



Investigating a woman with a breast lump

Each month we present authoritative advice on the investigation of a common clinical problem, specially written for family doctors by the Board of Continuing Medical Education of the Royal Australasian College of Physicians.

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Investigating a woman with a breast lump is a common problem in general practice. It is important to investigate each case thoroughly, with the bottom line being not to miss breast cancer. This is axiomatic as early diagnosis is the most significant factor in reducing mortality. Generally, triple assessment of any breast lump is required: clinical, radiological and pathological (see the flowchart on page 99). The pathways described below can also be used to investigate other breast symptoms such as thickening, pain, asymmetry or nipple discharge.

Clinical assessment History

Take a general history as well as the following:

- duration and characteristics of the lump
- change in lump size or character (e.g. feels tender or harder) in relation to menstruation
- previous personal or family history of breast or other cancers, particularly ovarian; a lump

in a 30-year-old woman becomes much more suspicious if her mother has had breast cancer

- nipple discharge or distortion of breast shape.

Examination

Clinical examination correctly identifies 85% of breast cancer cases (sensitivity) and 80% of patients who do not have breast cancer (20% false positive rate).¹

Particular focus should be on inspecting and palpating the breast, looking not only for the presenting lump but any other masses. The axilla and supraclavicular fossa should be examined for lymphadenopathy. The other breast and axilla should also be examined carefully.

Examination can be difficult when a patient, usually premenopausal, presents with lumpy breasts. The lumpiness can be asymmetrical and can coexist with a discrete lump. If in doubt, investigate further.

Even in younger patients, clinical assessment

IN SUMMARY

- Early diagnosis is the most significant factor in reducing deaths from breast cancer. Therefore, it is important to investigate thoroughly each patient presenting with a breast lump. The lump could be a cyst, a fibroadenoma, carcinoma or ductal carcinoma *in situ*.
- Triple assessment is required – clinical, radiological and pathological. Even in younger patients, clinical investigation alone is insufficient to label a breast lesion benign. Radiological imaging (by mammography and/or ultrasound), then fine needle aspiration cytology (FNAC), should follow.
- Where there is suspicion of malignancy on clinical or radiological grounds, surgical biopsy is required, even if FNAC shows benign cells.
- Refer a woman with a suspicious lump to a breast surgeon or multidisciplinary breast clinic.



Investigating a breast lump

continued

alone is not sufficient to label a breast lesion as benign (usually a fibroadenoma). Therefore, imaging and cytological assessment are required.

Radiological assessment

The role of imaging is twofold: to provide clues about the nature of the lesion and exclude the presence of other lesions in the same, as well as opposite, breast. This includes not only possible second malignancies but field changes such as

ductal carcinoma *in situ* (DCIS). Try to give all relevant information to the radiologist, so that particular care can be taken to define the area of clinical abnormality.

Remember that imaging does not substitute for clinical examination and it is well recognised that some palpable lesions will not be seen on a mammogram. A palpable lump with a negative mammogram must still be investigated.

Mammography

Mammographic abnormalities (Figures 1 and 2) correlate well with surgical diagnosis, particularly with recent advances in technology and technique. It is important to consider that mammography in a patient with a symptom/sign (i.e. a breast lump) has different connotations from screening mammography (i.e. of asymptomatic women). In symptomatic patients, mammography has a 90% sensitivity (true positivity) and a 73% specificity.¹

Table. Types and features of breast lesions

Lesion	Important features		
Cyst	Clinical	Radiological	Cytological
	Smooth, mobile Accounts for 15% of breast lumps. Often seen in perimenopausal women	Cystic on ultrasound Refer if residual lump after aspiration or rapid or frequent reaccumulation	Examine fluid if bloodstained or mucoid
Fibroadenoma	Median age of diagnosis is 30 years Feels discrete, rubbery, smooth Accounts for 13% of breast lumps (60% in women <20 years)	Macrocalcification, false capsule	Benign diagnosis on FNAC or core biopsy needed before observation
Carcinoma	Incidence increases with age. Familial cancers present at a younger age	Suspicious features include microcalcification, spiculated/irregular outline	FNAC sensitivity 87%, specificity 76%. False negative rate for cancer 1-2% (≥35 years)
DCIS	Incidence increases with age. May present as a lump	Microcalcification	May need hookwire localisation and biopsy if no discrete lump is palpable

FNAC = fine needle aspiration cytology; DCIS = ductal carcinoma *in situ*



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Figure 1. Mammography of both breasts should follow clinical assessment when a woman presents with a breast lump.

