Non-Metastatic Breast Cancer : Clinical Presentation and Patterns of Surgical Treatment

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Abstract

Background : Breast cancer is the most common cancer of women. When breast cancer is detected and treated early, the chances for survival are better. Surgery is the most important treatment for non-metastatic breast cancer.

Objectives : The aim of this study is to review different clinical presentation and to evaluate types of surgical procedures and complications in treatment of non-metastatic breast cancer.

Method : During the period from Jun 1998 to May 2005, 93 patients with non-metastatic breast cancer were diagnosed and treated surgically in 2 hospitals in Baghdad (Hammad Shihab military hospital and Al-Kindy teaching hospital).

Results : Women constituted (98.93%), while men constituted (1.07%), with male to female ratio of (0.01:1). The peak incidence of non-metastatic breast cancer (25.8%) was at age group 51-60 years, while (60.2 %) of cases happened in women over 50 years of age. The right breast was the most common side affected, and the upper outer quadrant of the breast was the most common location affected by cancer. Painless lump (91.4%) was the most common symptom, and the hard lump was the most common sign (100%).

The highest frequency of cases was diagnosed in stage II followed by stage III, and invasive ductal cancer was the most common histopathologic type.

(87.1 %) of patients underwent modified radical mastectomy, while (12.9%) underwent breast-conservation surgery. Breast-conservation surgery carried higher incidence of recurrent disease than modified radical mastectomy (33.3% vs.13.6%).

Conclusion : The majority of patients with non-metastatic breast cancer were over 50 years of age, and the preponderance were diagnosed in stage II. Modified radical mastectomy may be preferable method for treatment as it carries a lower rate of local or distant recurrence than conventional breast-conservation surgery procedures.

Key words: Non-metastatic breast cancer, breast-conservation surgery, modified radical mastectomy, axillary surgery.

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Introduction

Among women worldwide, breast cancer (BC) is the most common cancer and the most common cause of cancer death [(1)]. Non-metastatic breast cancer (NBC) includes early breast cancer (stage 0,I,II) & locally advanced breast cancer (Stage III). It can occur without producing any visible or noticeable symptoms. There are several signs that can indicate BC like presence of the lump, skin dimpling or thickening, erythema or skin ulceration, recent nipple retraction, redness or scaling of the nipple, abnormal nipple discharge, and Peau d' orange, but most BCs present as a hard lump [(2)].

Surgery is the most important treatment for NBC [(3)]. The trend has evolved toward less aggressive surgery in early BC [(4)]. Breast conservation surgery (BCS) has become the treatment standard for early-stage BC [(5)]. Lumpectomy followed by breast irradiation continues to be appropriate therapy for women with BC, provided that the margins of resected specimens are free of tumor and an acceptable cosmetic result can be obtained [(6)]. The decision to have mastectomy or BCS should be carefully considered. The size, location, type of tumor, and the size of the breast are very important factors when choosing the best surgery to treat a woman's BC. A woman's psychological concerns, and her lifestyle choices should also be considered when decisions are made, because mastectomy changes body image and causes loss of normal breast functions with psychological effects.

Even when a woman survives, BC causes significant morbidity and disability [(7)] . Because of this and esthetic and symbolic value of the breast, BC has always been a source of severe distress to patients. After mastectomy they tend to worry about the effect of the operation on their appearance and relationships, whilst after conservative surgery women may remain fearful of recurrence [(2)] .

Methods

Thirty-nine (93) patients with NBC were diagnosed and treated surgically between Jun 1998 and May 2005 in 2 hospitals in Baghdad (Hammad Shihab military hospital and Al-Kindy teaching hospital). The age of the patients ranged 26 - 75 years. The follow-up period ranged from 10 to 78 months.

After full history and proper clinical examination, tests such as urinalysis, routine haematological study with full blood count and peripheral blood film

morphology, liver and renal function tests, blood sugar estimation, chest radiograph and breast ultrasonography (some times with mammography), and abdominal ultrasonography performed for all patients

Various tests such as calcium and phosphorus evaluations, skeletal radiograph for symptomatic areas, C T scan and MRI according to the suggestive symptoms were advised for some patients.

The definite diagnosis was based on the histopathological results, so biopsies were accomplished surgically in the form of excisional biopsy. Fine-needle biopsy was advised for highly suspected lesions.

The majority of patients underwent modified radical mastectomy (MRM), where removal of the breast, level I and II axillary lymph nodes and varying amounts of fatty tissue performed through a curvilinear incision. Removal of level III axillary lymph nodes was performed in some cases. Two drains were placed through separate stab incisions, one is placed in the axilla and the other under the skin flap. Drains removed when output was less than 30 mL/day.

