Comparison between the Patterns of Common Breast Diseases Presenting as Breast Lumps in Pregnant and Non-Pregnant Married Women

[1]Zena kassim Mohamed, [2] Imad Wajeeh Al Shahwani, [3]Najim Issa

ABSTRACT

Background: Breast lump is one of the most common prevalent complaint of patients attending breast clinics.

Objective: To determine if there is any change in the pattern of common breast, diseases presenting as breast lumps between pregnant and non-pregnant women among patients attending Al-Elwiya Breast Clinic.

Methods: This is a cross – sectional study, with convent's patient sampling setting in AL-Elwiya Breast Cancer Early Detection Clinic from 1st Feb. to 1st May 2018, we collected data from patients with breast lumps including the age groups, pregnancy status, parity status, previous breast diseases, hormonal drugs, menstrual cycle, breast feeding. Breast lump was examined, sonography and needle biopsy, and histopathology.

Results: This study involves 306 married patients, fibro adenoma was the commonest pathology in the age group 20-29 year-old (29.9%) followed by Aberration of Normal Development and Involution which was found mainly in 30-39-year-old age group (36.1%). Carcinoma found mainly in the >40-year-old age group (10.3%).

Aberration of Normal Development and Involution was the main pathology in non-pregnant patients (36.1%), in pregnant patients fibro adenoma is the commonest (35.7%).

Conclusion: The majority of breast lumps are benign. In pregnant women, fibro adenoma is the commonest, while in non-pregnant women, Aberration of Normal Development and Involution is the main cause of breast lumps

Keywords: - breast lumps and pregnancy, - fibro adenoma, - ANDI.

Corresponding author to:
[2] Assistant professor, Al-Kindy College of Medicine, Department of Surgery,

INTRODUCTION

A breast lump is a tissue mass, which develops and feels different from the surrounding breast tissue. It is a symptom or sign of a variety of conditions and sometimes goes unnoticed until identified during an imaging test.[1] most lumps are not cancerous but as approximately,10% of breast lumps ultimately lead to a diagnosis of breast cancer [2].

Fibro adenoma is the most common benign tumor of the breast. It occurs most frequently in women between 18 and 35 and account most common cause of Breast tumors in women under 25 year [3].

Aberration of Normal Development and Involution (ANDI) is a type of benign breast disease; represent the most common lesions of the breast occur between the ages of 20 and 50 and decreases progressively after menopause [4].

Mastitis is an infection of the tissue of the breast that occurs most frequently during the time of breastfeeding. Other causes of infection include chronic mastitis due to specific microorganisms is rare [5].

Mammary duct ectasia usually occurs in premenopausal women around 45 o 55 years because of obstruction of the lactiferous ducts by inspissated luminal secretion [6].

Fat necrosis is a benign disease involving adipose tissue in the supporting stroma of the breast resulting in the formation of round, firm lumps. It is more common in women with large breasts, particularly in women who are obese. The cause may be related to ischemia and trauma (accidental or surgical).[7] the clinical importance of fat necrosis is that this may present as a hard mass that can be suggestive of carcinoma on physical examination as well as radiologic studies [8].

Malignant breast lump: Carcinoma of breast has become the major public health problem

among females and male in developing as well as developed countries [9].

During pregnancy and lactation, a woman's breasts had several physiological changes. These changes can be attributed to various hormones; such changes may hinder the interpretation of physical and medical imaging examinations of the breasts. It is important to know that most breast lesions that are diagnosed during pregnancy are benign; however, the different diagnosis of breast cancer is challenging during this period.10 Breast begins to change under the influence of estrogen, progesterone, from the mid-term in the first trimester of pregnancy. Particularly, by the influence of estrogen, the blood vessels show remarkable growth, and lobules are proliferated [11].

Objective: To determine if there is any change in the pattern of common breast, diseases presenting as breast lumps between pregnant and non-pregnant women.

METHODS

This is a cross-sectional study conducted in the center of Early Detection of Breast Cancer Clinic at Elwiya Maternity Teaching Hospital in the period from 1 February 2018 to 1 May 2018.

The sample of this study targeting married women aged (15-55) year with breast mass counseled the above center. The sample collection was randomized. After exclusion criteria, the patient accepted to be member in the study group were 306. A questioner paper was completed and retained back to the researcher (response rate 91.3%).

