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Original Article

Pattern of Breast Diseases among Women Patients Attending Al-Beyda Medical Center

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ABSTRACT

Background and aims*. The pathology profile of breast lesions is still not well defined in El-Bayda City of Libya. Breast diseases are a diverse group, with benign neoplasms being the most common lesion. Knowledge of the pattern of such lesions can provide better understanding of their causes, natural history, and preventive strategies. This study was aimed to evaluate the pattern of breast lesions in patients who attended Al-Beyda medical center during Dec 2019 to Dec 2020.* ***Methods****. The study was enrolled with (234) women with breast problems. The outline of the breast lesions were tabulated and classified as inflammatory, benign, and malignant, in addition to other lesions like congenital, functional, and developmental ones.* ***Results.*** *The highest prevalence of breast disease was noted in the age groups of 21–40. Mastalgia was the most commonly presented diagnosis with 81% followed by mass palpable with 26% then inflammation 20.9% with significant difference for each lesion in different age groups. Traumatic and idiopathic had the highest percentages of inflammatory lesions (44.89 and 55.3%, respectively). The recurrence of a mass or cyst after intervention is also indicative of inflammatory lesions.* ***Conclusion****. The most common breast disorders that women seek medical attention for are breast pain, nipple discharge, and a palpable lump. The majority of women who have these symptoms have benign breast disease*

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INTRODUCTION

Breast cysts are a common diagnosis among women and one of the leading causes of referral to a breast clinic. They are the most prevalent cause of a breast mass or other breast complaints. Breast cysts are a type of fibrocystic illness of the breast, which is a benign disease [1, 2]. This disease process is a wide spectrum of both fibrous and cystic changes in the breast tissue. The simple breast cyst forms as an aberration in the natural breast development and is composed of an epithelium lined fluid-filled cavity within the surrounding breast parenchyma [1]. They can vary from small microcysts to large macrocysts and can be single or multiple. These cysts might be asymptomatic and only discovered by chance, or they can be symptomatic and cause lumps, pain, or nipple discharge. According to many studies, the lifetime prevalence of fibrocystic breast disease in women is estimated to be between 70% and 90% [2]. Non-proliferative, proliferative without atypia, and proliferative with atypia are the three types of fibrocystic alterations. While patients may be concerned about the pain and palpable tumor, pain as a symptom of breast cancer is extremely uncommon [1].

The etiology of breast cysts is unknown. However, most breast cysts are associated with the aberration of normal development and involution [3]. Cysts seem to form as a result of fibrosis in breast tissue development and subsequent failure in the continuous process of the lobule and terminal ductule formation [1]. This theory is supported by the regression of fibrocystic changes in postmenopausal women [4]. Fibrocystic changes are sometimes characterized by an increase in breast tenderness and/or pain just prior to menstruation, referred to as cyclic mastalgia. Breast cysts are usually discovered incidentally, with only 20% of cysts being found in women with cyclical mastalgia. The vast majorities of symptomatic fibrocystic alterations appear as a palpable breast lump rather than pain [5]. Furthermore, fibrocystic disease by itself is not strictly a risk factor for the development of breast malignancy. While a basic breast cyst is a benign, non-proliferative condition, atypia in fibrocystic disease has a malignant potential, and there are additional malignant cystic

lesions that can form and look quite similar in nature. The relationship between fibrocystic changes and breast cancer is complicated and controversial [6].

Upon the above, proper diagnosis, treatment, and management of breast cysts are essential. Ultrasound can aid in the diagnosis of some cysts and lesions that are indistinguishable in mammography due to fibroglandular tissues surrounding them [7]. The use of biopsy for the diagnosis of benign breast lesions is a serious issue as it leads to problems including fear of continuing treatment and repeating biopsy. In this regard, the use of ultrasound can eliminate unnecessary biopsies [8.9]. Although ultrasound was initially used for determining the cystic nature of a mass, its role has become more prominent in recent years. Considering the absence of ionized rays in this technique, it can be applied as a low-risk technique in pregnant and lactating patients [8].