Prophylactic mastectomy (of contralateral breast) was performed for women who had infiltrative lobular carcinoma with family history of BC. Some patients underwent BCS (lumpectomy and axillary lymph node dissection with postoperative irradiation). The surgical specimens proved to have tumor-free margins.

All women who underwent mastectomy were advised to wear artificial breast mounds in their bra to make their appearance look normal. All patients were referred to the oncologists for further management and were followed up for variable periods.

Results

The total number of patients were 93. Women constituted 92 (98.93%), while men constituted 1(1.07%), with male to female ratio was (0.01:1) **(Figure-1).** The age of the patients ranged from 26 to 75 years, with a median age (49.5) years. The peak incidence of BC (25.8%) was at age group 51-60 years, (60.2 %) of BCs happened in women over 50 years of age **(Table- 1).**

Figure-2 demonstrates that the right breast was the most common side affected, and table-2 shows that the upper outer quadrant of breast was the most common site affected by cancer.

(Table-3) clarifies that painless lump (91.4%) was the most common symptom, and **(Table-4)** expresses that the hard lump was the most common sign (100%).

Invasive ductal cancer was the most common histopathologic type of BC **(Table-5)**. **(Table-6)** verifies that the highest frequency of cases was diagnosed in stage II followed by stage III.

Among breast cancer victims, a lactating woman (1.07%) diagnosed at stage III. Two (2.15%) women had bilateral BC at the time of their initial diagnosis, both underwent bilateral MRM. 5 (5.4%) women had family history of BC, prophylactic mastectomy of the contralateral breast was performed for 2 of them who proved to have invasive lobular cancer

The most common surgical procedure that had been adopted in this study was MRM (87.1 %) as shown in table-7.

During the follow up period 15 (16.1%) patients had recurrent cancer, 4 of them had underwent BCS as verified in table-8. The remaining 11 patients had underwent MRM as demonstrated in **(Table-9).**

Table-10 presents that paresthesia of chest wall was the most frequent post operative complication (6.45%), followed by psychological effects (4.3%).

Discussion

NBC includes BC at stage 0, I , II and III. Finding breast cancer early and treating it are the most important strategies in preventing deaths from the disease. It may be asymptomatic. It is mentioned that most BC present as a hard lump [(2)]. This is consistent with the finding of the present paper where (91.4%) of patients presented with painless lump and all of them (100%) had a hard lump on clinical exam.

This paper revealed that (60.2%) of NBCs happened in women over 50 years of age, the peak incidence was at age group 51-60 years, and the median age was 49.5 years Such findings are higher than those estimated by other researchers [(8, 9, 10)]. This could be attributed to marked regional variations and better reporting and awareness of the disease in the developed countries.

In this study, a lactating woman was diagnosed at stage III. This coincides with that of other authors in confirming that delay in diagnosis of BC in lactating woman was common [(11,12,13)]. This is due to the natural tenderness and engorgement of the breast of lactating woman which may hinder detection of discrete masses, and therefore early diagnosis of BC.

Regarding male BC, a single male (1.07%), 62 years old presented with stage III infiltrating ductal cancer. This percentage is slightly higher than that reported in the literatures which is less than 1% [12,14,15] . The type of tumor histology is in agreement with that mentioned in other studies [16], and the age lies within the range reported by other authors which was between 60 and 70 years[17].

The data of this research suggest that (5.4%) of BC victims had family history of the same disease, this result goes in accordance with the current literatures[18,19]. The present work showed that the upper outer quadrant of breast is the most commonly affected quadrant by cancer, this is in agreement with other authors[2]. This study demonstrated that the highest frequency of cases was diagnosed in stage II, a finding supported by other researchers[3, 10, 20], but inconsistent with Kyoung Ju Kim et al, who reported that the highest frequency of cases was diagnosed in stage I [9].

Although it is controversial [20], the author performed prophylactic mastectomy of the contralateral breast for 2 (2.15%) women who had infiltrative lobular carcinoma with family history of BC.This agrees with other authors Anderson BO. who considers preventive mastectomy as a way of decreasing the risk of developing BC in women who are at high risk of developing this disease [21]. It is suggested that preventive mastectomy may significantly reduce (by about 90 percent) the chance of developing BC in moderate and high-risk women [21,22] , but it is not a guarantee that this procedure will protect an individual woman from BC, because it is not possible to be certain that all breast tissue has been removed [20] .

The histopathological results established that invasive ductal carcinoma was the most common type of breast cancer, a finding supported by other researchers [3,9, 23].

The present work showed that MRM was performed more frequently than BCS, this is consistent with other authors and researchers [3,10,20,23]. And the incidence of recurrent disease in the ipsilateral breast after BCS was (8.3%) which is much higher than those reported by Kyoung Ju Kim et al (2.5%) [9], and Park et al. (7%.) [24],but within the range mentioned by R. M. Clark et al (5.5 - 11%) [25] , and Fisher B. et al (5 - 15%) [26]. This paper showed (16.66 %) of patients who underwent BCS had recurrence in the axillary lymph nodes, and (8.3 %) had distant metastases, such findings are higher than that reported by other investigators. which are (1%) and (7.1%) consecutively [9] . Despite the relatively short follow-up period of this study, the high incidence of recurrent cancer in BCS may be related to defective post operative irradiation.