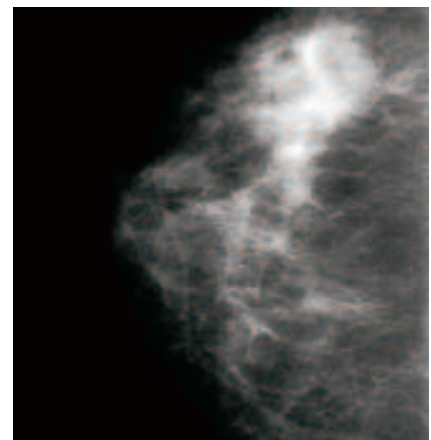


Figure 2. Mammogram showing increased density in the upper left aspect of the left breast, with architectural disturbance and microcalcification. This lesion is strongly suspicious of malignancy and should be biopsied.

Ultrasound

Ultrasound is useful, particularly in younger women in whom dense breast tissue may make mammograms difficult to interpret.

Ultrasound has a lower false positive rate than mammography and is recommended by the NHMRC National Breast Cancer Centre (NBCC) as the preferred diagnostic imaging test for women under the age of 35 years. The most important feature to demonstrate is whether the lesion has any solid component. Ultrasound-guided aspiration of a cystic lesion will also define if any residual tissue remains, which would then require further investigation.

