Open surgical breast biopsy

Ameer Kadhum Daher *

* Wasit University, Collage of Medicine, Department of Surgery General Surgeon , Al- Karama Teaching Hospital

خزعة الثدي الجراحيه المفتوحه

امير كاظم طاهر – جامعة واسط / كلية الطب

الخلاصه

تمهيد : الخزعه المفتوحه تعتبر المعيار الذهبي في انشاء او استبعاد سرطان الثـدي. النساء المشتبه بأصابتهم بسرطان الثـدي يـتم احـالتهم الـى خزعـة الثـدي لتحديـد مـا أذا كانت الافه حميده او خبيثه واذا ما كان هناك حاجه الى مزيد من العلاج مستقبلا.

الغرض: تحليل نتائج خزع الثدي الجراحيه المفتوحه ولفاصل زمني سنتين.

الاساليب: المرضـى الـذين خضعواألأستئصـال عقـدة الثـدي، استئصـال نسـيجي موضـعي واسـع او خزعـه جراحيـه لكتلـة الثـدي فـي مستشـفى الكرامـه التعليمـي فـي محافظـة واسـط للفتـره مـن كـانون الثـاني ٢٠٠٩ وخـلال كـانون الاول ٢٠١٠ تـم ادخـالهم فـي هذه الدراسه.

النتـائج: العـدد الكلـي للمرضـى سـبعون وعـدد الخـزع المفتوحـه سـبعون. متوسـط عمـر المرضـى ٣٢.٥ سـنه . ومعـدل عمـر المرضـى المصـابين بالسـرطان ٤٥.٢٥ سـنه . مـن السـبعون خزعـه الداخلـه % ٤٢.٨٥ كانـت سـرطانيه خبيثـه ، % ١٨.٦٢ اورام ليفيـه ، %15.70 مـرض ليفـي تكيسـي ، %4.28 كانـت ليفيـه تكاثريـه و كانـت %8.5 من نتائج نسيجيه اخرى.

الاسـتنتاجات: نسـبة الاورام الخبيثـه فـي الخزعـه المفتوحـه للثـدي تـزداد مـع العمـر لتصـل الـى قمـه فـي الاربعينيـات مـن العمـر . ونوصـي بـأن كـل النسـاء بعـد الاربعـين مـن العمـر واللـواتي لـديهن عقـدة الثـدي الملموسـه بـأن تستأصـل حتـى لـو كـان يـرجح كونهـا حميده.

مفاتيح الكلمات: عقدة الثدي، خزعة الثدي ، سرطان الثدي

Abstract

Background : open biopsy has been considered the gold standard in establishing or ruling out carcinoma of the breast. Women suspected of having breast cancer are usually referred for breast biopsy to determine whether the lesion is benign or malignant and whether further treatment is needed.

Purpose: to analyse the results of open surgical breast biopsies of 2 years interval

Methods: Patients who underwent lumpectomy, wide local excision and incisional biopsy of a breast mass in Al- Karama Teaching Hospital / Wasit

1

Governorate from January 2009 through December 2010 were included in the study.

Results: A total of 70 patients with 70 open biopsies were identified and analysed. The mean age was 32.5 years. Within the malignant group the average age was 45.25 years. Out of the 70 biopsies included; 30 (42.85%) were malignant,13(18.62%) were fibroadenoma,11(15.70%) were fibrocystic disease, 7(10%) were of duct ectasia, 3(4.28%) were fibroploreferative disease and 6 (8.5%) were of another pathology. **Conclusions:** The rate of malignancy in open breast biopsies increases with age reaching a peak in forties. We recommend that all women above the age of 40 presenting with a palpable breast lump to have their lump excised even though the lump is suspected to be benign.

Key-words: Breast lump, breast biopsy, breast cancer

Introduction

Carcinoma of the breast has imposed a major burden on the general surgeons worldwide and makes up a larger share of the total cancer cases in the developing world. It remains a primary cause of most of cancer deaths all over the world and continues to have a great impact on the patient's treatment and survival in developing countries [1]. The incidence of breast cancer appears to be increasing world-wide, the increase in Western countries is well documented and is paralleled by stable or declining breast cancer mortality. In non-Western countries accurate epidemiologic data is difficult to collect, but breast cancer may also be increasing in less developed regions of the world . In the Middle-East, breast cancer is frequently seen during the childbearing years. Studies on breast cancer rates and risk factors in the Middle-East are limited, but Egypt is thought to have the highest rates in the Middle-East with the increase being primarily between 30 to 60 years of age[2].