Regarding post operative complications, the researcher had found that the most frequent problem was paresthesia of chest wall (6.45%), which disappeared with time in. (4.3%) of women suffering from psychological effects, a finding which is much less than that reported by other authors, which was over 30 per cent [2], this may be due to that women in the developed countries may be more anxious than women in the developing countries.

Conclusion

The majority of patients with NBC were over 50 years of age, and the preponderance were diagnosed in stage II. MRM may be preferable method for treatment as it carries a lower rate of local or distant recurrence than conventional BCS procedures.

Recommendations

- Early detection and treatment of BC is essential. It needs education of women for the importance of periodic clinical breast examination, monthly breast self-exams, and regular screening mammograms. Mammography should be widely available in our hospitals for screening women, since it is relatively fast, and detects BC accurately and at early stage.
- Further studies and researches are required to confirm the high incidence of recurrent cancer in BCS.

Figure - 1 : Sex distribution

(Table-1)
Age group-related incidence of BC

Age group(year)	No.	%
26 - 30	8	8.6
31 - 40	12	12.9
41 - 50	17	18.3
51 - 60	24	25.8
61 - 70	19	20.4
Over 70	13	14
Total	93	100

Figure-2 : Distribution of BC between right and left breast

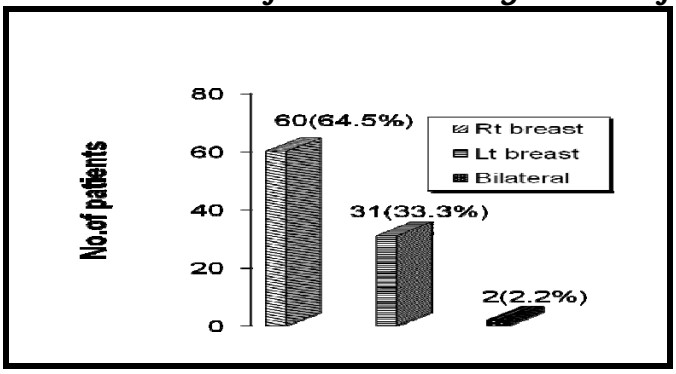

Table -2 :
Distribution of BC in relation to its site.

Site	No.	%
Upper outer	49	52.7
Upper inner	21	22.5
Lower outer	13	14
Lower inner	8	8.6
Central	2	2.2
Total	93	100

Table-3:
Distribution of patients according to the symptoms (N.B. more than one symptom is shared by many patients)

Symptom	No.	%
Painless breast lump	85	91.4
Axillary lymphadenopathy	22	23.6
Nipple discharge	4	4.3
Skin changes	2	2.15
Breast pain (mastodynia) or painful lump	6	6.45

Table-4
Distribution of patients according to the signs (N.B. more than one sign is shared by many patients

Sign	No.	%
Skin dimpling	36	38.7
Erythema or skin ulceration	2	2.15
Peau d'orange	52	55.9
Nipple retraction	76	81.7
Bloody discharge	2	2.15
Hard lump	93	100

Table-5
Distribution of patients according to the histopathologic types

Type	No.	%
Intraductal carcinoma (ductal carcninoma in situ)	١٤	15
Invasive ductal cancer	٥٤	58.1
Invasive lobular cancer	24	25.8
Paget disease with intraductal carcinoma	١	1.1
Total	٩٣	١٠٠

Table-6
Distribution of patients according to the stages of the disease.

Stage	No.	%
I	12	12.9
II	44	47.3
III	37	39.8
Total	93	100

Table -7
Types of surgery that used as a treatment for NBC.

Type	No.	%
MRM	81	87.1
BCS	12	12.9
Total	93	100

Table-8
Distribution of patients in relation to the site of recurrence in BCS

Site	No.	%
Ipsilateral breast	1	8.3
Ipsilateral breast & axillary lymph nodes	2	16.7
Bones	1	8.3
Total	4	33.3

Table-9
Distribution of patients in relation to the site of recurrence in MRM

Site	No.	%
Chest wall	2	2.5
Axillary lymph nodes	3	3.7
Lung	2	2.5
Bons	3	3.7
Liver & brain	1	1.2
Total	11	13.6

Table-10
Post operative complications

Complication	No.	%
Wound infection	2	2.15
Seroma	2	2.15
Paresthesia of chest wall	6	6.45
Lymphedema	2	2.15
Psychological effects	4	4.3
Total	16	17.2

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