Women Breast Diseases in Karbala
Epidemiology and Workup

Adnan A. Al Helli*, and Ali A. Ali*

*Medical collage. University of Karbala

Abstract

Background*;* Sixteen percent of women who are 40-70 years old consult the primary health clinics for breast symptoms, 4% of them are expected to have breast cancer. The cure rate is over 95% when the early breast cancers are properly treated at time.

Objectives*;* The epidemiology of women Breast diseases and the clinical workup to detect early breast cancer in Karbala.

Method*;* Retrospective analysis of the workup carried out for the surgical breast cases attending the surgical units and the EBCD center of Karbala health services, from10[th] October 2001-10th October 2005.

Results*;* Total case number was 3634. Sixty percent had inconclusive criteria

The complaints were; breast pain in 67%, Mass in 57%, Nipple Discharge 10.7% and Breast Ulcer in 1.8% of the cases. The registered breast cancer cases were 46, they were advanced.

US examinations were 2017; 48.5% had Breast Masses (75%solid&25% cystic), the negative tests; 49.5% and 2% were equivocal.

 Mammography exams; 157.

FNA Cytology exams were 190; conclusive in 61% and positive suspected cancer cells in 9.5%. There were 110 ND Cytology exams," none was positive".

Conclusion*;* the routine work of **EBCD** needs revision and activation of its objective. **The diagnosed cases of breast carcinoma were late. Nipple Discharge Cytology** is of no use in screening and diagnosing breast cancer, **FNAC** is independable in designing breast cancer treatment. There is a need to popularize the interventional radiological investigations and the Breast cancer Screening program.

Keywords: Karbala, Early Breast Cancer Detection, Breast Carcinoma, Nipple Discharge Cytology.

الخلاصة

تمـهيد :ستة عشر بالمائة من النساء في سن 40 -70 سنه يراجعن مراكز الصحة لأعراض في الثدي .4% من هذه الشريحة يحتمل إصابتهن بأورام الثدي الخبيثة. نسبه الشفاء من هذا المرض أعلى من 95% إذا اكتشف المرض وعولج في مراحله الأولى.

الأهداف : وبائية أمراض الثدي وتقييم الطرق السريرية للكشف المبكر عن سرطان الثدي في كربلاء.

الطرق : تحليل الجهود المبذولة للنسوة المراجعات للمركزالمتخصص في الكشف البكر عن سرطان الثدي وأمراض الثدي الأخرى المعالجة في الردهات الجراحية للفترة من 10-10-2001لغاية10 -10-2005 .

النتائج : عدد المراجعات الكلي 3634 : 60% منهن حالات ذات معلومات موثقه. كانت الأعراض كالآتي: الام67%, عقدة الثدي 57%, إفرازات الحلمة 10.7% و قرحة2017 الثدي 1.8% . عدد حالات سرطان الثدي 46 حاله, مع49.5 % معظمها حالات متأخرة

فحص للثدي بالأمواج الفوق صوتية2017:منها 48.5% عقدة, (75% صلدة و25%كيسية).النتائج السالبة49.5%. الفحوص الخلو,ية الوخزية190. 61% منها ذات دلالة و 9.5%ذات مؤشر سرطاني.

تم اجراء 110 فحص لإفرازات ألحلمه الخلوي جميعها كانت سالبة أو غير دالة.

الاستنتاج: طريقة عمل مركز الكشف المبكر عن سرطان الثدي بحاجة للتفعيل.. إصابات سرطان الثدي المكتشفة متقدمة. لا جدوى من الفحص الخلوي لإفرازات الحلمة, لا يعتمد الفحص الخلوي الوخزي لعقده الثدي في تعيين مستوى الانتشار و نوع العلاج لسرطان الثدي. يجب إدخال الفحوصات ألتداخليه وتفعيل برامج الفحوصات المسحية الدورية للإناث المحتمل إصابتهن بهذا المرض.

الكلمات المفتاحية: كربلاء,الكشف المبكر عن سرطان الثدي,سرطان الثدي,الفحص الخلوي لإفرازات الحلمة.

