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Fibroadenoma of the breast: a follow-up of conservative management

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This report details the outcome after clinical diagnosis of mammary fibroadenoma in 110 women aged under 35 years. After fine needle aspiration cytology, and subsequent exclusions and failures of follow-up, 92 lesions were observed for a mean of 47 weeks (range 13–90 weeks), with regular measurements until removal of persisting lesions at 12 months. Fifteen lesions disappeared and 56 had the classical histology of fibroadenoma, mean size 2·5 cm; 30 of the latter continued to grow throughout the study. Cytology is essential to exclude malignancy if conservative treatment is considered, and is helpful in identifying a benign lesion. A period longer than 12 months may be required for resolution of a fibroadenoma and removal under local anaesthesia as a day case offers a simple alternative.

Keywords:

In 1985 we reported a retrospective study of 134 patients in whom a clinical diagnosis of fibroadenoma had been made at our breast clinic[1]. On histological examination eight patients had an unsuspected carcinoma (all but one being over 35 years of age) and 58 had a localized fibrocystic change or other benign cause. Thus only 51 per cent had what histologically was considered to be a true fibroadenoma. Similar findings concerning clinicopathological correlations have recently been reported from Cape Town[2]. Realization that the natural history of fibroadenoma was ill-understood stimulated a prospective study to observe the course of fibroadenomas which were clinically diagnosed in women aged less than 35 years, provided fine needle aspiration cytology excluded unsuspected malignancy.

Patients and methods

Between February 1985 and February 1986 all patients attending our breast clinic with a clinical diagnosis of fibroadenoma and who were under the age of 35 years were asked if they would be prepared to enter the study. The clinical diagnosis was agreed by two clinicians, one a consultant surgeon. There was no limit set on the size of the lesion. If consent was given a fine needle aspiration was performed, and fixed and air-dried smears were prepared as previously reported[3]. Provided that the report indicated a smear of satisfactory quality (if not, permission was sought to repeat it) and did not demonstrate any suspicion of malignant cells, arrangements were made to review the patient at a 1 month and then at 3-monthly intervals at a special clinic. At each visit the size of the lesion was measured with engineer's calipers by one of us (S.W.) and at 12 months all persisting lesions were excised. Indications for excision during the course of the study were (1) rapid increase in size of the breast mass, (2) patient requesting removal or (3) patient moving out of the locality. Change in size during the course of the study was determined by comparing the initial size with that measured during and at the end of the study period. This estimate of change was confirmed by independently examining plots of size against time. Lesions were classified as increasing in size, decreasing in size or remaining static. Those regarded as indeterminate were included in the static group.

Results

During the period of study 110 patients had a clinical diagnosis of fibroadenoma. Fourteen were excluded for the reasons given in *Table 1*, and 11 were lost to follow-up. Of the three suspicious aspirates, cancer was confirmed in one patient aged 25, the second lesion was found to be a reactive lymph node on biopsy and the third woman had a normal second biopsy on a poorly defined lesion. Eighty-five patients completed the protocol; the mean time of follow-up was 47 ± 17 weeks (range 13–90 weeks). Seven patients had two fibroadenomas: the total number of clinical fibroadenomas observed therefore was 92.

Natural history

Fifteen of the 92 (16 per cent) clinical 'fibroadenomas' disappeared during the course of the study; 77 persisted and were excised. Twenty-five lesions were excised within 9 months of the start of the study, ten on account of steady increase in size and 15 for reasons given above. The remaining 52 were excised at the end of the study.

Histology

The histology of the 77 persisting lesions was considered to be that of a true classical fibroadenoma (i.e. an encapsulated lesion of typical epithelial and stromal pattern) in 56 cases. Twenty-one were reported as other lesions, mostly fibroadenomatoid nodules (*Table 2*). These are regarded as a type of fibrocystic change which demonstrates focally the epithelial and stromal features of a fibroadenoma[4]. The incidence of a *clinical* diagnosis of fibroadenoma proving to be a classical fibroadenoma on histology was therefore 73 per cent.

Changes in size

Of the 77 persisting lesions 49 increased in size and 28 remained static (including two which possibly became smaller). Increase in size occurred both in those with a proven true fibroadenoma and in the 'other histology' group (*Table 3*).

Table 1 *Reasons for exclusion from study in 110 patients*

Large fibroadenomas in teenagers	2
FNAC	
Acellular aspirates	3
Positive or suspicious of malignancy	3
Pregnancy	1
Refused permission to enter study	5
Total	14

FNAC, fine needle aspiration cytology

Table 2 *Histology of 77 persisting lesions believed clinically to be fibroadenoma*

Fibroadenoma	56
Fibrocystic change	18
Fibroadenomatoid nodule	12
Sclerosing adenosis	1
Sclerosing papillomatosis	1
Fibrotic nodule	3
Group of microcysts	1
Normal breast	3
Total	77

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Table 3 *Growth behaviour of 77 persisting 'clinically diagnosed fibroadenomas' related to their histology*

