



THE TRIPLE ASSESSMENT OF THE BREAST MASSES

General Surgery

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ABSTRACT

BACKGROUND : cancer of breast is by far the most important clinical problem that concerns the breast today and it is the commonest form of cancers in female, when detected early and given the proper treatment can be cured .

OBJECTIVE:

- 1) To evaluate breast lumps problems and work of breast clinic in AL- Najaf teaching hospital
- 2) To evaluate the triple assessment (C/E,Ultrasound,mammogramand fine needle aspiration cytology) in detection and diagnosis of breast lumps .

PATIENT AND METHODS: A prospective study of 80 patients with breast lumps visiting breast clinic in Al-najaf teaching hospital during the period from 27th of January 2018 to 26th of November 2006.

DATA ANALYSIS ; Regarding the age, marital status ,parity ,family history of breast lump and incidence of malignancy, menarch, menopause, contraceptive pill.

PHYSICAL EXAMINATION : lump ; site,size , consistency,fluctuation,nipple discharge, nipple retraction.

After detail history and thorough examination, the clinical impression categories to (benigne,inconclusives,malignant)

Results :Benign breast lumps occupying the majority of cases (90%) and occurring mostly below age of (40 years) with peak incidence between 21-40 years (70.8%) , while the malignant breast lumps seen in (10%) of the total cases with two peak, one at 41- 60 years (50%) and the other above the age of 70 years (37.5%) most of them present lately , stage II and III . the breast cancer proportionate inversely with the parity and lactation while the family history has little association .

CONCLUSION :breast clinic is a mandatory center regarding early and proper management of breast cancer a among patients complaining from breast lumps and give a good chance for proper follow up .

KEYWORDS

breast lump , breast cancer , u/s , x-ray MMG , FNAC .

INTRODUCTION

breast lumps are a thickening of breast tissue commonly found in women of all ages some are easily detectable through, while others are indiscernible except through u/s and MMG(1) .the discovery of breastlump either self detected or identified by a clinician is a common ,often distressing occurrence for many women Regardless the age of womens,aclinically suspicious mass must be evaluated even if MMG is normal(2) . Any patients who presents with abrest lump or suspicious of malignancy the diagnosis should be made by triple assessments, include clinical evaluation ,radiological and a sample taken for either cytology or histopathology study(3).a normal breast may feel lumpy from mammary glands and others tissues lying under skin, the breast goes through many normal hormonal changes which may play apart in the etiology of breast cancer ,which is the commonest malignancy in women's(4) .Woman's should be aware of lump in their breast ,benign breast lump are " normal " ,they usually do not required extensive treatment since their cells will not spread out Side the breast the benign breast lumps are classified into fibrocystic disease and fibro adenoma (5) . Theirs a tendency for women with lumpy breast to be rendered unnecessary anxious and to submitted to multiple biopsies because of lack of clinical courage of her convection (6) . Because the breast cancer prognosis is closely related to the time of diagnosis it would seen to hop that a population screening program which could detected tumor before the patient notice may reduce mortality from breast cancer , a number of studies have been shown that screening by aMMG in women over age of 50years will reduce mortality by to30%, while its of little value in younger age < 35years,because breast tissue more(7) . MMG is soft tissue x-ray ,the dose is 0.1 centigray ,2veiv required craniocaudal(CC view),provides better visualization of medial aspect of breast and mediolateraloblique(MLO view) ,image axillary tail and upper outer quadrant ,it can detected the irregular or clustered calcification which may increase suspicious of malignancy .screening in early diagnostic unite ,detect breast cancer early and cure the excellent result .MMG can use as guide for needle biopsies . the

examination perform every 3 years for less 30 years old and yearly for 40years old .Randomized study (prospective)of MMG screening confirmed 40% reduction of stage IIand III cancer in screening population with 30% increase over all survival rate second to MMG is the U/S which show benign mass as smoth,well defined margin with weak internal echoes and cystic lesion show well circumscribed with smooth margin with echoes free center and in cancers show irregular outline with acoustic enhancement and U/S use as guide for FNAC ,core needle biopsy and its highly acceptedby patients but doesn't lesion < 1 cm in diameter(5) .