Introduction

Breast symptoms and signs are common problem in clinical practice, about 16% of women between 40 and 70 years attending the primary care clinics present with breast symptoms, four percent of these symptoms result in the diagnosis of breast cancer[1] . Five percent of biopsy specimens in the path labs are of breast lesions, 26% of these breast lesions are usually malignant[1]. The benign breast lesions are usually simple diseases, even though some of these lesions are associated with a rising risk of breast cancer.[1,5,6]

Breast cancer is responsible for 32% of the cancer burden in women, even though its true etiology is still unknown. One of every eight to nine women will develop breast carcinoma by the age of 90. Breast cancer is the most common cause of death in women aged 40-49 with a mortality rate of 20%[5,8] .

Most of the breast carcinomas are salvageable if they are diagnosed and treated in the "insitu" stage with a cure rate of (>95%).[5]

Nowadays, the published articles and reports from the developed countries point to increase rate of both breast carcinoma insitu and cure rate of breast cancer[9]. This upgrade resulted from better health education, cancer screening programs and the understanding of the genetic basis of breast cancer [10,8]

The Early Breast Cancer Detection Center (EBCDC) in Karbala was first established on October 2001. Its objective was to screen the risky women for developing early breast cancer.

Objectives

Epidemiology of women breast diseases and work-up evaluation of Breast carcinoma in Karbala.

Patients and methods

The included patients were females with breast symptoms attending the Early Breast Cancer Detection center and the Hossain Hospital Surgical units. Patients had unrelated diseases or had inconclusive data excluded from the study. The period was a consecutive four years extending from 10 October 2001 to 10 October 2005. The patients were referred by surgeons, practitioners, or by other clinical units.

The evaluation included:
Patient's basic data, referral, complaints, clinical notes, investigations, and diagnosis.

The investigations carried out were:
1-Ultrasonic examinations.
2-Mammographic examinations.
3-Fine Needle Aspiration cytology.
4-Nipple Discharge cytology examination.
5-Histopathology examinations.

Results

I-EPIDEMIOLOGY;
During the period of the study, the number of patients attended the EBCDC were (3477) with 157 cases (admitted to the HHS units without being registered in the EBCDC),
The total studied cases 3634.
The included cases were; 2198, (60.5%).
(Age range 1-88 years, mean 35.0, SD ± 10.9).

Most patients referred by health professionals and clinical centers but no patient was referred by the women civil organizations.

The leading symptoms were in the following sequence; pain, lumps, nipple discharge, and ulcers.

A-Pain; was a symptom in 1584 patients (67%), the pain characters were of the following categories:-

1- Cyclical, was in 270 cases (17%).

2- Non-cyclical, was in 966 cases (61%).

3- Non- characterized was in348 (22%).

Over half of the non-cyclical pain no etiology was found, followed by extra mammary, trauma, infections, cystic mastalgia, and lastly advanced breast carcinoma.

Table 1 Pain categories

Types of pain	No.	%
A-Non cyclic pain Extra mammary238, 24% Mastitis 41, 4. 3% Abscess24, 2.4% Traumatic106, 11% Cysts 6, 0.6% Solid benign masses 9, 1% Duct ectasia10, 1% Post operative 17, 1.8% Breast cancers- 6 , 0 .6% Unknown cause 510, 52.5%	966	61
B-Unknown character	348	22
C-Cyclic pain	207	17
Total	1584,	100

B-Breast masses (table 2)

There were 1245 breast masses, 1186 of the masses, (95.3%) were benign, 46cases (3.7%) were malignant and, (1%) was without notifications. (Mass size range 2-7cm).The lesions were multiple in 14%, and Bilateral in 5 %(fig 2)

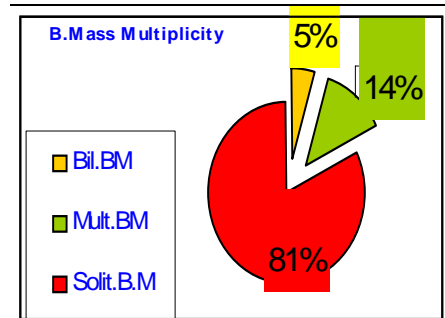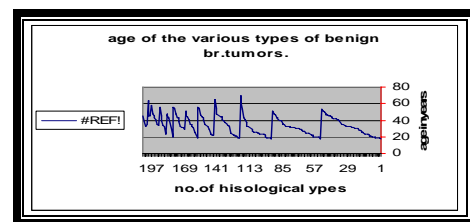There were250 biopsy specimens resulted in 18.5% malignant, and 81.5% benign lesions.