The questions were made to explore socio demographic information, identify risk factors associated with breast lumps and the outcome of the breast lumps. These questions include: the age groups, pregnancy status, parity status, previous breast diseases, hormonal drugs, menstrual cycle, breast feeding. Characteristics of Breast lump, sonography and needle biopsy, and histopathology also included.

The exclusion criteria were: Rare breast diseases (T.B., actinomycosis, syphilis, sarcoma, Paget's disease …..Etc.)

Collected data were loaded into IBM /SPSS V24 software. Descriptive statistic was presented through frequency distribution tables, mean and standard deviation plus graphical presentations for analytic statistics, chi square test was used to find out associations between related variables. P- Value less than 0.05 was considered as discrimination point for significances

Ethical consideration

The research proposal of the study was approved by the scientifically ethical Comity in Al Kindy College of medicine and ethical comity in AL- Rusafa health directorate, patient written consents was taken from each patient after full explanation of the aim of the study with ensuring them about the confidentiality of collected information and the collected data will be used for research purposes only.

RESULTS

A total number of 306 women were included in this study; they were divided into pregnant and non-pregnant groups.

Non-pregnant group includes 176 patients (57.51%) and 130 patients (42.48%) were pregnant.

The ages ranged between (15–55) years, the main age group was 30-39 years, 138 patients (38.6%).

The main complaint in 172 patients (56.2%) was painful mass, while painless mass was the complaint in 134 patients (43.8%).

A history of previous breast diseases were mentioned by 62 patients (20.3%), other 244 patients (79,7%) denies any previous breast diseases. 96 patients (31.4%) gave history of hormonal therapy weather (pills and or injections), while other 210 patients (68.6%) do not using hormonal therapy. Menstrual cycle was regular in 258 patients (84.3%), while 48 patients (15.7%) suffering from irregular menstruation.

Age of marriage was less than 20 years in 100 patients (32.7%), while other 206 patients (67.3%) were more than 20 years when get married.

226 patients (73.9%) mentioned breast-feeding, while other 80 patients 26.1% did not have breast-feeding. Table 1.

Fibro adenoma was diagnosed in 98 patients (32%), ANDI in 96 patients (31.4%), mastitis in 44 patients (14.4%), carcinoma 36 patients (11.8%), traumatic disease (traumatic fat necrosis and breast hematoma) in 20 patients (6.5%), and ductal ectasia in 12 patients (3.9%).

Table 2 showed the association between studied groups and type of lesion, in non-pregnant group ANDI involved 70 patients (39.7%) followed by fibro adenoma 40 patients (22.7%), while in pregnant group fibro adenoma involved 58 patients (44.6%) followed by ANDI 26 patients (20%).

Regarding age group table 3 showed that fibro adenoma was found mainly in the age group 20-29 years, 46 patients (39%). ANDI were more in the age group 30-39 years 52 patients (37.7%). Fibro adenoma presented as painless mass in 72 patients (41.9%) and ANDI presented as painful mass in 70 patients (52.2%).

Table 1: Distribution of patients according to studied variables

	Character	No.	%
Group	Non pregnant	176	57.51
	Pregnant	130	42.48
Age groups	<20years	10	3.3
	20-29	118	38.6
	30-39	138	45.1
	40> years	40	13.1
Complaint	Painful mass	172	56.2
	Painless mass	134	43.8
Previous breast diseases	Yes	62	20.3
	No	244	79.7
Hormonal drugs	Yes	96	31.4
	No	210	68.6
Menstrual cycle	Regular	258	84.3
	Irregular	48	15.7
Menarche	Early	96	31.4
	Normal	210	68.6
Age of marriage	<20 years	100	32.7
	=>20 years	206	67.3
Breast feeding	Yes	226	73.9
	No	80	26.1

Table 2: Associations between studied groups and type of lesion

		fibro adenoma		ANDI		Mastitis		carcinoma		traumatic		Ductal ectasia		P v
		No	%	No	%	No	%	No	%	No	%	No	%	
Non-pregnant	176	40	22.7	70	39.7	24	13.6	20	11.4	12	6.8	10	5.7	0.001
Pregnant	130	58	44.6	26	20	20	15.4	16	12.3	8	6.2	2	1.5	
P Value		0.001		0.019		0.188		0.298		0.744		0.144		
Total	306	98(32%)		96(31.4%)		44(14.4%)		36(11.8%)		20(6.5%)		12(3.9%)		0.001

Table 3: Associations between the age groups and type of lesion

		fibro adenoma		ANDI		mastitis		carcinoma		traumatic		Ductal ectasia	
		No	%	No	%	No	%	No	%	No	%	No	%
Age groups	<20	4	40.0	2	20.0	4	40.0	0	0.0	0	0.0	0	0.0
	20-29	46	39.0	30	25.4	26	22.0	2	1.7	10	8.5	4	3.4
	30-39	38	27.5	52	37.7	14	10.1	22	15.9	8	5.8	4	2.9
	>40	10	25.0	12	30.0	0	0.0	12	30.0	2	5.0	4	10.0
P Value		0.165		0.163		0.001		0.001		*0.735		*0.104	

DISCUSSION

A breast lump is a mass that develops in the breast; most breast lumps are benign (non- cancerous) [12] .

