

INTRODUCTION

It has been estimated that every woman will consult their general practitioner at least once in their life with a breast problem. Whatever the problem, they will all have an underlying fear that it could possibly be cancer; in some women this fear turns out to be correct. It is thus important that the general practitioner have a comprehensive understanding of both benign and malignant breast disease.

THE PROBLEM OF DISTINGUISHING NORMAL CHANGES FROM DISEASE

There is a difficult scientific - if not philosophical - problem in differentiating normality from disease in certain situations, not least in the breast. The normal breast undergoes regular menstrual changes throughout reproductive life, and also progressive involutionary alterations after the age of 35 years. These cyclical and involutionary changes occur together for about 20 years in the latter part of the woman's life. As all these changes are found in every woman they must be regarded as normal. The cyclical menstrual changes are usually experienced bilaterally as granularity, pain and tenderness often in the upper outer quadrant of the breast, but exceptions to this are frequent. In addition to these cyclical changes there is a progressive change in consistency of the breast with age: it is diffusely firm and granular in teenagers but in the late twenties and thirties this firmness and granularity becomes more marked and localised in the upper quadrant; there is progressive loss of breast tissue under the areola (forming a retro-areolar cavity) and subsequently throughout the breast. There may be a residual firm ridge of fat at the inferior fold of the breast in the post-menopausal woman. The underlying histological changes seen progressively after the age of 35 are loss of the terminal duct

lobular unit with replacement by fibrous tissue in the inter-lobular region, and sclerosis and microcystic formation together with duct dilatation and the formation of stagnant secretions. These normal changes have lead to a great deal of confusion in the interpretation of BBD, so much so that the traditional descriptions of fibroadenosis and fibrocystic disease (and other labels) are regarded as variants of normal. Much has recently been clarified by regarding these changes as abnormalities of normal development and involution (ANDI). In this concept the 4 reproductive phases of a woman's life –development, cyclical change, pregnancy, involution - are related to normal processes which might proceed to disorders and occasionally, disease.

ANDI (Abnormalities of normal development and involution)

period	NORMAL	DISORDER	DISEASE
development	lobular growth	fibroadenoma	giant F adenoma
cyclical change		Mastalgia, nodularity	
pregnancy	lactation	galactocoele	
involution	lobular, ductal, epithelial hyperplasia	Cysts, ectasia, epitheliosis	Cysts, periductal mastitis

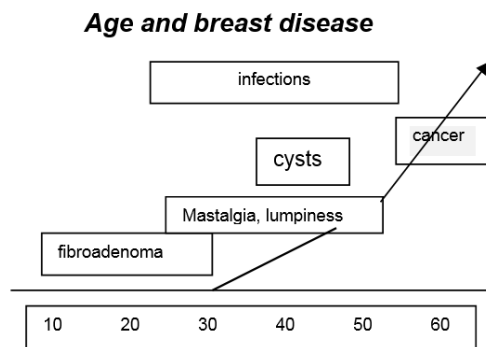
THE SPECTRUM OF BENIGN BREAST DISEASE

The frequency distribution of BBD as seen by various investigators has depended very much on their concept of normality and the “fibro-adenosis” variant. Using the modern concept of BBD, the distribution at Groote Schuur Hospital reported as many as a third of women as normal, they having presented with what they believed to be disease, and we were able to reassure them was not. The prevalence of BBD is age-dependent, with many areas of overlap. Fibro-adenomas are found between the ages of 15 and 30, the majority being encountered in the late teens and early twenties; mastalgia and varying lumpiness of the breast is found in the

late twenties and early thirties; cystic changes are usually found after childbirth or in the thirties and forties. In addition to the postpartum staphylococcal abscess, periductal infections are found in the late teens and early twenties and continue throughout life, becoming later associated with retro-areolar mammary duct ectasia.

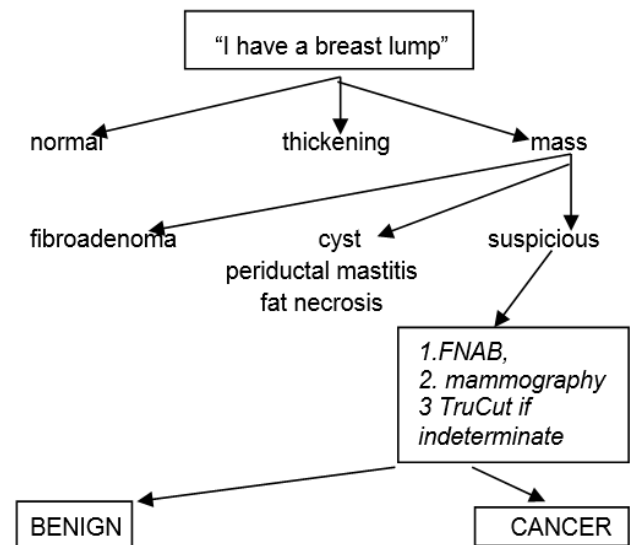
AN APPROACH TO THE DISCRETE BREAST MASS

Undoubtedly the most important clinical problem with BBD is whether the mass the patient complains of is significant or not. One has to make a decision between unnecessary investigation and biopsy of physiological thickening on the one hand and missing carcinoma on the other. Much depends on the patient's age and many are intuitively guided by this; in patients under 25 the mass is overwhelmingly likely to be a fibro-adenoma and to be carcinoma in those over 45. It is experience and sound common sense that dictate the management of masses between the intervening ages 25 and 45 years.