Fig 2 lumps multiplicity

-Malignant breast masses;

There were 46(3.7%) "Malignant" breast cases, (Age range 20-87 Years, mean 58 SD± 21.6). Forty cases underwent mastectomies in HHS. Six of the diagnosed cases missed.

(Fig. 3). Age distribution of 204 benign breast masses. From left to right; fibrocystic diseases, fibro adenoma, Fibroadenosis, Phylogenic masses.

The majority of the registered cancerous types were infiltrating ductal carcinoma 35 (76%). One case was carcinoma insitu. (Table2).
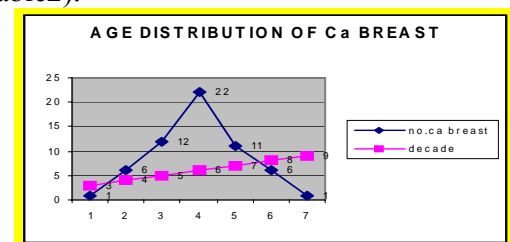

Fig. 4.age. Distribution of ca. breast.

-Benign breast masses; There were only 204 (17%) case out of 1186 non malignant masses which had specific clear pathological diagnosis documented in the local Path.Lab. (Age range17-69 year, mean32.3, SD±10.93). Age distribution of the benign

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Table 2, Breast masses categorizations.

Breast masses:		no	%
Total		1245	100
A- Benign lesions		1186	95.5
Path. diagnosis 204/250			
1	Fibrocystic changes	79/204	39%
2	Inflammatory	46/204	22.5%
	Pyogenic,22 Ductectasia,11 Mamm. cysts 6 T.b. 02 Granulamatous mastitis 05		
3	fibro adenoma	42	20
4	Sclerosing adenosis	15	3
5	Duct papilloma	10	5
6	Lipoma	6	3
7	Fatty necrosis	4	2
8	Lactating adenoma	2	1
B- Malignant lesions; (46/25biopsies):- Histological types and(universal rates*)		46	3.6
1	Infiltrative duct carcinoma.*(NST) 79% of invasive	43	73.7
2	Lobular carcinoma.*10% of invasive	4	9
3	Carcinoma in situ both types *20% screened 5%non screened	1	2.25
4	Papillary carcinoma*1%	1	2.25
5	Mucinous carcinoma* 2%	1	2.25
6	Paget's disease of breast	1	2.25
7	Occult breast carcinoma	1	2.25
8	Inflammatory carcinoma	1	2.25
9	Phyllodes sarcoma	1	2.25
C- Unknown pathology		13	1

mass types is shown in fig.3 .

The masses were categorized according to the histopathology results into (table 2):

1- Fibrocystic changes; 79cases (39%), these included:

-Fibrocystic disease; 64.5%.
(Age range18-52   mean age 32.41±12.93).
-Fibroadenosis; 35.5%.
(Age range 17-69, mean 29.78 SD ±12.41).
-Infections; 22 cases.

Less common conditions included: -

1-Sclerosing adenosis.
2-Duct papilloma.
3-Lipoma
4-Fatty necrosis
5-Lactating adenoma

C-Nipple discharge (ND):-

There were 235, patients (10.7%) had induced or spontaneous (ND), 105 of them had specific characters (table3).   Forty-eight of them (46%) were bloody or serous.

One-hundred thirty cases (55.4%) were without specific characters. Thirteen cases (5.5%) had clinically palpable mass.

Five cases of the 46 breast cancers associated with bloody ND. Three cases of the bloody-serous ND (1.3%) associated with duct papillomas.

Table 3 nipple discharge types.

Nipple Discharge				No.	%
1	Determined type			105	44.6
	Types		No.	%	
	1	Watery opaque	045	43	
	2	Bloody or dark red	040	38	
	3	serous	008	7.5	
	4	turbid	006	6	
	5	green	006	6	
	Total		105	100	
2	Undetermined type			130	55.4
	Total of Nipple Discharge			235	

D-Breast ulcer; (Table4)

There were 41 cases, (1.8%). Twenty three percent of them located around the nipples, three cases were cancerous ulcers.

Table 4 .breast ulcer categories.