In Iraq, breast cancer is the commonest type of female malignancy, accounting for approximately one-third of the registered female cancers according to the latest Iraqi Cancer Registry. This shows that the breast is the leading cancer site among the Iraqi population in general, surpassing even bronchogenic cancer[3]. As proposed by the World Health Organization, early detection and screening, especially when combined with adequate therapy, offer the most immediate hope for a reduction in breast cancer mortality [4]. open biopsy has been considered the gold standard in establishing or ruling out carcinoma of the breast [5]. Women suspected of having breast cancer are usually referred for breast biopsy to determine whether the lesion is benign or malignant and whether further treatment is needed. Most women who are referred for breast biopsy do not have malignant lesions and do not require follow-up treatment[6]. It is common practice for women under 30 years of age who have palpable breast lumps to be managed conservatively provided that there are no suspicious features in triple assessment,

i.e. clinically, radiologically and on cytology[7]. A normal mammogram does not exclude the presence of a carcinoma as 5 percent of breast cancers are missed on population screening. Digital mammography and tomomammo-graphy are being used as more advanced techniques. Ultrasound is not useful as a screening tool and is highly operator dependant. It is particularly useful in young women with dense breasts to distinguish between a cyst and a solid lesion.MRI is an extremely useful to distinguish scar tissue from recurrence, it is the best imaging technique for breast which have had implants inserted. Fine needle aspiration cytology is the least invasive technique of obtaining a cytological diagnosis; the accuracy increases with the experience of the operator and cytologist. However , false – negatives do occur. A core biopsy gives a definitive preoperative diagnosis , differentiates between ductal carcinoma in situ and invasive cancer and allows the receptor status to be determined[8]. Until fairly recently, breast cancer was treated as a single deadly disease for which the most extreme treatments were justified. Egyptian physicians in 1600 B.C. recorded the use of cauterization to treat breast cancers. Extensive surgeries removing the breast and all the surrounding muscle and bone were used during the Renaissance period. A less extreme but still extensive surgery was later adapted by Halsted as the standard of care in the late 19th century. By the first half of the 20th century, clinicians had become aware that not all breast cancers shared the same prognosis or required the same treatment, and attempts were made to define characteristics that could reliably distinguish those tumors that required aggressive treatment from those that did not[9].

Patients and method

Patients who underwent lumpectomy, wide local excision or incision biopsy of a breast mass in Al- Karama Teaching Hospital / Wasit Governorate from January 2009 to December 2010 were included in the study. Exclusion criteria included excision of any recurrence, any procedures which have axillary dissection or clearance .

A total of 70 patients with 70 open biopsies were identified and analysed. Patients were sub-divided into six age groups depending on their age at the date of operation. They were below 20 years of age, between 20 to 29, 30 to 39, 40 to 49, 50 to 59 and those above 60 years old. The pathological reports were then grouped into six broader categories for the analysis. Fibroadenoma ,Fibrocystic changes (include fibrocystic disease, fibrosis fibroadenosis, sclerosing adenosis and cysts), duct ectasia , fibroproliferative disease (ductal hyperplasia and atypical ductal hyperplasia, Malignant includes (infiltrating ductal carcinoma, carcinoma in-situ (DCIS) and Paget's disease of the nipple) and others (granulomatous mastitis, lipoma and fat necrosis).

Ameer Kadhum Daher

Results

A total of 70 patients enrolled in this study, their age ranged between 16 and 70 years , mean age was 32.5 years. Within the malignant group the average age was 45.25 years, the age groups shown in table (1).

Out of the 70 biopsies included; 30 (42.85%) were malignant,13(18.62%) were fibroadenoma,11(15.70%) were fibrocystic disease,7(10%) were of duct ectasia, 3(4.28%) were fibroploreferative disease and 6 (8.5%) were of another pathology, table (2).

When all patients were subdivided into 6 age groups there were 7 biopsies in those below 20 years of age, 10 in the age group of 20 to 29 years of age, 16 in the age group of 30 to 39 years of age, 23 in the age group of 40 to 49 years of age, 9 in the age group of 50 to 59 years of age and 5 in those above 60 years old.

The overall incidence of malignancy was 42.85%. The incidence was zero in the those below age of 20 and in those between the ages of 20 to 29 and 11.3% (8/70) in those between the ages of 30 to39. In the age group of 40 to 49, the incidence of malignancy increased to 14.28% (10/70). The incidence of malignancy in patients 50 to 59 of age were 10% (7/70) and 7.14% (5/70) in those above 60 years of age .Table (3).