Detection of breast lumps that develop during pregnancy and lactation is difficult for the clinician due to the hormonal and physiologic effects on the breast during pregnancy. During pregnancy, a woman's breasts face several physiological changes. These changes can be attributed to various hormones, which may also cause vascular hyperplasia and hyperplastic lobules. Such changes may hinder the interpretation of physical and medical imaging examinations of the breasts [10]. It is important to note that most breast lesions that are diagnosed during pregnancy are benign; however, the different diagnosis of breast cancer is challenging during these periods. [13]

In this study most of breast lumps are benign, this result in agree with a study Which did Jennifer K, LittoN MD, Gligorov J, et al (2012) [14] who found that of breast biopsies during pregnancy were benign do. Also in this study fibro adenoma affects mainly the second decade (20-29 years) this is in agreement with Jennifer K, LittoN MD, Gligorov J, et al (2014) [14] who found that fibro adenoma affects mainly the second and third decade of life.

In this study, fibro adenoma occurred in about half of the patients as a cause of breast lump in pregnant women, this in agreement with a study done by Langer A, Mohallem M, Stevens D, et al (2014) [12] and in agreement with Vashi R, Hooley R, Butler R, Geisel J, et al (2013) [15] This result can be explained by the effects of hormones on the growth of the tumor.

Also in non-pregnant women fibro adenoma came after ANDI as the main cause of breast

lumps, this is similar to what had been found by Maruf AM, Ahmed Z, Islam MR, in Bangladesh (2017) [16], and Nwafor cc, Keshinro so, in Nigeria (2015) [13].

Fibrocystic disease (ANDI) in pregnant women group found in 26 patients (20.2%), form the second cause of breast lumps as in a study done by Langer A, Mohallem M, Stevens D, et al, (2014) [12]. This result can be explained by steady level of hormonal changes during pregnancy and the absences of monthly cyclical changes of hormones aberration that occurs in non- pregnant patients. One study against this rational finding was mentioned by Harirchi I, Karbakhsh M, Kashi A, et al, in Iran (2015) [17] he observed that fibrocystic disease is more common than fibro adenoma.

In the present study, mastitis and breast abscesses found in third order as a common type of benign breast lesions presents as breast lumps, it involved 44 patients (14.4%) with no statistical significant change between pregnant and non-pregnant women. This finding is in contrast to what was revealed by Aziz NJ. In Kirkuk (2008) [18], a difference that may be attributed to sampling bias and social economic effect, as mastitis and breast abscess are more common in breast feeding females in poor society.

Also in this study, mastitis in pregnant group occurred in 20 patients (17.9%) is more common than non-pregnant group 24 patients (12.4%), this is in agreement with a study done by Son E, Oh K, Kim E. (2006) [19].

Carcinoma in pregnant women at this study forms 16 case (14.3%) is more common than non-pregnant group 20 case (10.3 %), this in agreement with a study done by Genin AS, Lesieur B, Gligorov J, et al (2012) [20].

Duct ectasia, which is a periductal mastitis affects major lactiferous ducts with presentation of sub-areola painful mass, found 2 patients (1.8%) in pregnant vs 10 patients (5.2%) in non-pregnant group%) with no statistical significant change between pregnant and non-pregnant women, this is in agreement with a study done by Syed A. Hoda MD, Edi Brogi MD, et al (1997) [21].

CONCLUSION

There is a statistically significant change in the pattern of breast lump in pregnant women, as fibro adenoma comes first as a cause of breast lumps while in non – pregnant group ANDI is the main cause of breast lumps.
Fibro adenoma is the main cause of breast lump in the age group 20-29 year.
ANDI is the main cause of painful very especially with late age of marriage.
No statistically significant changes were noted between pregnant and non-pregnant patients as regard to mastitis, traumatic and duct ectasia cases.

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