Breast cancer is the most common malignancy among female population and a main reason of cancer mortality in women especially in less developed nations [10]. Most breast studies to date including Libya have focused on malignant breast diseases [11, 12]. Other studies have focused on the overall pattern of female breast diseases [13, 14]. The purpose of this study was to determine pattern of female breast diseases and its clinical features using ultrasonography (US) among women visited the breast clinic inside Al-Beyda Medical Center.

METHODS

Study design and patients

This study was conducted at the in breast clinic and radiology department, at Al-Beyda medical center, after taking approval from local ethical committee. A descriptive retrospective review was conducted for about a year period (December.2019 – December 2020), included about 234 women in breast clinic and radiology department in AL-Beyda, medical center.

Study flow

Breast US was performed by a radiologist with a high-resolution ultrasound instrument with a 7-12-MHz linear array transducer. The data from ultrasound examination was collected such as age, occupation, sex and clinical findings included indication of breast cyst and final outcome with follow up & recurrence after surgical presider results. Ethical clearance was obtained from the medical center.

Data analysis

The data were interconnected in Figures and Tables, with numerical data displayed as a number and a percentage. To find the significant difference between the observed and studied variables, the chi square was utilized in bivariate analysis to examine the relationship between categorical variables. To assess the association between the independent variables and the two populations, odds ratios (Odd) was performed using a logistic regression, and the 95% CI was calculated. All the data were analyzed with the statistics program Minitab software Version 17. The level of accepted statistical significance was $p < 0.05$.

RESULTS

During a year of study, a total number of ultrasound examinations of breasts referred to as breast pain or mass and inflammation process was 234 women. It is classified based on age, most common signs and symptoms, inflammation, trauma history, and relationship with fibroadenosis disease (fibrocystic).The patients' ages ranged from 10 years old to 80 years old. The mean age for all the patients at diagnosis was 30 years. In terms of age groups, (as each group consists of 10 year intervals), the highest prevalence was noted in age groups 21-30 and 31-40 years, followed by 10-20. The lowest prevalence was observed in the age group of 51-80 years (Figure 1).

Overall, 234 patients, frequencies of lesion characteristics obtained from ultrasound reports were outlined in Table 1, which includes mastalgia (pain), mass, inflammation process, nipple change, and retraction), and shows significant differences between unilateral and bilateral. These symptoms were diagnosed as unilateral and bilateral as follows: Mastalgia was the most frequently presented diagnosis in 190 (81%) of cases, which were found in unilateral and bilateral 80 (34%) and 110 (47%), respectively. The 2nd symptom was mass palpable with 60 cases, 25% of them were unilateral and 4.3% of them were bilateral. Inflammation was found in 49 cases, 20.9% of which were unilateral and 10.7% bilateral. The rest of the symptoms were found as history of trauma with 22 cases, nipple discharge with 20 cases, and skin discoloration with 10 cases.

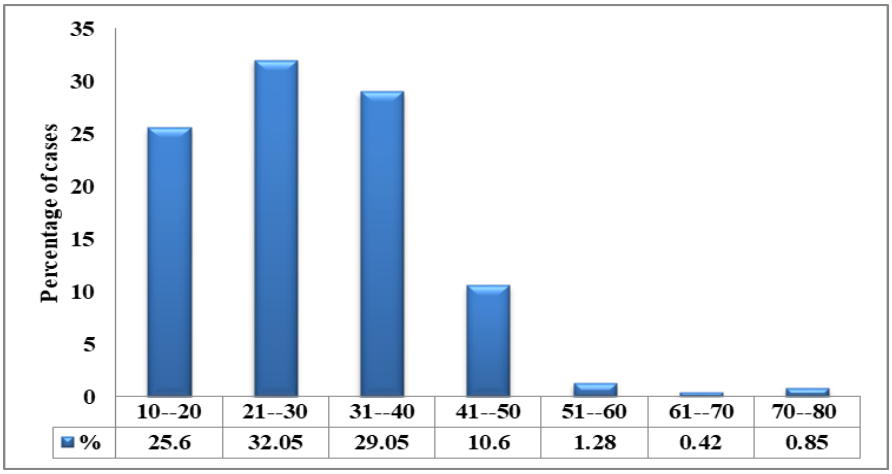


Figure 1: Percentage of age distribution for 234 cases from 10 to 80 years old. (Upon Pearson Chi-Square = 0.103, P-Value = 0.999)