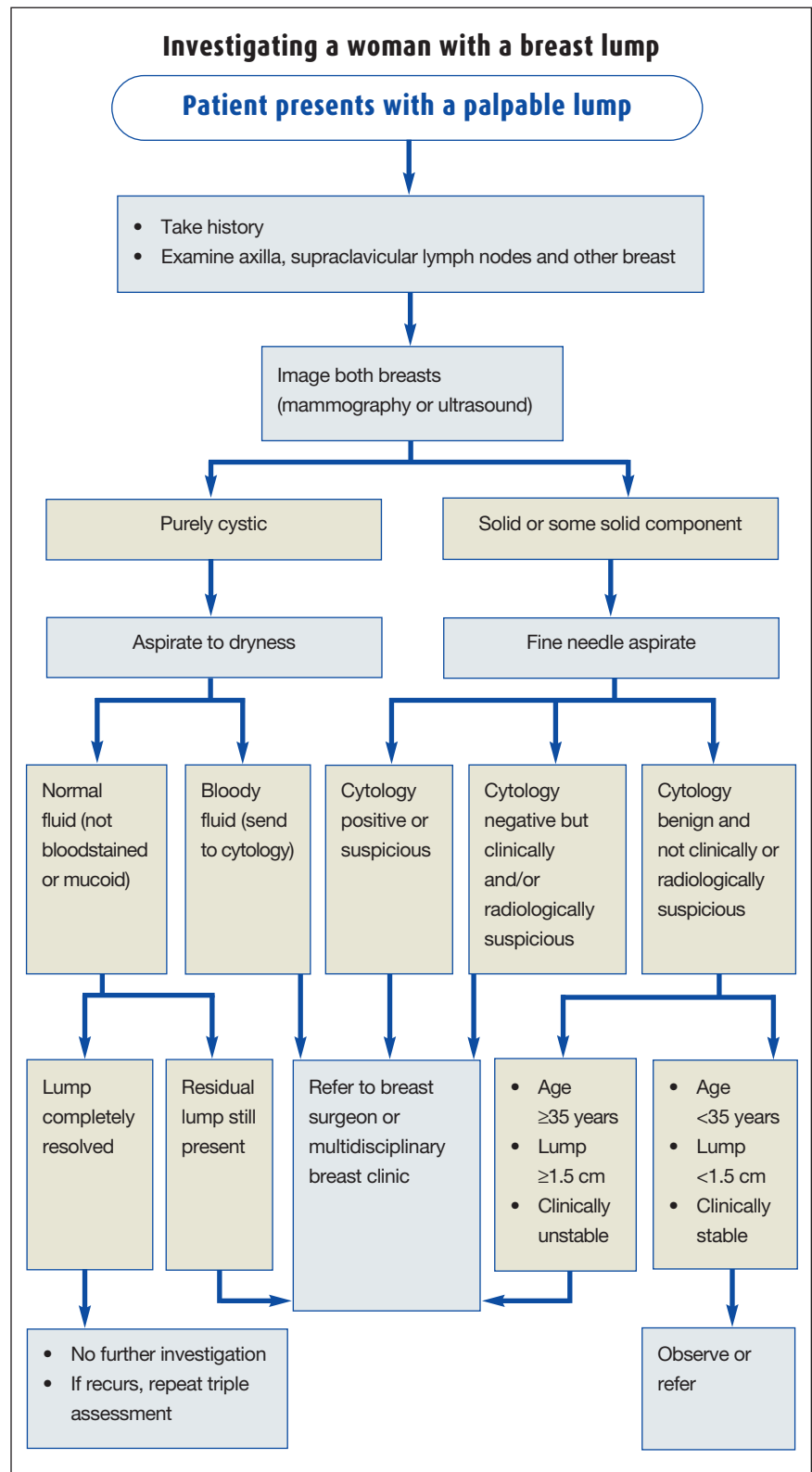
Pathological assessment

The ease and accuracy of fine needle aspiration cytology (FNAC) as a diagnostic technique has meant that almost all lesions undergo pathological assessment. In the case of a fluid-filled cyst, this may also be therapeutic. If the fluid is mucoid, blood stained (from an atraumatic tap) or not the usual straw-to-dark greenish colour, send the entire sample for cytological examination.

For a solid lesion, the advantage of making the diagnosis before surgery is that the appropriate procedure can be performed, avoiding a second operation for definitive treatment.

The limitations of FNAC must also be recognised. Where there is insufficient material for diagnosis, repeating FNAC or taking a core biopsy may be worthwhile. Occasionally, well-differentiated cancers may yield benign-appearing cells on cytology. In experienced hands, FNAC has a sensitivity and specificity of 91% and 93% respectively.¹

Importantly, where there is suspicion of malignancy on clinical or radiological grounds, a surgical biopsy procedure is required despite a FNAC reported as showing benign cells. Thus, a solid lesion in a 55-year-old woman should proceed to excision biopsy even if cytol-



ogy was reported as benign, because of her age. In other words, the principle should apply that any breast lump that could be a cancer should be excised. If in doubt, seek a second opinion from a breast surgeon or a multidisciplinary breast clinic.

'Triple test' accuracy?

Assessment of the accuracy of the 'triple test' of clinical examination, mammography and FNAC demonstrated that one or more of the methods was positive in 99.6% of breast cancer cases – that is, the combination has very high sensitivity.

The false positive rate – that is, the number of women with one or more abnormal tests who after further investigation were not found to have breast cancer, was 38%. That means a specificity of 62%.¹

Referral

Referral to a surgeon, particularly one with an interest in breast disorders, is appropriate for any suspicious lump. It is often also worthwhile seeking a second opinion in the patient with lumpy breasts where there is any clinical concern.

Conclusion

When a woman presents with a breast lump, triple assessment – clinical, radiological and pathological – will distinguish between a cyst, fibroadenoma, carcinoma or DCIS. Even in younger patients, clinical examination alone is insufficient to label a breast lump benign.

When in doubt, refer a woman with

a suspicious lump to a breast surgeon or multidisciplinary breast clinic. **MT**

Reference

1. Irwig, L. Evidence relevant to guidelines for the diagnosis of symptomatic women [report to the NBCC], 1996.

National Breast Cancer Centre

- The NHMRC National Breast Cancer Centre (NBCC) publishes a series of clinical guidelines on the early detection, management and treatment of breast cancer. These include an information card for GPs *The investigation of a new breast symptom*.
- The NBCC also publishes patient information leaflets and other consumer material.
- For more information, contact the NBCC on (02) 9934 1700 or visit its web site at <http://www.nbcc.org.au>.