The final diagnosis of malignancy was invasive ductal carcinoma in 27 biopsies , in situ carcinoma in 2 biopsies and Paget disease in one biopsy. Table (5)

Table (1): the distribution of patients according to age groups

Age group	2009	2010	total
< 20	6	1	7
20- 29	9	1	10
30- 39	14	2	16
40- 49	9	14	13
50- 59	7	2	9
> 60	4	1	5
Total	49	21	70

Table (2): the distribution of patients according to histopathology

Histopathology	٢٠٠٩	٢٠١٠	total
malignant	21 (30%)	9 (12.85%)	30 (42.85%)
fibroadenoma	10 (14.30%)	3 (4.32%)	13 (18.62%)
Fibrocystic disease	9 (12.85%)	2 (2.85%)	11 (15.70%)
Duct ectasia	2 (2.85%)	5 (7.15%)	7 (10%)
Fibroprlolfitive disease	2 (2.85%)	1 (1.43%)	3 (4.28%)
other	5 (7.15%)	1 (1.43%)	6 (8.58%)
total	49 (70%)	21(30%)	70 (100%)

Table (3): the number of biopsies in each age group

Age group	Number of biopsies	percentage
< 20	7	10.00 %
20- 29	10	14.28 %
30- 39	16	22.86 %
40- 49	23	32.86 %
50- 59	9	12.86 %
> 60	5	7. 14 %
Total	70	100 %

Table (5): the incidence of malignancy in each age group

Age group (years)	number	percentage
< 20	٠	٠
20 - 29	٠	٠
30 - 39	٨	11.43 %
40 - 49	١٠	14. 28 %
50 - 59	٧	10. 00%
> 60	٥	5. 00%
Total	30	42. 85 %

Table (5): The final histopathology of the malignant biopsies

biopsy / Year	Infiltrative ductal carcinoma	In situ carcinoma	Paget disease	Total
٢٠٠٩	19	١	١	٢١
٢٠١٠	٨	١	٠	٩
Total	٢٧	٢	١	٣٠

Discussion

carcinoma of breast continues to be a major killer of women all around the world. The incidence and pattern of this disease, however, differ significantly between developed and underdeveloped countries [10]. It is extremely rare below the age of 20, but thereafter the incidence steadily rises so that by the age of 90 nearly 20 per cent of women are affected[11]. A number of studies have shown a rising incidence of advanced breast carcinoma in women of younger age group, this change is more marked in developing countries where many factors contribute in delayed presentation of the disease such as un-equal distribution of health care facilities, lack of knowledge about the disease, poverty, and social customs of the families avoiding women Exposure [12]. Many studies have found that breast lumps in those below 30 years old can be left alone provided all the three elements of triple assessment showed benignity[13], Studies carried out in younger women to find

out whether they prefer to be managed conservatively show conflicting results, Cant *et al* [14] found that only 25% of women chose non-operative management despite being reassured that it is safe to do so and a further quarter of these subsequently requested excision. In contrary, studies by Dixon *et al* [15, 16] showed that 90% of women under the age of 40 opted to be treated conservatively.

In this study, I found that most open biopsies were done in the younger age group with the mean age of 32.5 years old which is close to the finding of Char-Hong et al study [5] were the mean age was (32.6 years) and many of them were in the age group of below 30 years , the reasons behind that is many women are not comfortable with a breast lump even though assured that it is benign and the over enthusiasm of the surgeon in order not to miss the diagnosis of cancer .

 the main finding of this study that 42. 85% of the biopsies were malignant and within the malignant group the average age was 45.25 years which is lower than the average age of breast cancer patients in the Kurdish study [2] (47.4 year). Malignancy in this study start in the age group of 30-39 year ,which is similar to the Kurdish and Egyptian [17] findings but lower than the age specific incidence of the Jordanian [17], and reach a peak in 40- 49 which is earlier than the peak of Kurdish study which was in the age group of 55- 59 year. These result support previous Iraqi study in Baghdad, that approximately one third of the patients were diagnosed in their forties, where the peak frequency occurred, while an obvious decline was displayed after the age of 60 years [18]. This continuing trend for this disease to affect younger generations has been comprehensively illustrated in the Iraqi Cancer Registry [19]. WHO estimates revealed that approximately half of the cancers in the Eastern Medetrenian Region occur before the age of 55 and that the age standardized incidence rates of all cancers in this region is expected to double as risk factor exposure increases [20]. The next finding of this study was that fibroadenoma represent18.62% of the biopsies and this although not a low figure but it is still lower than the results of Char- Hong et al study (64%) reflecting the high percentage of young patients included in their study.