Histological diagnosis	Increase in size (*n*)
Fibroadenoma (*n* = 56)	40
Fibrocystic change	
Fibroadenomatoid nodule (*n* = 12)	6
Others (*n* = 6)	3
Normal breast (*n* = 3)	0

Table 4 *Age and contraceptive pill usage related to growth pattern of proven fibroadenoma*

Growth pattern	Mean (range) age of patient (years)	Exposed to current OC usage
Increase in size (*n* = 40)	23·2 (17–33)	16 (40%)
Static or indeterminate (*n* = 16)	24·8 (18–35)	6 (38%)

OC, oral contraceptive

Histological fibroadenomas. Of 56 proven fibroadenomas, 40 increased in size during the study. The mean size reached was 2·5 cm (range 1·0–4·5 cm). Ten reached their maximum size during the first few months of the study and then remained static. The average size attained was 2·0 cm (range 1·0–3·0 cm). Thirty fibroadenomas continued to grow throughout the period of study reaching a maximum mean size of 2·7 cm (range 1·3–4·5 cm) at the time of excision. Fourteen grew to a size exceeding 2·0 cm and four were over 4·0 cm. The relationship between change in size, the age of the patient and contraceptive pill usage is given in *Table 4*. No differences were noted. Pathological size was recorded in all histologically proved fibroadenomas. The relationship between maximum clinical size and pathological size correlated well.

'Other histology' group. Nine of the 21 other lesions increased in size. Six of the 12 fibroadenomatoid nodules increased in size and six remained static. The other three lesions showing an increase in size were reported as fibrotic nodules (two cases) and sclerosing adenosis (one case).

Fine needle aspiration cytology

Fine needle aspiration was reported to be consistent with a fibroadenoma in 60 of 77 patients whose lesions were excised: this judgement was based on a finding of cohesive sheets of clearly benign epithelial cells together with dispersed bare nuclei representing myoepithelial cells[5]. The relationship with the final histological diagnosis is given in *Table 5*. Eight of the 12 fibroadenomatoid nodules had findings identical to those observed for true fibroadenomas. Fine needle aspiration cytology was consistent with a fibroadenoma in six of the 15 lesions which resolved during the period of study.

Discussion

In our previous study we reported that the relationship between the clinical and pathological diagnosis of a fibroadenoma was not exact. The current prospective study confirms this finding and only 56 of 77 lesions (73 per cent) excised on the clinical belief that the patient had a fibroadenoma were pathologically proved to be such. As true fibroadenomas and the pathological conditions mimicking them are now regarded as aberrations of lobular growth and not neoplasms, these difficulties of discrimination on physical examination from other benign alterations of structure may not seem surprising[6,7]. Since many of these 'others' are fibroadenomatoid lesions the discrimination becomes less important. What is important is the discrimination from cancer.

Table 5 *Fine needle aspiration cytology related to final diagnosis in 77 excised breast lumps believed clinically to be fibroadenomas*

Fine needle aspirate	True fibroadenoma	Fibroadenomatoid lesion	Other benign	Normal
Consistent	50	8	2	0
Not consistent	6	4	4	3

In our previous report we noted that eight out of 134 patients with a clinical diagnosis of fibroadenoma had a carcinoma of the breast; these eight patients were all older than 35 years of age. In the present series three patients under the age of 35 years had positive (one case) or suspicious (two cases) reports for malignancy on fine needle aspiration cytology and were therefore excluded from the study. One of these (aged 25 years) was subsequently proved to have breast cancer. Without the availability of fine needle aspiration cytology fibroadenomas, diagnosed clinically, should not be treated conservatively, at least in women over the age of 25 years. Apart from identifying the cases of cancer, fine needle aspiration cytology is useful in that the typical appearances of a 'fibroadenoma' are further evidence of the benign nature of the mass.

The literature on 'fibroadenomas' suggests that they are self-limiting, growing to a size of 2 cm or so and then remaining static. For this reason some manage them conservatively. Our careful follow-up of fibroadenomas over a period of 12 months suggests that not only do most clinically diagnosed fibroadenomas persist but that over half (49 of 92) continue to grow. Some grow for a period and then become static but others continue to show steady growth and may reach over 4 cm in size. However, in contrast to usual teaching, there was no relationship between the age of the patient or oral contraceptive usage and growth pattern.

Growth apart, it is clear from this study that most clinically diagnosed fibroadenomas persist; only a small percentage (16 per cent) spontaneously resolved and less than half of them had fine needle aspirates consistent with a fibroadenoma. Nevertheless, it must be recognized that more than 12 months may be required to bring about satisfactory resolution to the fibrosed stage similar to that occasionally noted by many pathologists as an incidental feature in breast tissue removed for other reasons.

As a result of this prospective study it is reasonable to suggest that a typical clinical fibroadenoma can be treated conservatively in women under 35 years, but only if an adequate cytological smear obtained by fine needle aspiration does not contain malignant or suspicious cells. Careful follow-up is still necessary over a period of 12 months as these lesions may continue to grow. Many may consider it simpler to remove them as a day case under local anaesthesia.

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