are found on

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mammography, they usually do not need further treatment. If they are large, symptomatic or worrisome, needle aspiration is appropriate.

What about older adults?

In this group, the risk rises significantly and the rate of benign problems decreases. If the woman chooses to remain on hormone replacement therapy, there is a continuation of the “fibrocystic” type of problem. However, every mass should be regarded with suspicion, and a prompt diagnosis should be made.²

“Feeling out” the exam

Experience is helpful in clinically assessing a lump, but certain considerations may be useful (Figures 1 and 2). Comparison to the rest of the breast and contralateral breast examination may sort out the texture of a lump. Is the lump soft? Is the change simply a nodularity? Is it very hard and immobile? Does it feel entirely different from the rest of the breast? Is it a prominent rib?

Cancers tend to be quite hard, irregular, and generally not tender. Dimpling and skin retraction can be signs of cancer. Clinical sensitivity is reported as high as 85%, but the rate is more likely 75% overall, with better rates in the post-menopausal women.²

What about needle aspiration and biopsy?

Fine-needle aspiration is a very useful and quick tool to assess the breast mass. There are multiple reports in the literature of the safety and accuracy of aspiration biopsy.^{3,4} Even if a physician is not comfortable with a biopsy, there is no more rapid way of diagnosing and treating a cystic lesion. The fluid obtained does not need to be sent to the lab unless it is bloody or otherwise unusual.



Figure 3. Fine-needle aspiration.

Before any aspiration is done, it is important to assess if breast imaging is necessary. If an ultrasound or mammogram is part of the assessment and it has not yet been done, it should be done first. A needle biopsy may cause some minor bleeding, which will give a false reading on any imaging, possibly delaying treatment.

Needle aspiration is safe and simple (Figure 3). The requirements are a 10-mL syringe and a 21-gauge needle. The breast is prepared with alcohol and the mass is stabilized with the fingers of the opposite hand. The needle is inserted into the lump. Then, a vacuum is maintained on the syringe while moving the needle through the lesion for a few passes (if it is not cystic). The suction is released and the needle is withdrawn from the breast. The needle is disconnected from the syringe, air is pulled into the syringe, the needle is reconnected, and then the contents are blown onto a slide and smeared.

The material needs to be sent to an experienced cytopathologist. In experienced hands, the false-positive rate should be less than 1%, and the false-negative rate about 5%.^{3,4}

The triple test evaluation of palpable breast masses is considered to be very accurate.² This consists of physical examination, mammography, and fine-needle aspiration, if there is a concordance.⁴

Of all three modalities, for either a benign or malignant diagnosis, the accuracy rate is as high as 98%. If there is no concordance, the most suspicious test should be considered.

There is a role for a GP to do fine-needle aspiration, especially if there is no ready access to a surgical consultation. This is, however, an optional tool. Referral to a specialist is always appropriate for a breast lump. Open biopsy and removal of the mass gives the definitive diagnosis. This is not usually done in the office, but rather in an outpatient or day-care setting.

How do you treat mammographic abnormalities?

Women with a palpable breast abnormality often require radiologic assessment (Table 3). This recommendation should not be confused with guidelines for screening. In a young woman with a benign-feeling mass, an ultrasound will add information. Even a young woman (over 30) may have a very suspicious mass and will need mammography. Women over 40 should have a mammogram as part of their evaluation of a breast mass.

With increasing participation of women in screening mammography programs, the family doctor can anticipate guiding many women through the process of the abnormal mammogram. Rely on the advice of the radiologist unless there is a clinical finding that needs workup. Most abnormalities represent benign disease, but early BCs are increasingly being detected this way.

The abnormalities commonly found are asymmetries, a well-defined nodule, a spicular nodule, or a cluster of calcifications. Assymetry may require comparison to a previous mammogram, magnification views, or an ultrasound. A well-defined nodule can readily be evaluated by ultrasound to be a simple cyst. If it is a solid nodule, a needle or core biopsy should be obtained. This procedure can be done with local anesthesia under ultrasound by a radiologist.⁵

Calcifications are classified by the radiologist as clearly benign, suspicious or very suspicious for cancer. Most calcifications represent benign problems, even if there is a suspicion they may represent an early cancer. Again, heed the advice of the radiologist.