We concluded that, the rate of malignancy in open biopsies increases with age reaching a peak in forties.

we recommend that all women above the age of 40 presenting with a palpable breast lump to have their lump excised even though the lump is suspected to be benign. interventional programs need to be directed toward methods that will increase awareness of disease in young women and provide the best effective screening program in our region. Finally we recommend further multicentric studies about breast cancer in Iraq.

References

1. Arshad Mehmood Malik,Rafique Pathan,Noshad Ahmed Shaikh,Jawaid Naeem Qureshi,Khamiso Altaf Hussain Talpur. Pattern of presentation and management of Ca breast in developing countries. There is a lot to do. JPMA 60:718; 2010.

2.Runnak A Majid, Hazha A Mohammed, Heshu M Saeed , Banaz M Safar, Rekawt M Rashid et al. Breast cancer in kurdish women of northern Iraq: incidence, clinical stage, and case control analysis of parity and family risk. BMC Women's Health *2009, 9:33*

3. Iraqi Cancer Board. Results of the Iraqi Cancer Registry 2004. Baghdad, Iraqi Cancer Registry Center, Ministry of Health, 2007.

4. National Cancer Control Programs. Policies and managerial guidelines, 2nd. ed. Geneva, World Health Organization, 2002.

5- Ng CH, Taib NA, Yip CH. Is it necessary to excise all breast lesions? Experience from a university-based breast unit. Malaysian Family Physician. 2009;4(2&3):66-70

6- Wendy Bruening, PhD; Joann Fontanarosa, PhD; Kelley Tipton, MPH; Jonathan R. Treadwell, PhD; Jason Launders etal . Systematic Review: Comparative Effectiveness of Core-Needle and Open Surgical Biopsy to Diagnose Breast Lesions. Ann Intern Med. 2010;152:238-246.

٧- Watson G, Given-Wilson R. Probably benign palpable lumps in women over 50 - is surgery the only option. *The Breast*. 1999;8:48-50.[cross reference].

8- pradip K Datta, Christopher J K Bulstrode and B V Praveen. Bailey and love companion guide, MCQ and EMQ in surgery (2010), p. 387.Hodder Arnold, London .

9. S. Eva Singletary and James L. Connolly**.** Breast Cancer Staging: Working With the Sixth Edition of the AJCC Cancer Staging Manual. CA Cancer J Clin 2006; 56:37-47.

10.Agarwal G, Pardeep PV, Aggarwal V, Yip CH, Cheung PS. Spectrum of breast cancer in Asian women. World J Surg 2007; 31: 1031-40.

11-R.C.G. Russel, N.S. Williams and C.J.K. Bulstrode (eds). Bailey and Love's short practice of surgery (2000), 23rd edition, P.761 . Arnold publishers, London.

12.Forbes JF. The incidence of breast cancer: the global burden, public health considerations. Semin Oncol 1997; 24: S1-20-S1-35.

13- Watson G, Given-Wilson R. Probably benign palpable lumps in women over 50 - is surgery the only option. The Breast. 1999;8:48-50

14- Cant PJ, Madden MV, Coleman MG, *et al.* Non-operative management of breast masses diagnosed as fibroadenoma. Br J Surg. 1995;82(6):792-4

15- Dixon JM, Dobie V, Lamb J, et al. Assessment of the acceptability of conservative management of fibroadenoma of the breast. Br J Surg. 1996;83(2):264-5

16- Dixon JM, Clarke PJ, Crucioli V, et al. Reduction of the surgical excision rate in benign breast disease using fine needle aspiration cytology with immediate reporting. Br J Surg. 1987;74(11):1014-6.

17- Rennert G: Breast cancer. In Cancer Incidence in the Four Member Countries (Cyprus, Egypt, Israel, and Jordan) of the Middle East Cancer Consortium (MECC) compared with US SEER. Volume Chapter 8. Edited by: Friedman LS, Edwards BK, Ries LAG, Young JL. National Cancer Institute. NIH Pub No. 06-5873. Bethesda, MD; 73-81.

18- N.A.S. Alwan. Breast cancer: demographic characteristics and clinico-pathological presentation of patients in Iraq. EMHJ • Vol. 16 No.11 • 2010.

19 - Iraqi Cancer Board. Results of the Iraqi Cancer Registry 2004. Baghdad, Iraqi Cancer Registry Center, Ministry of Health, 2007.

20- Revised global burden of disease (GBD), WHO 2002 estimates. Geneva, World Health Organization, 2003 (http:// ww.who.int/healthinfo/bodgbd2002revised/en/ index. html, accessed 1 September 2009).