The first problem is to distinguish physiological thickening from a discrete mass. Physiological thickening is tender, granular and resembles the state of the breast during the 24 hours prior to menstruation; it is usually extensive, taking the contours of the breast. If there is any doubt about the diagnosis of physiological thickening in a young patient it is probably wise to see her again during the middle of the menstrual cycle. If the patient is older, it is probably wise to proceed to

mammography with or without cytological investigation. As discrete masses in patients under the age of 25 are usually fibro-adenomas, these should be excised; most patients elect to have surgery rather than conservative therapy. Multiple or recurrent discrete masses may, however, be managed conservatively if aspiration cytology confirms the diagnosis of fibro-adenoma.



With patients over the age of 25 aspiration with a conventional syringe will exclude the possibility of a cyst. Should the mass on aspiration prove to be solid then a pathological diagnosis is mandatory. One of three options may be used: aspiration cytology, Trucut biopsy or excision biopsy. Much depends on the availability of and familiarity with these procedures; where the first two are not available, excision biopsy is acceptable, but in most centres aspiration cytology has come to the forefront as the major diagnostic modality. The advantage of cytological investigations are that if the lesion is shown to be benign, then it may be removed as a minor procedure under local anaesthetic; if the cytology report indicates the presence of malignancy, then further staging investigations, patient counselling, and the performance of the appropriate procedures under a single anaesthetic have advantage. Trucut biopsy is not

used primarily in most clinics but has a place where aspiration cytology has failed to produce a diagnosis. Mammography has no primary diagnostic or management role with BBD, except in its exclusion of carcinoma and there is certainly no use for mammography in the ongoing management of known BBD.

CYSTS

Micro cyst formation is normal in the involuting breast and is invariably found histologically. Larger cysts are only detected if they are tense, perhaps painful, and are palpable to the flat of the hand. Flaccid cysts are impalpable, are only detected mammographically and do not require any treatment at all. The object of cyst aspiration is to exclude a solid lesion and to relieve pain in the case of a tense painful cyst and this is best undertaken with a syringe, aspirating the cyst to impalpability. Important points are that the cyst fluid should not be blood-stained and there should not be a

Cyst aspiration: sinister features

- ***blood-stained aspirate***
- ***residual mass***

⇒ Cytology + mammography essential

residual mass, as these features would suggest that the underlying problem is a carcinoma; biopsy of the area would then be mandatory. Cytological analysis of cyst fluid is not usually helpful. Multiple aspirations may be performed on the same cyst but in the majority of cases the single aspiration removes the problem.

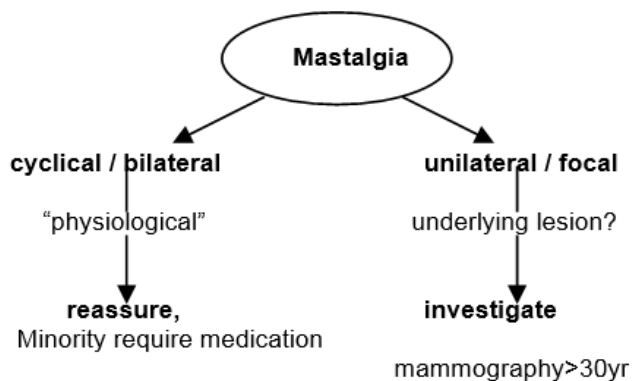
FIBRO-ADENOMAS

These are probably not neoplasms in the true sense but rather endocrine-dependent fibrous overgrowths of a single lobule. Mostly found between the ages of 15 and 30, with a peak incidence in the early twenties, they

usually reach 2cm in diameter and then do not progress in size. Giant fibro-adenomas(>5 cms) are rare. The well defined, painless, very mobile lesion in patients under the age of 25 is most likely to be fibro-adenoma and excision is the usual therapy, this view being held by patients who on questioning usually elect to have the mass excised. In patients over the age of 25 it is virtually impossible to distinguish accurately between a cyst and a fibro-adenoma so that aspiration will prevent unnecessary surgery on cysts. In patients between the ages of 25 and 35 solid lesions are probably safely excised as fibro-adenomas, but over the age of 35 extreme caution is required as the discrete lesion could easily be carcinoma. The safest procedure in this age range is to perform aspiration cytology and then to proceed with the appropriate action. We would recommend a conservative approach (with cytology) only in the case of multiple or recurrent fibro-adenomas.

MASTALGIA

Mastalgia refers to any pain - or tenderness, fullness, aching - felt in the breast. Approximately half of normal women will experience cyclical (premenstrual) mastalgia during their lifetime; when such mastalgia proceeds to disease is a philosophical question. No convincing endocrine abnormality has ever been demonstrated with mastalgia, but a considerable psychological input is evident. It is important to distinguish two types of mastalgia: *cyclical bilateral* and its variants and *non-cyclical focal* mastalgia.