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Frequently Asked Questions

1. At what age should you begin screening?

There are guidelines, but no clear answer. Women over 50 should have screening mammography. Between 40 and 50, annual mammography will save lives, but there is controversy as to the cost benefit. Any woman at high risk should have screening mammography annually.

2. When should a woman be referred for genetic testing?

A genetic predisposition that can be tested for (BRCA 1 or 2) occurs in only 5-10% of cases. These women usually present with a very strong family history of two or more premenopausal first-degree relatives with breast or ovarian cancer.

3. What is the current status on BC prevention?

There is no known prevention. For high-risk women, using tamoxifen for 5 years will halve the risk, but it does have side-effects. Ongoing studies evaluate raloxifene, and future studies will assess the potential benefit of aromatase inhibitors. There is soft evidence that a healthy lifestyle will somewhat reduce the risk.

4. How do you treat mastalgia?

Most mastalgia is hormone related. Serious pathology should be ruled out and reassurance can be given. Simple maneuvers to reduce the intensity include caffeine restriction, increasing exercise, adding vitamin E or evening primrose oil. If it is particularly severe, danazol, iodine, or bromocriptine can be considered. The problem may resolve on its own.

5. How does one "follow" a benign-feeling mass?

Use clinical common sense. Many masses are hormonal, and asking the woman to return after a cycle is appropriate. If the workup is benign, a return appointment at 3-4 months is a good option, with the advice to come back earlier if she thinks it is enlarging or changing.

What about nipple discharge?

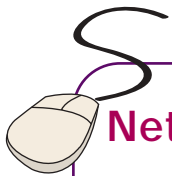
Nipple discharge is a common breast complaint (Table 4). Most nipple discharge is a result of a benign process. Physiologic discharge is typically yellowish to green, and usually mult ductal. It is usually found on manipulation of the nipple. Some reversible causes include oral contraceptives, antihypertensives, tranquilizers, hypothyroidism, and pituitary adenoma. Most benign discharge is hormonal or due to duct ectasia. Once this diagnosis is made, no further treatment is required except followup. Pathologic discharge is usually spontaneous, bloody (or clear serous) and uniductal. Most of the causes here are still benign, including papillomas or duct ectasia. However, 10% of patients with such a discharge, even without a mass or other abnormality, will have an underlying carcinoma.⁶ Workup should include a clinical examination and a mammogram. Cytology may be helpful, but it is not specific to a diagnosis. A ductogram is often recom-

Take-home message



- Most breast abnormalities represent benign problems.
- Clinical findings in association with imaging and possible needle aspiration will diagnose most conditions accurately without the need for surgery.
- Clinical sensitivity is reported as high as 75%, mammography as high as 85%. The patient's age will also influence testing, as the young patient likely has benign disease.
- Cysts can be left alone. Solid lesions which do not represent hormonal change require a workup to include imaging and possible cytology. Postmenopausal women are the most likely to have cancer.
- Patients must understand the difficulties in diagnoses, so they return promptly for a followup.

mended but cannot give a diagnosis. This test may serve as a guide as to the extent of a problem. To make a diagnosis on a pathologic discharge requires duct excision. The clinical scenario to alert the physician to a possible cancer would be a profuse, spontaneous, and uniductal discharge, especially in a post-menopausal woman. CME



Net Readings

1. The Breast Cancer Site
www.thebreastcancersite.com
2. British Columbia Cancer Agency
www.bccancer.bc.ca

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1. Sterns E: Relation between clinical and mammographic diagnosis of breast problems and the cancer/biopsy rate. *Can J Surg* 1996; 39(2):128-32.
2. Morris A, Pommier RF, Schmidt WA, et al: Accurate evaluation of palpable breast masses by the Triple Test Score. *Arch Surg* 1998; 133(9):930-2.
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