Pattern of Benign Female Breast Disease in Al-Yarmouk Teaching Hospital

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Abstract:

Background: Benign breast disease is the most common cause of breast problems. Its diagnosis is important to differentiate it from malignant one as they differ in treatment and prognosis.

Objective: To study the prevalence of different types, their relation to age, presentation and investigations used in diagnosis will be studied.

Methods: This is a retrospective study that had enrolled 114 female patients who were treated surgically at Al-Yarmouk Teaching Hospital for benign breast diseases, during the period from 1st Jan. 2006-30th April 2007. Data includes age, presenting symptoms, investigations and final diagnosis.

Results: The median age was 35.39 years (range 15-55y). Forty (35%) patients were in the 4th decade of life. Breast lump was the main presenting symptom in 95(83.4%) patients. Investigations carried out included; ultrasound for 65 (57%) patients. Sixty two (54.4%) patients had the investigation of FNAC with a sensitivity and specificity of 85% and 95.1% respectively. Mammography was done in 20 cases which gave the sensitivity of 81.8% and specificity of 88.8%. Fibroadenoma was the most common benign pathology and affected 70(61.4%) patients.

Conclusion: Most patients with benign breast diseases were in the 4th decade. Fine needle aspiration cytology had the highest sensitivity and specificity when taken alone. Fibroadenoma was the commonest pathology. Patients with benign breast diseases should have excisional biopsy or followed by according to the clinical impression of the examiner to exclude malignancy.

Introduction:

The breast is a dynamic structure that undergoes changes throughout a woman`s reproductive life and superimposed upon this, cyclical changes throughout the menstrual cycle. Benign breast disease is the most common cause of breast problems. Up to 30% of women will suffer from a benign breast disorder requiring treatment at some time in their lives.[1]

Some benign lesions have findings on physical examination or imaging studies that are similar to those of breast cancer, necessitating a biopsy or an excision to make this distinction.

Foremost among the follow-up studies evaluating benign breast disease and cancer risk is the retrospective cohort study of Dupont, Page, Rogers, and coworkers.[2]. In this study, the slides of benign breast biopsies from over 3000 women in Nashville were reviewed, and the histologic lesions present were categorized, using strictly defined criteria, into one of three categories: nonproliferative lesions, proliferative lesions without atypia, and atypical hyperplasias. The risk of developing breast cancer was then determined for each of these groups.

The nonproliferative lesions, as defined by Dupont and Page,[3] include cysts, papillary apocrine change, epithelial-related calcifications, and mild hyperplasia of the usual type. Proliferative lesions without atypia are moderate or florid hyperplasias of the usual type, intraductal papillomas, and sclerosing adenosis. Atypical hyperplasias are proliferative lesions of the breast that possess some of the features of carcinoma in situ.[3.4] and these lesions are categorized as either ductal or lobular in type.

Other benign breast diseases are; fibroadenomas, adenomas (tubular and lactating adenomas), radial scars, duct ectasia and fat necrosis.Infection to the breast may cause abscess formation. Specific infections includes; tuberculosis and parasitic infection as Echinococcus granulosus.

Patients and Methods:

This study is a retrospective study of 114 female patients who had been presented with benign breast lesions at Al-Yarmouk Teaching Hospital in the period from 1st Jan 2006 – 30th April 2007. The study sample had been randomly selected from those patients who had attended the clinic of early detection of breast cancer and inpatients managed in the surgical department. Data were collected from the medical records of patients. Data included age, presentation, clinical examination, investigations and treatment. U/S (ultrasound) examination was done by using Kretz Technique Volusion 5300DC (Austria) with a 7.5 MHZ Linear-array transducer. FNAC was done in the hospital and in private laboratories. Final diagnosis depended on the histopathological report.

Result:

The collection included 114 female patients. Their age range was (15-55y) and their median age was (35.39years). Table.1 shows the patients distribution according to their age. In sequence of prevalence, the 4^{th} decade included the highest number of 40(35%) patients. It was followed by the 3^{rd} and 5^{th} decades, were they included 31(27.19%) and 25(21.92%) patients respectively. In this collection married, women were 87(76.3%), while unmarried were 27(23.7%). The leading presenting symptoms, was a breast lump. Ninety five(83.3%) patients presented with palpable breast lump which was painless in 62(54.5%) and painful in 33(28.9%) patients. Patients presented as pain only were 8(7%). Ten (8.8%) patients presented with a discharge from their nipple and only one patient presented with a retracted nipple. This is shown in table.2

U/S examination was carried out for 65(57%) of our patients. It was highly effective in differentiating a cystic from a solid mass in most cases and localization of impalpable masses in others. Sixty two patients had the investigation of FNAC. The false negative value was 8 and the false positive was 3. The sensisitivity and specificity were 85% and 95.1% respectively. Mammography was done in 20 cases. The false positive for the benign masses was 2 cases with 4 false negative. This gives the sensitivity of 81.8% and specificity of 88.8%.