Almost (8-9%) of all women will develop cancer of breast in their life time, the incidence of cancer of all types is (27%) thus one out of every four women with malignant disease will have cancer of the breast(8) .for example over 40,000 American women die in USA each year ,women in general have one in eight or nine chance of developing cancer and each year about 180,000 new cases ,and its is very rare under the age of 40 ,and cancer of breast arising in old age is frequently slowly progressive (9) .the growing cooperation between surgeons and oncologist and the advent of breast screening program are promising to improve the out come of the lethal disease (10) .

Patients and methods:

All patients visited al-najaf breast clinic for period of 9months from 1st of February 2006 to the 1st of November 2006 with breast lump have been including in this study the historical data have been collected and all patient have been thourouly examined (general and locoregional examination for both breast and axilla) . U/S : we use sonoline versa for the U/S . A 7.5 MHZ linear – array transducer probe was applied to the skin after adequate lubrication . scans were taken both longitudinally and transversely of both breast and axillae in supine position also we use color Doppler U/S for visualized the vasculature of the lesion and the result were interpreted by same radiologist.MMG : we used giotto ,(Italy) IMS, with max. KV 32 and min. KV 23 with tow CC view and

MLO view were interpreted , the result by same radiologist and then investigated by U/S and MMG which are readied by the same radiologist.

FNAC method, we used 23gauged needle with disposable syringe 10CC, the lump fixed with the thump and finger with adequate antiseptic technique and local anesthesia ,the needle introduce into mass with multiple puncture (10 times), the aspirated material smeared on slid immediately and fixed with 90%alcohol and stained with Eosin and haematoxilien stain to be readied by the same cytologist .

The cytological diagnosis of aspirate were categorized as fallow (22) Unsatisfactory : C0. : no ductal cells seen C1: scanty ductal cells consider in adequate for diagnostic purpose s.

Benign: C2: Adequate number of ductal cells without any atypia C3:benign breast disease with minor atypia Malignant: C4 : suspicious of malignancy including scanty malignant cells and will differentiated tumors. C5: univocal malignancy

Statistical analysis(22-,27) The result were analyzed statistically to determine the utility and desire ability of the triple assessment (C/E, FNAC and U/S) in diagnosing breast lumps certain statistical parameter were use which include :

- 1 false positive rate : is the rate of false positive in a positive result .
- 2 false negative rate: is the rate of false negative in a negative result
- 3 sensitivity : which represent the ratio of true positive result to all masses diagnosis as carcinoma i.e if the mass is carcinoma what isthe probability the test detect cancer .
- 4 specificity : which represent the rate of true negative result to all masses diagnosed as non carcinoma , i.e if the mass is benign what is the probability that the test conform benignity
- 5 predictive value of positive result which represents the probability that a mass is carcinoma when the result of the test is positive
- 6- predictive value of negative result : Which represent the probability that a mass is benign when the result of the test is negative .
- 7- Accuracy : The fraction of the test results that are correct .

RESULT

During this study time 1000 patients visited breast clinic ,80 patient of them with breast lump(8%) ,72 cases (90%). Were benign lumps and 8 cases (10%) were malignant lumps as shown in table (1).

Their was significant difference regarding the age distribution of benign and malignant lumps , the benign lumps were highly seen in age group from 20-40 years old ,while the malignant lumps affecting 5th and 6th decade of life and increase with advancing age as shown in table(1). Table(1):the age incidence including both the benign and malignant masses

Age (years)	benign		malignant		Total	
	NO.	%	NO.	%	NO.	%
<20y	7	9.7	0	0	7	8.75
21-30y.	26	36.1	0	0	26	32.5
31-40y.	25	34.7	0	0	25	31.25
41-50y.	9	12.5	2	25	11	13.75
51-60y.	1	1.3	2	25	3	3.75
61-70y.	2	2.7	1	12.5	3	3.75
71-80y.	2	2.7	3	37.5	5	6.25
total	72	100	8	100	80	100

Although it was statically not significant ,the left breast was involved by carcinoma more than the right but interesting finding that the right one involved more than the left in benign cases as shown in table (2) .