Type of breast ulcer		No.	%
1	nipple ulcer or crack	23	56
2	Infection breast ulcers	12	29.3
3	Cancerous ulcers	03	7.3
4	miscellaneous	03	7.3
Total		41	100

Π-Investigations

A-Ultrasonic examinations;

There was 2017 breast US Examinations;
The number of patients with ultrasonic masses was 979, (48.53%); 734, (75%) solid and 254 (25 %) were cystic or complex cystic. The mass negative US results were 996 (49.38%), two of these US negative mass, finally appeared cancerous lesions. Equivocal US results 42cases (2%), three of these equivocal cases proved cancerous.
There were 19 cases in which the ultrasonic picture were consistent with malignant configurations, they were proved by histological examination being true malignant mass.

B- Mammography;

The mammography examination was inconstantly available, the total examinations were 348,(15.8%). There were 157 (45.11%) mammographic lesions; 13 (3.7%) were consistent with breast carcinoma. The mammography negative tests were 191 (54.88%), three of them proved cancerous later on.

C-Fine needle aspiration cytology;

This test was not always available, the number of tests carried out were 190 (8.64%). The results were conclusive in 116, (61%). The non- conclusive were 74 cases (39%). Eighteen tests were consistent with malignancy and open biopsy requested.

D-Nipple discharge cytology;

There were110 tests including various discharge types, all the results came negative or non-conclusive. One smear contained "atypical cells", opened biopsy proved carcinoma.

(Table5); nipple discharge smears examination,

ND smears number	110
Number of positive cancer cells	000

Discussion

1-EBCDC:

The patients age range, referral, infection lesions, and the late cases of cancer point to a misunderstanding. The objective of this project is to screen the high-risk women and the discovery of breast cancers in its sub clinical stages, this center actually is converted to an outpatient breast clinic.
The incidences and the leading symptoms of breast conditions were consistent with that of the published studies. Except that, we are lacking the mammographic asymptomatic lesions [1].
The symptoms/malignancy association, were 0.6% with non-cyclic pain (Vs 3.6%), 18.5% with histologically examined masses (Vs 26%) [1,] 10.8% with suspicious ND, and 7.3% with **breast ulcers, therefore any of these significant breast symptom deserves investigations.**

2-Pain:

The *cyclical t*ype was in 17%; But 25% of the examined specimens were "fibrocystic changes" ("ANDI" Aberration of Normal Development and Involution); table 1, it is the known etiology of the periodic pain, in contrast with many studies[1, 2,] 10% of women (30-55 year old) have this compliant. They need just reassurance, unless associated with discrete mass or cancer risk.[10]
The ***non-cyclical*** pain incidence was high [11]; there were high rate of breast infections, (Table-1).

Women cancer phobia, relates symptomatic Peri-mammary pain to their breast. However, most o f these cases were middle age women they had got the opportunity to check their breasts.

On the other hand, the six advanced cancer cases with pain may reflect the ignorant attitude to delay the surgical consultation until the lesion become advanced, they do not respect painless lesion.

3-Discrete breast mass:
it was the second frequent compliant, as in published studies [12]. The discrete breast masses may include; inflammatory, proliferative and non-proliferative benign neoplastic, "with or without atypia", and carcinoma.

Of these lesions, the inflammatory category was over scored (22.5%Vs 1%) ,the reason is that, one half of these cases were of bacterial lesions, "referral of infection cases to a specialized breast cancer center, for no reason is logical", Infection is an emergency condition with no registered increasing cancer risk[13].

The summed multiplicity and bilateral lesions of the breast masses were 19% (fig.2). It is reasonable, if we consider the common fibro adenoma (10-15) and lobular carcinoma (table 2), some fibrocystic change cases of lumpy bumpy breast may mislead the examiner to regard these ill defined nodulareties as multiple lumps[2, 3].

4-Breast malignancy:
The rate of breast cancer in the path lab series, (18.5%) was lower than that of Barton rate of (26%) [3]; the detected cancers with palpable masses were 3.7% Vs 4% [3]. These differences are due to technical reasons," to detect more lesions, prepare better facilities". The age incidence peak of the bell curve was around 50 year; there is a right shift, in" Brigham women Hospital"series[14]. Our Women life span is shorter (WHO /women life expectancy /2002). The infiltrative duct carcinoma was 73.75%, it is approximating

the published rate 79%. The pathological term have been changed to "infiltrative duct carcinoma of No Special Type "(NST)"[15, 16]

The specific cancer types; infiltrative lobular carcinoma 9% compared to 10% published rate, ductal and lobular carcinoma insitu 2.5%, was halved the rate in non-screened women .In the screened women the rate of insitu carcinoma detection is (15-20%), "Ductal CIS >80%, and >20% Lobular CIS 19".