Table 3. shows the type of final pathology. Fibroadenoma forms the majority, were 70(61.4%) patients proved to have this pathology. Next in order was the fibrocystic changes were 11(9.65%) patients were affected. Duct ectasia and lipoma affected 10(8.77%) and 5(4.36%) patients respectively. Inflammatory disorders in the form of mastitis and breast abscess affected 5(4.36%) and 4(3.51%) patients respectively. Three (2.63%) patients had adenoma and 2(1.75%) had phylloides tumor.

Table 4. shows the age distribution in patients with fibroadenoma. The leading group affected, were in the 3rd decade. It included 27(38.57%) patients, followed by the 4th decade which included 21(30%) patients.

Table 5. shows the number of patients with fibroadenoma according to their main presenting symptom. Fifty nine(51.75%) patients presented with a breast lump; 36(51.43%) presented with a painless lump and 23(32.86%) with a painful lump. Pain as a sole presenting symptom was present in only 8(11.43%) patients, while only 1(1.4%) patient presented with a retracted nipple. Fourteen(20%) patients with fibroadenoma had more than one mass. Most of our patients had simple fibroadenoma i.e. 50(71.4%) patients while the rest i.e. 20(28.6%) patients had complex fibroadenoma.

Table-1: Patients' distribution according to their age.

Age (Year-old)	Benign lesion	
	No.	%
< 20	9	7.89%
20-29	31	27.19%
30-39	40	35%
40-49	25	21.92%
50-59	9	7.89%
Total	114	100%

Table-2 distribution of patients according to their presenting complaint.

Present complaint	Benign lesion	
	No.	%
Painless lump	62	54.5%
Painful lump	33	28.9%
Pain	8	7%
Discharge	10	8.80%
Retracted nipple	1	0.80%
Total	114	100%

Table- 3. Number of patients according to final pathology.

Breast lesion	No	%
Fibroadenoma	70	61.4%
Fibrocystic disease	11	9.6%
Duct ectesia	10	8.78%
Lipoma	5	4.88%
Abscess	4	3.50%
Mastitis	5	4.88%
Fat necrosis	4	3.5%
Adenoma	3	2.6%
Phylloides tumor	2	1.75%
Total	114	100%

Table 4. Age distribution of patients with fibroadenoma.

Age (Year-old)	Fibroadenoma	
	No.	%
< 20	8	11.43%
20-29	27	38.57%
30-39	21	30%
40-49	10	14.29%
50-59	4	5.71%
Total	70	100%

Table.5 the presenting symptoms of patients with fibroadenoma.

Presenting complaint	Fibroadenoma	
	No.	%
Lump	36	51.43%
Painful lump	23	32.86%
Pain	8	11.43%
Retracted nipple	1	1.43%
Discharge	2	2.86%
Total	70	100%

Discussion:

Breast pain, a nipple discharge and a palpable mass are the most common breast problems for which women consult a physician. Regardless of the type of breast problem, the goal of the evaluation is to rule out cancer and address the patient's symptoms. The extent of the evaluation required to accomplish this goal varies with the type of clinical problem and the patient's age and risk status. From the standpoint of morbidity and mortality, cancer is by far the most important clinical problem that concerns the breast today. Most benign neoplasms of the breast would have little clinical importance if it were not for the difficulty in differentiating them from cancer.[5]

In our study, females with young age group were mainly affected. Those in the 4th decade formed the highest incidence, followed by the 3rd decade. Many studies concluded that the

incidence of benign breast lesions begins to rise during the 2nd decade of life and peaks in the 4th and 5th decades, as opposed to malignant diseases, for which the incidence continues to increase after menopause, although at a less rapid pace.[2.3.6.7.8.9].

In our collection, the most common presenting symptom was a breast lump both painless and painful, followed by mastalgia with or without a mass. In a study by Merih Guray, the most frequently seen benign lesions of the breast were summarized as developmental abnormalities, inflammatory lesions, fibrocystic changes, and neoplasms.[10] Other studies stated that mastalgia was the commonest complaint in their collections.[11.12.] This is explained by the fact that our sample included those who had surgery to reach their final diagnosis.

Investigations carried out included ultrasound (U/S), fine needle aspiration cytology (FNAC) and mammography. This order of investigations in our collection was due to its availability in our hospital and due to the fact that most of our patients with a palpable mass in the breast. The physician`s clinical examination is important in determining the presence of a dominant solid breast mass with the suspicious clinical examination. It is the preference of the examiner to choose the investigation according to his clinical suspicion. In an article by Morrow[13] stated that the extent of imaging required for the evaluation of a solid breast mass depends on the age and risk status of the patient and the degree of clinical suspicion. Imaging studies are used to define the extent of a potential malignancy and to identify non-palpable masses elsewhere in the breast, findings that may influence the choice of local therapy. The use of breast-imaging studies in women less than 40 years of age follows evaluation by an experienced physician, while abnormalities detected on physical examination in women older than 40 should be regarded as possible cancers until they are documented to be benign.

