

Fibroadenoma: Accuracy of clinical diagnosis in females aged 25 years or less

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Abstract

Background: Accurate clinical diagnosis of fibroadenoma in young females is desirable because of the possibility of nonoperative treatment for those desiring it.

Objectives: To determine the accuracy of the clinical diagnosis of fibroadenoma in patients aged ≤ 25 years.

Patients and Methods: A prospective study of all patients with breast disease presenting to the breast clinic was conducted from January 2004 to December 2008.

Results: During the study period, 145 patients aged ≤ 25 years presented with breast lumps. In this group, a clinical diagnosis of fibroadenoma was made in 100 (69.0%), fibrocystic disease in 32 (22.1%), breast cancer in 4 (0.03%) patients, the remaining were benign lesions. Excision biopsy was done for 81 (55.9%) patients. Of these 81 patients, only 62 (76.5%) returned with histology report. The histological diagnosis was fibroadenoma in 45 (72.5%) patients with a mean age of 21.4 years. Their ages range from 18 to 25 years. The histological diagnosis was fibrocystic disease in 9 (14.5%) and malignant phyllodes in 1 (1.6%) patient. The remaining 7 (11.3%) patients had other types of benign lesions. For fibroadenoma, true positive cases were 42, false positive 7 and false negative 3, and true negative 10. Therefore, the sensitivity of clinical diagnosis of fibroadenoma was 93.3%, while specificity was 58.8%.

Conclusion: The sensitivity of clinical diagnosis of fibroadenoma in patients aged ≤ 25 years was good, though specificity is low.

Key words: Accuracy, diagnosis, fibroadenoma

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Introduction

Fibroadenoma is the most common breast tumor in adolescent and young women.^[1-4] About one-third of women are under 20 years and two-thirds under 25.^[2]

It is difficult to ignore a breast lump once it has been noticed. Therefore, the progression to excision may become

inevitable because surgeons are afraid of missing an early carcinoma. However, the clinical findings in fibroadenoma and carcinoma often differ, and avoidance of unnecessary biopsy is desirable. The young women attending breast clinic most often attend for reassurance, and there are probably many patients for whom authoritative reassurance would allow for observation and avoid the necessity for breast biopsy for those desiring nonoperative treatment.

Following a clinical diagnosis of fibroadenoma of the breast, histological confirmation of this diagnosis made in 50.0%^[5,6] to 68.0%^[7] of masses is thought to be fibroadenomas.

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The accuracy of clinical preoperative diagnosis has been stated as being excellent, especially in those aged under 25 years.^[8]

The aim of this study is to determine the accuracy of the clinical diagnosis of fibroadenoma in patients aged ≤ 25 years.

Patients and Methods

A prospective study of all patients with breast disease presenting to the breast clinic was conducted from January 2004 to December 2008.

The relevant data of all patients presenting with breast lump whose age at presentation was 25 years or less were used for this study. The data included age at presentation, marital status, parity, side and quadrant of breast affected, maximum diameter of breast lump, clinical diagnosis made by the senior registrar or unit consultant, refusal or acceptance of biopsy, type of biopsy done, and histological diagnosis.

Statistical Package for Social Sciences version 15.0 (SPSS Inc. Chicago, IL) was used for data analysis. Simple frequencies were determined for variables, and cross tabulation of histological versus clinical diagnosis was done. Sensitivity, specificity, and positive predictive value of clinical diagnosis of fibroadenoma were calculated.

Results

During the study period, 145 patients aged ≤ 25 years presented with a breast lump. A clinical diagnosis of fibroadenoma was made in 100 (69.0%), fibrocystic disease in 32 (22.1%), breast cancer in 4 (.03%), and the remaining

were benign lesions. Excision biopsy was done for 81 (55.9%) patients of these only 62 (76.5%) returned with histology report. Excision biopsy was refused by 50 (34.5%) patients. The histological diagnosis was fibroadenoma in 45 (72.6%) patients, fibrocystic disease in 9 (14.5%), and malignant phyllodes in 1 (1.6%). The remaining 7 (11.3%) were other types of benign lesions. The 45 patients with histological diagnosis of fibroadenoma were entirely of the Igbo ethnic group and 95.6% of them were students. Their ages ranged from 18 to 25 years. The peak age was 21 years and mean age was 21.4 years. The presenting complaint was painless lump in 97.8% and painful lump in 2.2%. The duration between detection of lump and presentation was >12 months in 37.8%. The lumps were discovered accidentally by the patient in 82.2% and during breast self-examination in 17.8%. The left breast was slightly more affected in 48.9% with both breasts being affected in 6.7%. The upper outer quadrant was affected mostly in 31.1%, followed by the upper inner quadrant in 28.9%. Breast lumps were multiple in 11.1%. Nulliparous patients were 93.3%.

Cross tabulation [Table 1] of the 62 patients with histological diagnosis revealed that of the 49 patients with clinical diagnosis of fibroadenoma only 42 were confirmed to be histologically confirmed fibroadenoma giving a false positive of 7 and true positive of 42. Also, of the 45 histologically confirmed fibroadenoma, 3 were clinically diagnosed as fibrocystic disease. Therefore, the numbers of false negative cases were 3 and true negative were 10. The sensitivity of clinical diagnosis of fibroadenoma in this age group was 93.3%, while specificity was 58.8% [Table 2].