Table (2) : distribution of breast lump according to the side of breast

Types of breast lump	Right breast no.	Left breast no.	Both
Beig	83	32	2
Malignant	3	4	1
Total	41	36	3

With malignant condition, 37.5 % of female , were in the premenapousal stage of their life, while only 13.8 of benign condition were in post menopausal stage of their life, table(3)

Table (3):distribution of benign and malignant breast lesion in relation to menopause .

Menopause	Total		Benign		Malignant	
	No	%	No	%	No	%
Pre-	65	81.25	62	86	3	37.5
Post-	15	18.75	10	13.8	5	62.5

The most common breast lumps are fibro adenoma and fibroadenosis as shown in table (3).

Table (4):types of benign breast lumps affecting patient visited al-najaf breast clinic.

Type of benign lump	NO	%
fibro adenoma	30	41.6
Fibroadenosis	22	30.5
Fibrocystic disease	12	16.6
Duct actasia	5	7
Hydated cyst	2	2.7
Tuberculosis	1	1.3
Total	72	100

Invasive ductal carcinoma was the common type of malignancy seen in our patient, while other types seem less commonly as shown in table (5).

Table (5) :types of malignant breast lumps affecting patient visited Al- najaf breast clinic.

Types of breast cancer	Histopathological types	NO. of cases	
1	carcinoma in situ	Ductal carcinoma in situ 1	
2	Invasive carcinoma	Ductal carcinoma	4
		Lobular carcinoma	1
		Colloid carcinoma	1
		Tubular carcinoma	0
		Papillary carcinoma	1
3	other	Medullary carcinoma	0
		sarcoma	0

Most of carcinoma cases present themselves in stage 11 and 111 while stage zero,1 and stage 1V were less frequently as shown in table (6).

Table (6)staging of malignant tumors according to Manchester classification

Stage	NO.	%
0	0	0
1	1	12.5
11	2	25
111	4	50
1V	1	12.5
total	8	100

while the (62.5 %) Cases seen more frequently in unmarried patients reverses is true regarding malignant the benign condition in married cases (62.5 %) as shown in table (7) .

Table (7) : the relation ship between the marital status and breast lumps

Married state	Benign no.	%	Malignant no.	%
Unmarried	27	37.5	5	62.5
Married	45	62.5	3	37.5
total	72	100	8	100

Malignant cases have inverse relationship to patients parity as shown in table(8).

Table(8):the relationship between parity and number of cancer cases.

Parity(no. of children)	Number of cases
1-2	4
3-4	3
>5	1
total	8

Family history is positive in 4 cancer cases out of 8 cases.

Associated finding in history and clinical examination show that pain was presented in (56.2%) of total sample of this (59.7%)were in benign breast lesion and only (25%)were is malignant breast lesion , nipple retraction and history of smocking were only found in malignant breast

lesion (3.75%,1.25%) ,nipple discharge was found in 6 cases (7.5%), 5 were found in benign (7%) ,contraceptive pill and lactation were more in malignant breast lesion (37.5%,75% respectively .

Other associated finding and more details can be found in table (9).

Table(9):associated finding in history and clinical examination for patients in the study.

Associated finding	Total		benign		Malignant	
	NO	%	NO	%	NO	%
Pain	45	56.2	43	59.7	2	25
Nipple retraction	3	3.75	nil	nil	3	37.5
Nipple discharge	6	7.5	5	7	1	12.5
Skin change	12	15	10	13.8	2	25
Trauma	1	1.25	1	1.3	nil	Nil
Family history	10	12.5	9	12.5	1	12.5
Contraceptive pill	14	17.5	11	15.2	3	37.5
Lactation	14	17.5	8	11	6	75
smocking	1	1.25	nil	nil	1	12.5

The triple assessment (C/E,U/S,MMG and FNAC) was done to all patient and the result categories into 3 groups (inconclusive or suspicious, benign and malignant as in table(10).

Table (10):The Results to the total size sample 80 patients .

Result	C/E		U/S		MMG		FNAC	
	NO	%	NO	%	NO	%	NO	%
Benign	49	61.25	50	62.5	53	66.25	51	63.7
Inconclusive or suspicious	3	3.75	2	2.5	3	3.75	2	2.5
Malignant	28	35	28	35	24	30	27	33.7

The evaluation of triple test assessment can be categories as in table (11).

Table (11): summary of triple test assessment evaluation.