Proper management of these sub-clinical cases associated with cure rate of over (95-97%) 7.

5-The nipple discharge (ND):
Five cases (11%) of the carcinoma cases had bloody ND .The patients ages were around 60 year, the mean rate should be 18.5%[1,6,17]. The non bloody and the non spontaneous ND is non- cancerous[16].   When the leading symptom of breast carcinoma is nipple discharge without palpable mass, 50% of the proved carcinomas are of the insitu stage[1, 6, 17], proper investigations of the ND like guided periareolar Core Needle Biopsy and Contrast Ductogram are the update investigations.

The rate of ductal papilloma was lower than that of carcinoma 6%.

6-Breast ulcers: the benign nipple ulcers were accounted for more than half of this category, followed by infection ulcers.

There were three late carcinomas presented as ulcers, one was (bedwian),deeply ulcerated, and hugely infested with larvae, the complaint was feeling of vibrating pricking pain, the patient didn't care for the deadly offensive smell or the other unsightly effects, pain was the leading symptom.

Investigations
-Mammography;
Only 15, 8%, of the study cases had mammographic examinations that limit its evaluation. The test was on the clinician request and availability bases. There were

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13 proved mammographic cancer cases out of 157 mammographic mass lesions; many cancer cases had no mammography tests. Mammography is the corner stone in the screening program, it raised the carcinoma insitu detection incidence from <5% to 20% [14]. It is insensitive for young women breast lesion. young breast is dense, unfair to load mammography. "MRI is the ideal test for young breast[1]".

-Fine Needle Aspiration cytology;

 Although it is valuable, this test was conclusive in 61%.Sixteen cancer cases of the proved 46 cancers (<40%) had positive or highly suspicious. Not all the cancer cases got FNAC. When the test was available, commonly requested, its main value is to differentiate cystic from solid mass. For no reason it is very highly diagnostic, most authors do not recommend definitive treatment based on cytological[15, 16] examinations alone, the presence of carcinoma cells in the tissue aspirate, cannot define the invasiveness of the lesion.

-Nipple discharge cytology;

from 110, nipple discharges cytology examinations, all were negative or non-conclusive. There is a discussion to include the induced nipple discharge in the routine screening program [10] with arguments on the validity of this examination; most authors do not validate this test. They recommend *the periareolar large core needle biopsy* and *the contrast Ductogram to* evaluate the nipple discharge [16]. We stopped requesting this test.

-Histopathology;

This examination is still the gold standard in the exact diagnosis of the breast lesion; carcinoma will not miss if surgical biopsy done.[13]

After FNAC examination; open biopsy is indicated in the following criteria:

1- When the lesion is not cystic i.e. solid mass.
2- The cyst fluid is thick and bloody tinged.

3-There is a residual mass after aspiration.
4-There is re-accumulation of the fluid within two weeks.

-Large core needle biopsy

It is still unavailable. When become popular it shall reduce the operative burden of the open biopsy operations; it is a good tool in excising a non-palpable mass either carcinoma in situ with mammographic or ultrasonic guidance [16].

There is a wide controversy in the terminology and classification of the breast pathological categories, these controversies may mislead the clinician in interpreting the reported.

Surgeons sometimes consider the clinical and operative breast cancer staging.

Unfortunately, we lack the experience of the sentinel lymph node biopsy; [19]

There are some obligatory practical factors canceled many important point including "surgical staging part of breast cancer".

Conclusions

The project of early detection of breast cancer is highly essential in saving and downing stage the breast cancer cases, both the organization and preparations of the center deserve revision and supportive concerns.

Almost all the diagnosed breast cancer cases herein were in late stages.

The Nipple Discharge cytology test is fruitless in the screening as well as the diagnosis of breast cancer.

Definitive breast cancer management should not depend totally on the Fine Needle Aspiration cytology results, although it can be useful test in many related conditions.

The health authorities should be concerned to offer the resources in this educational field as well as in the improvement of the health registry units. We hop that this study will open a door for more refined prospective studies in the field.

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