Discussion

Fibroadenoma is a common cause of discrete breast lumps in young women, with a peak age of incidence of 20–30 years.^[7] The peak age in our study population is 21 years. Onuigbo^[9] documented 18 years in adolescent in our region. Fibroadenomas occur with slightly more frequency in the right breast and are situated most often in the upper outer quadrant.^[9,10] In this study, fibroadenoma was slightly more common on the left in 48.9% and upper outer quadrant in 31.1%. This is similar to what was found by Carty *et al.*^[11] in London. Multiple fibroadenomas were found in 11.1% of the patients in this study, a similar proportion to that noted previously.^[10,11]

The clinical diagnosis of fibroadenoma is apparently straightforward given a discrete, smooth, mobile, and nontender breast lump.^[12] However, this assessment is confirmed on histology in only one-half to two-thirds of cases.^[13] Cant *et al.*^[14] found that in 321 women with clinical diagnosis of fibroadenoma there was histological confirmation of fibroadenoma in 217 (68.0%), the remainder having various benign conditions and 4 (1.3%)

Table 1: Clinical diagnosis × histologic diagnosis

Cross tabulation										
Clinical diagnosis	Histologic diagnosis									Total
	A	B	C	D	E	F	G	H	I	
Breast cancer	0	0	0	0	0	0	0	0	1	1
Fibroadenoma	1	1	1	42	2	0	1	1	0	49
Fibrocystic changes	0	0	0	3	7	0	0	0	0	10
Galactocele	0	0	0	0	0	1	0	0	0	1
Phyllodes tumor	0	0	0	0	0	0	0	1	0	1
Total	1	1	1	45	9	1	1	2	1	62

A=Adenomyoepithelial hyperplasia, B=Adenosis, C=Breast tissue fibrosis, D=Fibroadenoma, E=Fibrocystic disease, F=Galactocele, G=Lipoma, H=Benign phyllodes tumor, I=Malignant phyllodes tumor

Table 2: Diagnostic accuracy in Nnamdi Azikiwe University Teaching Hospital

Diagnostic modality	Sensitivity	Specificity	Positive predictive value
Clinical examination (%)	93.3	58.8	85.7

had carcinoma. In the study by Carty *et al.*^[11] in London, of the lesions thought to be fibroadenomas preoperatively by clinical breast examination, imaging and cytology; histology differed in only 4 (7.5%) out of 53 fibroadenomas and no carcinomas were misdiagnosed. They also noted that the sensitivity of cytology and sonomammography for the diagnosis of fibroadenoma in their study were 84.0% and 98.0%, respectively, with a positive predictive value of 92.5%.

In another study, Eltahir *et al.*^[15] documented the diagnostic accuracy of clinical examination for patients presenting to a breast clinic as 88.7%, 99.1%, and 98.5%, respectively, for sensitivity, specificity, and positive predictive value.

In our study, histology differs in 7 out of 49 fibroadenomas diagnosed by clinical examination and none was malignant. The sensitivity and specificity were 93.3% and 58.8%, respectively, with positive predictive value of 85.7% [Table 2].

The study by Carty *et al.*^[11] was on fibroadenoma, the age range of their study population was 15–48 years with a mean age of 28-years and the calculated sensitivity and specificity was based on their use of triple assessment for the preoperative diagnosis. The study by Eltahir *et al.*^[15] aimed at determining the accuracy of each arm of the triple assessment to correctly diagnose a benign or malignant breast lesion. The age range of their study population was 15–91 years. Cant *et al.*^[14] noted that aspiration cytology had a sensitivity of 87% and a specificity of 76% for fibroadenoma.

The sensitivity of clinical examination alone in diagnosing fibroadenoma in our center for patients ≤ 25 years is superior to that documented by Carty *et al.*^[11] for patients with age range of 15–48 years using triple assessment, but their specificity is much higher probably due to the addition of cytology and imaging. However, the sensitivity and specificity of mammography and cytology are higher than that of clinical examination in our study. However, it is noteworthy that none of those 25 years or less had a carcinoma misdiagnosed as fibroadenoma or other benign lesions. In a 6 years audit of excised breast lump in Ghana, no carcinomas were found below 26 years.^[16] This may not be surprising considering that it has been stated that the risk of a clinical fibroadenoma being a neoplasm is virtually confined to women over 35 years of age and this risk is more likely to be about 1:700, and 35 years has been advocated as a cut-off age below which fibroadenomas can be treated expectantly.^[11,13,17] Cant *et al.*^[14] recommend that a

conservative approach is safe for clinically and cytologically benign breast lumps in women under 25 years.

Conclusion

The sensitivity of clinical diagnosis of fibroadenoma made by senior registrars and consultants in patient ≤ 25 years in our center is good, but the specificity is low. Even though a clinical fibroadenoma is unlikely to be malignant in patients under 25 years, a follow-up is needed in those refusing excision biopsy to detect changes in the lump while still insisting on imaging or fine needle aspiration for cytology or core biopsy to determine histology for future reference.

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Conflicts of interest

There are no conflicts of interest.

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