Table 1: Characteristics of lesions observed in ultrasound in unilateral and bilateral

Lesions observation	Presence in Unilateral. No. (%)	Presence in Bilateral. No. (%)	Odds ratio	P. Value
Mastalgia	80	110	0.915	0.62
Mass palpable	10	50	0.252	0.001
Nipple discharge	20	0	51.55	0.006
Skin discoloration	10	0	26.41	0.02
Nipple retraction	0	0	1.257	0.9
Inflammation	24	25	1.208	0.53
History of trauma	17	5	4.278	0.005
Total	151	190		

In Table 2, the correlation between previous lesion characteristics and age groups was illustrated. Upon Chi-Square, there was a significant difference for each lesion in different age groups. A high percentage of cases with mastalgia and mass palpable were found in the age group from 10 to 40. Meanwhile, a high percentage of cases with nipple discharge and h/o of trauma were found in the age group of 14–50 years old.

Table 2: Correlation between different lesion characteristics and age groups among 351 diagnosis

Age (Years)	10-20 No. (%)	21-30 No. (%)	31- 40 No. (%)	41-50 No. (%)	51- 60 No. (%)	61-70 No. (%)	Total
Mastalgia	45(23.7)	58(30.5)	63(33.2)	20(10.5)	3(1.6)	1(0.5)	190
Mass palpable	30 (50)	16 (26.7)	10 (16.7)	4 (6.7)	0 (0)	0 (0)	60
Nipple discharge	0 (0)	0 (0)	5(25)	14(70)	1(5)	0(0)	20
skin discoloration	0(0)	3 (30)	2 (20)	4(40)	1(10)	0(0)	10
Nipple retraction	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0
Inflammation	5(10.2)	20 (40.8)	12 (24.5)	8 (16.3)	3(6.12)	1(2.04)	49
H/O of trauma	4 (18.2)	2 (9.1)	4 (18.2)	10 (45.5)	1(4.6)	1(4.6)	22
Total	84 (23.9)	99 (28.2)	96 (27.4)	60 (17.1)	9 (2.6)	3 (0.8)	351
P. Value	Pearson Chi-Square = 121.774, P-Value = 0.000						

In Table 3, the correlation between the presences/absences of (mass lesions and cystic lesions in fibroadenosis with different age groups among 234 cases was shown in Table 3. About 39% of patients had a fibroadenosis out mass and a cystic lesion, with the majority being between the ages of 21 and 30. Fibroadenosis with mass & cyst was represented by

14%, most of them in the age group (10-20). Meanwhile, cystic lesions alone were represented by 25% of them, most of them at age (10-20).

Table 3: Correlation between presences/absences of (mass, cystic) in fibroadenosis with different age groups among 234 cases, Number 0f cases. (%)

Age (Years)	10-20	21-30	31- 40	41-50	51- 60	61- 70	Total
Fibroadenosis without mass & cyst	20 (21.5)	43(46.24)	28 (30.11)	2 (2.2)	0 (0)	0 (0)	93
Cystic lesion	18 (30)	10(16.7)	17(28.3)	15(25)	0(0)	0(0)	60
Mass lesion	10 (21.7)	13(28.3)	13(28.3)	7(15.2)	2(4.4)	1(2.2)	46
Fibroadenosis with cystic lesion and mass	12(34.29)	9(25.7)	10(28.6)	3(8.6)	1(2.9)	0 (0)	35
Total	60 (25.6)	75 (32.1)	68 (29.1)	27 (11.5)	3 (1.3)	1 (0.4)	234
	Pearson Chi-Square = 40.905, P-Value = 0.000						

Inflammation cases were found in 49 cases that were distributed among different age groups, as shown in Table 4. 20% of these cases were classified as cystic lesion alone, while 38.77% were classified as mass lesion alone, with the majority of them being between the ages of 21 and 30. Presence of trauma and idiopathic was found with significant deference among 49 cases which diagnosis with inflammations in fibroadenosis (Table 5). In term of presence history of traumatic with inflammation was found to have 44.89%, while idiopathic was represented by 55.3 %.