U/S examination was carried out for 65(57%) patients. It was helpful in differentiating a cystic from a solid mass in most cases and in discovering impalpable masses. It is usually unsatisfactory for detecting early breast cancers owing to the inability to visualize microcalcification. It is suitable to start with this investigation to be followed by others according to the impression of the clinical examination.

Mammography was done in 20(17.54%) patients. It gives the sensitivity of 81.8% and specificity of 88.8%. Our sample is of small number due to its unavailability at times and that most of our patients were at young age group presenting with a palpable mass. Mammography is important in detecting breast carcinoma and examination of indeterminate mass and in screening programs.[5] It has a known false negative rate of approximately 10-20%.[14] Only 6.5 percent of breast cancers reported in the SEER (Surveillance, Epidemiology and End Results) database were diagnosed in women less than 40 years of age.[15] In one study, no malignant lesions were identified in 625 women 35 years of age or younger who underwent mammography for vague indications such as fibrocystic disease or lumpy breasts.[16] In women more than 40 years of age, diagnostic mammography is a standard part of the evaluation of a solid breast mass. Sixty two (54%) patients out of 114, had the investigation of FNAC. The sensitivity and specificity were 85% and 95.1% respectively. The accuracy rates for fine-needle aspiration alone are high. One review of 4,943 fine-needle aspirations noted 87 percent sensitivity for the diagnosis of carcinoma.[17] In another review of 3,545 such procedures, a 9.6 percent false-negative rate was reported.[18] Fine needle aspiration biopsy is an effective modality for the diagnosis of breast lesions. Lower rates of false positive and false negative diagnosis are achieved if the cytologist has personally performed the FNAB, prepared the smears and performed the microscopic interpretation.

Breast pain as a sole presenting symptom affected 8(7%) patients only. Some literatures stated that breast pain is the most common breast symptom causing women to consult primary care physicians and surgeons.[11] The high level of public awareness about breast cancer and the concern that mastalgia may indicate disease contribute to this trend. The lower rate in our study is because is concerned only with cases operated on.

Ten patients (8.8%) presented with nipple discharge. It is most often due to a benign process. This common breast problem has been reported in 10 to 15 percent of women with benign breast disease and in 2.5 to 3 percent of women with breast cancer. However, using an aspiration pump, secretions can be obtained from 50 to 80 percent of women without known breast disease.[19]

Fibroadenoma; It was the commonest type. Seventy patients (61.4%) in our collection had fibroadenoma. In a study by El-Wakeel, Fibroadenoma was the most common lesion of the breast and it occurs in 25% of asymptomatic women,[20] while a study from Nigeria[21] and Saudi Arabia[22], it constituted 59.1% and 47% of their collection respectively. Most of our cases were in the 3rd decade of life followed by the 4th decade. It is usually a disease of early reproductive life; the peak incidence is between the ages of 15 and 35 years. Conventionally regarded as a benign tumor of the breast, fibroadenoma is also thought to represent a group of hyperplastic breast lobules called "aberrations of normal development and involution"[23]

Fourteen patients (20%) in this collection had more than one mass. The same result was mentioned by Merih Guray.[10] Most of our patients had simple fibroadenoma i.e. 50(71.4%) patients. The rest i.e. 20(28.6%) patients had complex fibroadenoma. Complx fibroadenoma is that contain other proliferative changes of breast, such as sclerosing adenosis, adenosis, and duct epithelial epithelial hyperplasia. Merih Guray reported 50% of complex fibroadenoma.[11] Simple fibroadenomas are not associated with any increased risk for subsequent breast cancer. However, women with complex fibroadenomas may have a slightly higher risk for subsequent cancer.[24]

Fibrocystic changes; This is the most common presenting symptoms mentioned in literaturesThis process is observed clinically in up to 50% and histologically in 90% of women.[24] In our study, eleven (9.6%) patients had fibrocystic changes. This low number might be due to the fact that we select the main pathology as these changes might be present in association with other pathologies. The commonest presenting symptom was painful mass in 10(71.43%) patients.

Duct ectasia; Ten (14%) patients presented with duct ectasia. Five patients presented with a breast mass, 4 with nipple discharge and one with a pain in the breast. These are the usual presenting feature. There was no nipple retraction in our study. This is important as sometime a duct ectasia might present with clinical features of breast malignancy and on mammography shows microcalcificatiions, although there is no increase risk of breast cancer.[10]

Inflammatory disorders; Our collection includes 9(12.16%) patients only as we included only those managed as inpatient. Its importance is the possibility of mimicking inflammatory breast cancer.

Our collection included smaller number of other pathologies i.e. lipoma, fat necrosis, adenomas and phylloides tumors. Most of them presented as a breast mass which needs to be differentiated from carcinoma.[25.26]

More attention should be paid to benign breast diseases due to the demand by patients for investigation and treatment and possibility of premalignant disorders and increase risk of breast cancer in those patients and making it vital to differentiate benign diseases from malignant ones.

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