Management of cyclical mastalgia usually consists of a thorough examination and reassurance, this constituting effective therapy in over 90% of cases. In severe cases (where the problem is interfering with their lives) an anti-oestrogen may be used, but the woman must be fully informed about the possible side effects of the drug. An example is danazol (Ladogar, Winthrop) 100mg daily for 3 months. Medications that are not anti-oestrogenic frequently have a placebo action only.

BREAST INFECTION

Post partum breast infection is a fairly common event which occurs in the first few days after childbirth. The organism is almost invariably *staphylococcus aureus* which has gained access by way of the nipple. In the early stages there is localised pain and tenderness (mastitis) and treatment with one of the newer penicillins is appropriate; when, however, a mass is present there has been abscess formation and surgical drainage under general anaesthetic is essential.

Periductal mastitis: Throughout a woman's life organisms may gain access to the breast ducts, traverse them and proceed to periductal mastitis. This is seen as neonatal mastitis, periductal mastitis in teenagers and in later life when involuting ducts (mammary duct ectasia) contain stagnant secretions which may lead to infection. The clinical features are of retro- and peri-areolar inflammation (pain, tenderness, redness, thickening), in some cases accompanied by oedema and nipple retraction. Many cases

mimic carcinoma (and vice versa), and in these aspiration cytology should be performed.

Oral antibiotics are given and the patient reviewed after 2 weeks, when any suspicious feature should be investigated. Occasionally, an abscess may require drainage and more rarely a fistula may require specialist attention.

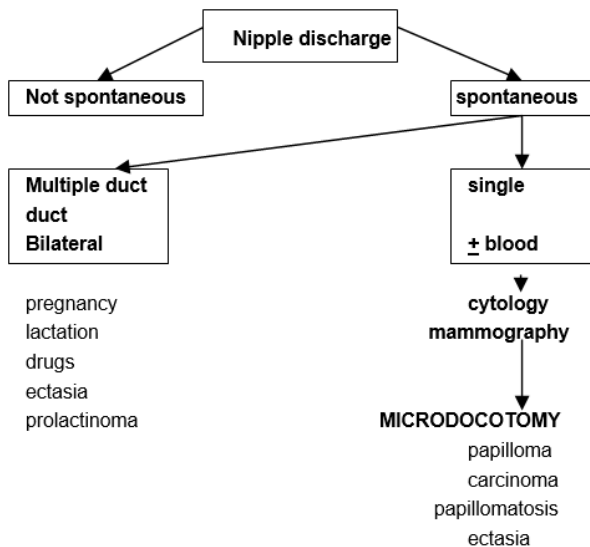
POSSIBLE CARCINOMA

Suspicious areas in the breast are usually best assessed with the triple modalities of clinical examination, cytology and mammography. If any one of these is suggestive or suspicious of carcinoma, a Tru-Cut biopsy should be performed or the area should be excised. If such excised areas prove not be carcinoma the underlying process is usually a manifestation of fibrocystic disease: sclerosing adenosis, fibrosis, radial scar or a fibro-adenomatoid nodule.

NIPPLE DISCHARGE

Many benign conditions may produce nipple discharges, but so, also, may breast cancer. It is therefore important to have a clear investigational approach to women who present with this problem.

Most women may be able to elicit a nipple discharge by squeezing their breasts. Under these circumstances, if the clinical examination is normal; they should be advised to desist from squeezing and to return if the discharge persists. A *spontaneous* discharge (fluid on the clothing) is far more significant, and under these circumstances one must determine whether the discharge is from multiple ducts and/or bilateral (and usually of little significance), or whether it is from a single duct (and could be from a carcinoma).



The presence of blood makes a neoplasm more likely, but a clear discharge may be found with carcinoma. In most instances of single duct discharge, where there is no identifiable underlying cause, the patient must undergo surgical excision of that duct (microdocotomy) to determine whether the problem is an intraductal carcinoma, papilloma, epitheliosis or ectasia.

GYNAECOMASTIA

The male breast may develop most of the diseases that the female breast does (periductal mastitis, fibroadenoma, carcinoma etc) but at a far lower frequency. When the breast becomes enlarged as a result of hormonal stimulation, the condition is called *gynaecomastia*. The patient notices that the retro-areolar area is enlarged and tender; the examiner finds a symmetrical tender disc in this situation; in some cases the area may take the contour of the female breast. Aspiration cytology and mammography are inappropriate. When the condition cannot be readily explained (not apparently physiological, drugs or liver failure), endocrine investigation may be necessary. In puberty and old age reassurance is all that is required in most cases. Very rarely, when the condition is disfiguring and a psychological disability in the young, surgical excision may be undertaken.

When the condition is due to a drug, it is not regarded as an indication to stop the drug.

Causes of gynaecomastia

Physiological

neonatal
puberty
old age

Drugs

oestrogen
digoxin
steroids etc

Liver failure

Rare tumours

testis, adrenal



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