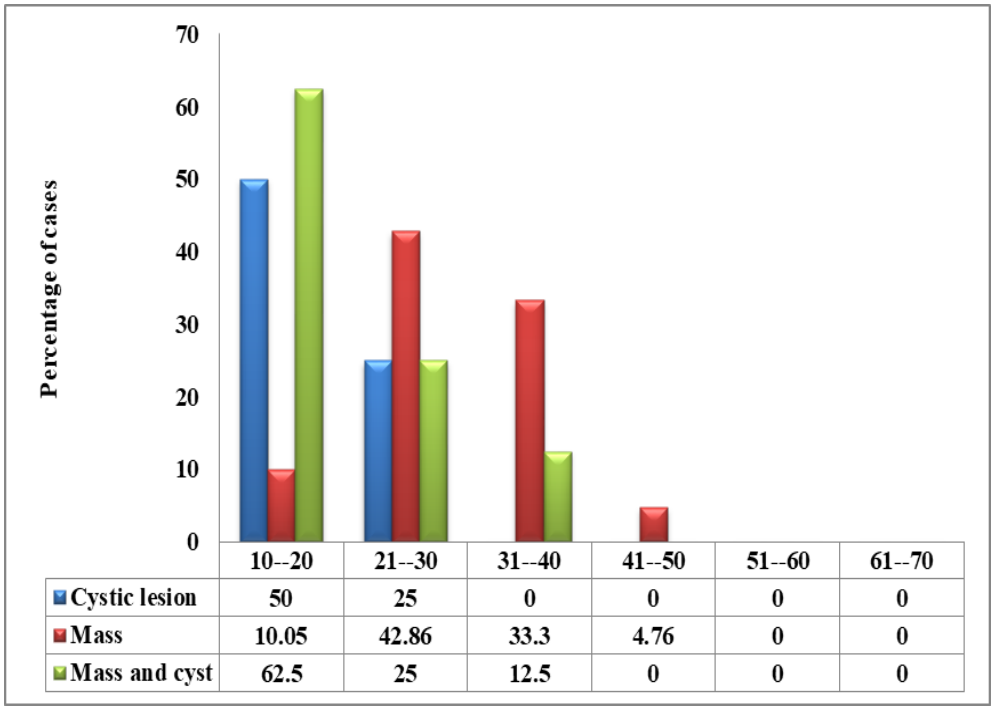
The correlation between the recurrence of mass and cyst after intervention with age groups was presented in Figure 2, and shows significant deference. 20 cases out of 60 cases were recurrences with cystic lesions. In addition, 21 of the 46 cases were recurrences with mass lesion. 8 cases out of 35 cases were recurrences of cystic & mass lesions. The majority of cases were found in people aged 21 to 30.

Table 4: Correlation between inflammations in fibroadenosis with different age groups among 49 cases, Number 0f cases. (%)

Age group	10-20	21-30	31- 40	41-50	51- 60	61- 70	Total
Inflammation	5(10.2)	20(40.8)	12(24.5)	8(16.3)	3(6.12)	1(2.04)	49
Cystic lesion	3(15.8)	6(31.6)	5(26.3)	5(26.3)	0 (0)	0 (0)	19
Mass lesion	0 (0)	7(46.7)	4(26.7)	1(6.7)	2(13.3)	1(6.7)	15
Cystic lesion and mass	2(13.3)	7(46.7)	3(20)	2(13.3)	1(6.7)	0 (0)	15
	Pearson Chi-Square = 37.785, P-Value = 0.000						

Table 5: Correlation between inflammations in fibroadenosis with presences of trauma and idiopathic among 49 cases, Number 0f cases. (%)