Result	C/E	MMG	U/S	FNAC
True positive(TP)	12	14	16	16
True negative(TN)	34	40	44	50
False positive(FP)	6	4	2	Nil
False negative(FN)	4	3	2	1
Sensitivity (S)	75%	82%	88.8%	94%
Specifity (SP)	85%	90.9%	88.8%	100%
Positive predictive value(PPV)	66%	77.7%	88.8%	100%
Negative predictive value (NPV)	89.4%	93%	95.6%	98%
False positive rate(FPR)	33.3%	22.2%	11%	Nil
False negative rate(FNR)	10.5%	6.9%	4.3%	1.9%
Accuracy(ACC)	82%	88.5%	93.7%	98.5%

DISCUSSION :

Discovery of breast mass , ether self – detected or identified by clinician was a common often distressing for many woman , although most detected breast masses were benign , so every woman presenting with a breast mass should be evaluated to exclude or establish a diagnosis of cancer (11) .for this reason we establish breast clinic in AL-najaf teaching hospital . Despite all available diagnostic facilities , (80-85%) of all breast lump found to be benign as , shown by foster RS. JR et al , (5) , this was coincided with our study in that the benign lumps constituted (90%) of breast lump and (10%) constituted malignant lumps , which is the same as the incidence of carcinoma in u.s.a (10%) of female population and also lower than the incidence in UK (12%) of female as shown by Bar-ton MB, et al (12). Most of our benign cases accruing in 3rd and 4th decade of life and this conceded with finding of myo clinic and evelyn B. perez .(2) . Carsenoma of breast extremely rare to be seen under the age of 20years and increasing gradually reaching a peak at 45-55 y of age and then sharply increasing for advancing age as shown by study done by cox CE ross M, salud which was similar to our finding (13) malignant cases have been seen more in left breast in our study which was comparable to evelyn B.perez . finding (14)most cases in our study where invasive ductal carcinoma and this similar to finding seen by foster RS JR et al (8). Delayed presentation of symptomatic breast cancer of 3 months or more was associated with lower survival rate . In England yet 20-30% of woman wait at least three months before consulting there general practitioner (GP) (15) .

This delayed presentation was much more evident in our patient whom

presented to there surgeon in the late stages (stage II &III) and this reflect bad prognosis in spite of adequate surgical treatment, this because of poor knowledge and association between doctors and people and poor safety situation .

Carcinoma appeared to be commoner in nulliparous women than multiparous and have breast fed as shown by powles T.J. and smith IE, this similar finding in our study , and this explained by the emotional and hormonal stability of such woman than those who were unmarried or low party and non lactated women (16) positive family history was statistically insignificant but in our study was higher in patients having breast cancer than those with negative family history and this similar with study done by Christopher R.B. merrite .M.D.,cdi (17). In our study we found that 1000 patient visited breast clinic in AL- najaf teaching hospital for period of 9months with 80 cases with breast lump compared while study was done by DR.hasan H.zeen about 3000patient visit breast clinic for period for tow years (2001- 2003) this declined in the number of the patient visiting breast clinic in our study due to alack of knowledge of the breast clinic work in AL-najaf teaching hospital by people and because of poor safety situation and poor hospital situation after last war.

The result in our study in triple assessment evaluation (specificity, sensitivity and accuracy) are the same result done by Dr. suzan klein study.

Triple test assessment :

In the present study C2 and C3 FNAC were regarded as benign while C4 and C5 were regarded as malignant, sensitivity for FNAC was 94%. K. Nakayama et al reported a sensitivity 92.4% if borderline cases were included (24).

D.J. Warwick et al reported sensitivity 94% if borderline cases were included this is similar to our study (25). Ideally the number of false positive should be zero. We reported to cases , which prove to be malignant and the aspirates were inadequate this observation confirms that technically unsatisfactory smear should be ignore completely ; either the aspirate should be repeated and that what have been happen (the 2nd aspirate proved that the masses were malignant and both patient have a modified radical mastectomy).It has been argued that ultrasound has a limited role in the diagnosis of breast carcinoma because its not a screening modality being unable to detect micro calcification which signify a sub clinical malignant in some patient our ultrasound sensitivity for carcinoma 88.8% the specificity and accuracy were 88.8%, 93.7% respectively D.J. Warwick et al reported sensitivity of 96.4% and specificity of 73.7% while Shimamotoke et al recorded sensitivity, specificity and accuracy rates of 89.3% , 84.8%and 85.6% respectively (26).

so the result were variable between the deferent studies this may be because of deferent machines used and deferent experience. Higher sensitivity was recorded by u/s than by C/E and almost similar to that of FNAC (table 11).

RECOMMENDATION AND CONCLUSION :

- 1- The large turnover of patients in a busy breast clinic necessitates efficient and reliable diagnosis to avoid unnecessary surgery and anxiety for the patient FNAC is seldom very painful , causes only minor bruises and can be used on all clinically palpable lesions regardless of size . Farther more, u/s is simple, non-invasive it yields additional information with out exposing the patient to radiation or any physical hazard . procedure is comfortable well –tolerated takes about 5-10 min, and can repeated therefore , C/E combined with FNAC and imaging test (the triple test) are complementary for the diagnosis of breast lesion.
2. the malignant breast lumps have the same incidence of occurrence among breast lump in general but fortunately breast cancer is still of low incidence in our community than the western country .
3. Our patient have the same age incidence of breast cancer to other countries ,but they present lately and these will increase the efforts to deals with such cases regarding both surgical procedure and costs with increasing the patients and family suffering ,so they need further information about the different types of breast cancer symptoms to assessed symptoms recognition ,as well as encouragement to seek medical advised and about benefits from greater awareness of benefit of early detection and reassurance about the improvement inequality of breast cancer care .
4. from the above, we have to concentrate on the benefit of the

- presence and activation of breast clinic in our society for early detection good and effective follow up of breast cancer to improve the out come of such increasing problem.
- the uses of triple assessment in the diagnosis of breast lumps patients have been very important in early detection.
 - In the present study we found that triple assessment is a sensitive , specific , accurate , simple , easy , fast , minimal invasive , low cost assessment system that can be done in the initial out patient visit with reaching the diagnosis in the same visit .

- the triple assessment , a thesis submitted to Iraqi commission in general surgery specialization By DR. hayder s. -AL-kawaz (2002).
- Nakayama K et al. evaluation of aspiration biopsy cytology and combined preoperative test in the diagnosis of breast cancer .surg. today JPNJ. Surg. 1995 ; 25: 404-408
- Warwick D.J et al ultrasound mammography in the management of breast cancer . Br. J.surg. 1988 ; vol.75:243-245.
- Shimamoto K ,Kaii O . diagnostic accuracy of breast sonography comparison among three deferent techniques. Nippon Zasshi 1991, Dec. ;51(12): 1425.
- john M.L.A. dictionary of epidemiology .oxford, 1983.

Because of all this we recommend that all patient with a discrete breast lump should be assessed by triple test of C/E FNAC and breast imaging

الخالصة

المقدمة :

سرطان الثدي يعتبر من أهم المشاكل لبومنا هذا حيث يعتبر من أكثر السرطانات التي تصيب إن . النساء حيث إن امرأة من كل عشرة نساء تكون مصابة بسرطان الثدي . التشخيص المبكر لهذا المرض هو الحل الوحيد لعالجه ومن ثم الشفاء التام الهدف من الدراسة هو تقييم عيادة الثدي في المستشفى التعليمي في النجف مع استخدام بواسطة الوسائل التشخيصية (الفحص السريري ، السونار ، أشعة الثدي ، والفحص الثدي وذلك لحل مشاكل أمراض (والتشخيص الرشف بالبر الدقيقة في الكشف

طريقة العمل :

فترة وهي بحث مستقبلي لدراسة ٨٠ حالة مرضية مصابة بورم الثدي من أذخت معلومات مفصلة عن تاريخ المرض وتضمنت هذه 2006/11/1 إلى 2006/2/1 في المعلومات كل من العمر ، الجنس ، الحالة الزوجية ، وتاريخ المرض (العائلة الخ

النتائج :

أورام الثدي الحميدة تشكل النسبة الأكبر حوالي ٩٠% وتحدث في عمر اقل من ٤٠ سنة بينما الأورام الخبيثة للثدي تمثل نسبة (سنة) وبنسبة عالية حوالي ٧٠,٨% بين عمر ٤٠-٢١ . بمر ١٠% في هذه الدراسة مع حدوث زيادتين ملحوظتين الأولى سنة وبنسبة حوالي ٥٠% والثانية أكثر من ٧٠ سنة وبنسبة ٣٧,٥% 41-60 تصنيف ومعظم هذه الحالات شخضت متأخرة وتشمل المرحلة الثانية والثالثة من المرض .