Inflammation	Trauma. No. (%)	Idiopathic. No. (%)	Total
Only cyst	5 (26.32)	14 (73.68)	19
Only mass	7 (46.67)	8 (53.33)	15
Mass and cyst	10 (66.7)	5 (33.3)	15
	Pearson Chi-Square = 33.777, P-Value = 0.000		49



	10--20	21--30	31--40	41--50	51--60	61--70
Cystic lesion	50	25	0	0	0	0
Mass	10.05	42.86	33.3	4.76	0	0
Mass and cyst	62.5	25	12.5	0	0	0

Figure 2: Correlation between recurrence of mass and cyst after intervention with age groups among 49 cases (Upon Pearson Chi-Square = 33.777, P-Value = 0.000).

DISCUSSION

Breast lumps are one of the most prevalent reasons for women of reproductive age to attend the hospital. When a breast lump arises in this age range [1, 2], strong feelings and emotions are evoked [1-3]. The majority of benign breast lesions were found in women of reproductive age up to 40 years in the current study, which revealed a substantial association between age and fibrocystic lesions. Furthermore, the link between cystic lesion and fibrocystic breast lesion was shown to be stronger in the 20-year-old age group, whereas mass increased with age, supporting the hormonal explanation [5]. These findings are consistent with breast data from certain Arab nations, such as Lebanon, Jordan, Palestinians, Egypt, and Libya, which indicated that the average age of presentation is around 30-50 years, with higher percentages of younger-aged individuals [11, 12, 15].

According to the current findings, mastalgia was the most common diagnosis in both unilateral and bilateral cases, followed by mass palpable and inflammation. These findings backed with a study that found mastalgia is more frequent in premenopausal women than postmenopausal women [5, 16]. The most common cause of nipple discharge is a benign procedure. In 10 to 15% of women with benign breast illness, this common breast condition has been described [17, 18]. In terms of inflammatory disorders discovered in this study, the most common age group for breast fibroadenosis illnesses with inflammation was 21-30 years old, and it was highly related to idiopathic. These findings were corroborated by research conducted in Saudi Arabia [14], Iraq [19], and India [20].

This study found a link between fibroadenosis out mass and cystic lesion in 39 percent of the participants, the majority of whom were in the age bracket of 40 to 50 [21-30]. Many studies demonstrate a high lifetime prevalence of breast illness in women, with over 70% of all women experiencing fibrocystic alterations at some point in their lives, with 20% of these women being symptomatic and 10% -30% developing sclerosing adenosis [21, 22]. In the United States, it is estimated that 7% of all women may acquire a palpable breast cyst at some point in their lives. Breast cysts are most common in women between the ages of 30 and 50. The incidence of cyst development increases throughout these years then drops dramatically afterward. As cyst development is related to hormone levels in the body, most benign cysts disappear, and new cysts stop developing a year after menopause. However, corresponding to this study cystic was reported with low percentage after age of 50 year.

Only ultrasonography results were evaluated in this investigation. Ultrasound accuracy and sensitivity were previously thought to be 97 percent and 93 percent, respectively, while mammography accuracy was 87 percent and 57 percent [23].

When ambiguous and malignant imaging findings are taken as positive, ultrasonography outperforms mammography in detecting invasive cancer [23].

This study has some limitations, such as a history of fibroadenosis. A comprehensive history of the presenting complaint, a description of the pain and its relationship to the menstrual cycle, any recent trauma to the area, nipple and skin changes, and/or nipple discharge should all be included in a proper clinical evaluation. It should also include a detailed history of previous medical and surgical issues, as well as family and social history, current medications, and medication allergies. Menarche age, menopause, and any family or personal history of breast cancer should all be investigated. This is followed by a complete physical examination, which should include checking for palpable lymph nodes in the breasts, axilla, neck, and chest [24].

CONCLUSION

In conclusion, the most common breast disorders that women seek medical attention for were breast pain, nipple discharge, and a palpable lump. The majority of women who have these symptoms had benign breast disease. Breast pain is a rare presenting symptom of cancer, and imaging investigations should only be used in women who meet the standard screening criteria.

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Disclaimer

The article has not been previously presented or published, and is not part of a thesis project.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

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