المناقشة :

عيادة الثدي أساسية والزامية ومهمة جداً للتشخيص المبكر والعلاج المناسب للمرضى المرضى المصابين بأمراض الثدي وكذلك يجب إن تعطى فرصة أكبر لمتابعة المصابين .

مفتاح البحث

الدقيقة عقدة الثدي ، سرطان الثدي ،سونار ، أشعة الثدي ،الرشف بالبر

REFERENCES :-

- Robin C.N.williamson ,Bruce .p.wax man .Breast disease in an aid to clinical surgery .6th ed.London,1998:205-218
- sand hva pruth MD M.D., division of general internal medicine ,detection and evaluation of palpable breast mass ,mayo clinic 2001 :75 (1):641-648.
- Kopahs DB .Breast imaging ,2nd ed.pheladelphia .pa :lippincott- Raven publishers :1998:428-429.
- Morrow M.the evaluation of common breast problem.Am.fam.phys.2000;61(1):2371-2378,2385.
- Schwartz S.I.F.,charles brunicaud ,M.D.,F.A.C.S.,Dana K. Anderson,M.D.et al. principles of surgery ,8th ed.:2005:455-456.
- Cady B; steel GD Jr; Morrow M.; et al .evaluation of common breast problem :guidance for primary care providers .cancer J.clin- 1998;48(1)49-63
- Dag D.et al. ultrasound in management of breast disease ,1st ed,2003;156-164.
- foster jr. harris JR; lippman ME; Morroqw M; os borne Ck ;. Diseases of the breast,2 nd ed. Philadelphia , pa: lippincott Williams and wilkins ; 2000 ;95-100
- Russell ; R.C.G. Williams N.S. the breast in bailyand loves short practice of surgery ,23rd ed , London,2000,749-772.
- benedetto – JC; Alora V.G; wytt – li. Accuracy of FNAC in the diagnosis of palpable breast masses : two years result of university affiliated community hospital , J- amsteeo path assoc. 1993 ;93(5): 585- 588.
- maeda –setal ; rapid diagnosis at the out patient clinic for breast tumor by FNAC. Nippon-IKA diayaku-zasshi. 1998;6(5): 416-420
- steinberg –JL .et al ; combined FNAC , physical examination and mammography in the dignosis of palpable breast masses : there relation to out come for woman with primary breast cancer. can-J-surg. 1996 ;39(4): 302-311
- AL-gul ali et al ; Turkish jornal of diagnostic and interventional radiology , 1st ed :2003; 15-17
- reston ; ACR standard for performance of breast ultrasound examination , American college of radiology , 1st ed,2001;389-392.
- burgree –C; hunter – M-s; ramiez .- A-J-Qualitative study of dely – among woman reporting symptoms of breast cancer . BR-J-G –pract. 2001DEC ; 51(473): 967-971
- AMR mohsen , kais abd EL-daeam and Mustafa AL-naser , kaser EL-Anie introduction in to surgery . VOL. ,3rd ed 2004; 287
- Christopher R.B .merritte ,M.D.cdi , 1 st ed. 1992,228-234
- statistical study of breast lump patient visiting AL-najaf breast clinic by DR. hassan H. zaine F.I.C.M.S. department of surgery , medical college AL-kufa university .
- Evolution of palpable breast masses ; suzan klean , M.D. southern illinois university school of medicine .
- role of cytological grading in management of breast lump .J.coll- physician .Inry – pak.2003 .
- investigation of breast mass , www.bmj/learning.com 2006 .
- Nicholson S, Sainsbury JRC ., wadhra V., Ned ham GK and fandon JR . use of fine needle aspiration cytology with immediate reporting in the diagnosis of breast disease .BR.J. surg. 1988, volume 75 , sept. 847- 850.