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MANAGEMENT OF BREAST CANCER AMONG A SAMPLE OF IRAQI WOMEN

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ABSTRACT

Background: The management of breast cancer presents a complex clinical dilemma, particularly in balancing efficacy, quality of life, and patient preferences. The choice between mastectomy, conservative approaches, and neoadjuvant chemotherapy remains unclear. **Aim of study:** Assessment of management options among a sample of Iraqi breast cancer women. **Patients and methods:** This prospective cross-sectional study, included 90 patients diagnosed with breast cancer at the Breast Cancer Early Detection Clinic of Al Yarmouk Teaching Hospital. Patient history, examination, and review of signs of regional or distant metastasis, with imaging studies and biopsy confirmation. Patients were followed up until the endpoint of surgical intervention and post-neoadjuvant chemotherapy use. **Results:** The mean age was 52.5 years. A painless breast mass was the most frequently presenting symptom. Mastectomy was performed in 59 cases (65.6%), whereas breast-conserving surgery was performed in 23 cases (25.6%). Treatment selection was guided by doctor–patient counseling in conjunction with patient preferences. Only eight patients received neoadjuvant chemotherapy; seven (7.8%) subsequently underwent mastectomy, while a single patient (1.1%) underwent breast conserving surgery. **Conclusions:** Multidisciplinary care and patient-centered decision making are needed to effectively navigate the uncertainties and complexities of breast cancer treatment.

KEYWORDS: Patient history, examination, and review of signs of regional or distant metastasis, with imaging studies and biopsy confirmation.

INTRODUCTION

With a death toll of 670 000 cases globally, breast cancer remains the most common cancer among women in 157 countries.[1] Despite advancements in diagnosis and treatment, the burden is predicted to increase to more than 3 million new cases by 2040.[2] Global estimates reveal an outstanding inequity in the burden of breast cancer, highlighting the need for improved healthcare infrastructure and access to cost-effective cancer services.[3]

Breast cancer is the most prevalent type of cancer in Iraq, accounting for approximately one-third of all cancer cases recorded.[4] Mortality remains a critical concern, particularly in resource-limited settings, where access to comprehensive care is restricted.[5]

Aiming to downstage breast cancer and mitigate the associated financial burden, the Iraqi National Program for the Early Detection and Downstaging of Breast Cancer established in 2000, has undergone continuous expansion. The program now incorporates specialized clinics dedicated to referral-based screening and early diagnosis. These clinics provide patient education, employ a standardized triple-assessment approach, and offer advanced surgical management along with integrated oncology and psychiatric services.[6]

Breast cancer is considered a heterogeneous disease that can vary greatly among different patients[7] Hence, treatment concepts have advanced to account for the heterogeneity of breast cancer.[8]

The management of breast cancer presents a complex clinical dilemma, particularly in terms of balancing efficacy, quality of life, and patient preferences. Despite technological and therapeutic developments, there is no one-size-fits-all solution for the management of breast cancer. The choice among radical surgery, conservative approaches, and neoadjuvant therapies remains abstract.[9]

PATIENTS AND METHODS

This prospective cross-sectional study, conducted in the Breast Early Detection Clinic of Al Yarmouk Teaching Hospital, included 90 patients diagnosed with breast cancer during the study period from the first of October 2023 to September 2024.

The endpoint for breast cancer management was compared to previously published indicators in the literature, as modified mastectomy is usually applied to multifocal ductal carcinoma in situ or invasive breast cancer, if the tumor involves the skin or chest wall, a large tumor-to-breast ratio that precludes breast conservation, history of prior radiation, patient preference to avoid radiation, prophylactic mastectomy, or palliation in locally advanced breast cancer.[10] Breast conserving surgeries (BCS) are indicated for younger age, patient compliance, availability of radiotherapy facilities, and localized, smaller, monocentric tumors.[11-12]

Neoadjuvant Chemotherapy (NACT) is usually administered for large tumors that may complicate surgery, locally advanced cancer with lymph node involvement, Inflammatory breast cancer, HER2-positive, Triple-negative, and health concerns that increase the risks of immediate surgery.[13]

History and imaging studies were reviewed, and patients were followed up with their surgical interventions, that is, mastectomy, conserving breast surgery, and those who underwent NACT, were meticulously observed to post therapy decision on surgical procedure and followed through their management course.

RESULTS

The average age of the studied sample was 52.5±9.8 years. The most common complaint was a painless mass. The majority of women had no family history. Half of the patients expressed a delay in seeking professional health for one month and more. Table (1) shows the patients' demographic characteristics.

Figure (1) Distribution of the sample according to management intervention. Modified Mastectomy was performed in 59 (65.6%) of cases, followed by breast-conserving surgery in 23 (25.6%). While neoadjuvant chemotherapy was completed for 8 (8.9%) women.

No significant differences were observed among the types of management, and age, comorbidities, and immunohistochemical staining (IHC), as seen in Table (2)

Fifty-nine women underwent mastectomy. Of them 34/59 (57.6%) had contraindications to breast-conserving surgery. Figure (2) demonstrates the indications for mastectomy in breast cancer cases.

The remaining 25/59 (42.4%) of women who had mastectomy. Table (3) depicts the criteria of deterring from BCs to mastectomies.

Among the reported comorbidities that deterred the decision from BCS to Mastectomy, 3/6 (50%) patients were diabetic and cardiac dysfunction, 1/6 (33.3%) patient were hypertensive and diagnosed with lung fibrosis, another patient (16.7%) had an angioplasty and stent placement for the heart creating a contraindication for radiotherapy.

Only 8 (8.9%) of women had NACT. Seven of those eight patients (7.8%) had modified mastectomy after NACT, and only one case had BCS (1.1%) after NACT. Table (4) shows the NACT cases in details with their surgical endpoints.

TABLES AND FIGURES

Table 1: Distribution of the sample according to demographic characteristics. (n=90).

Variables		Frequency	Percentage
Age	20-29	1	1.1
	30-39	5	5.6
	40-49	29	32.2
	50-59	28	31.1
	≥ 60	27	30
Residency	Rural	16	17.8
	Urban	74	82.2
Occupation	Housewife	69	76.7
	Employee	21	23.3
Education	Illiterates	12	13.3

	Primary	22	24.4
	Secondary	35	38.9
	Higher education	21	23.3
Chief Complain	Painless mass	62	68.9
	Nipple retraction	6	6.7
	Mass and pain	19	21.1
	Mastalgia	3	3.3
Duration	<14 days	3	3.3
	15 – 29 days	40	44.4
	≥ 30 days	47	52.2
Family history	No	73	81.1
	Yes	17	18.9
Co-morbidities	None	34	37.8
	HTN*	30	33.3
	Diabetes	26	28.9
Immuno-histochemical stain	Luminal A	43	47.8
	Luminal B	22	24.4
	Her2	17	18.9
	Triple negative	8	8.9

*HTN: Hypertension / Cardiac dysfunction/ Heart Failure/ Stent placement CABG

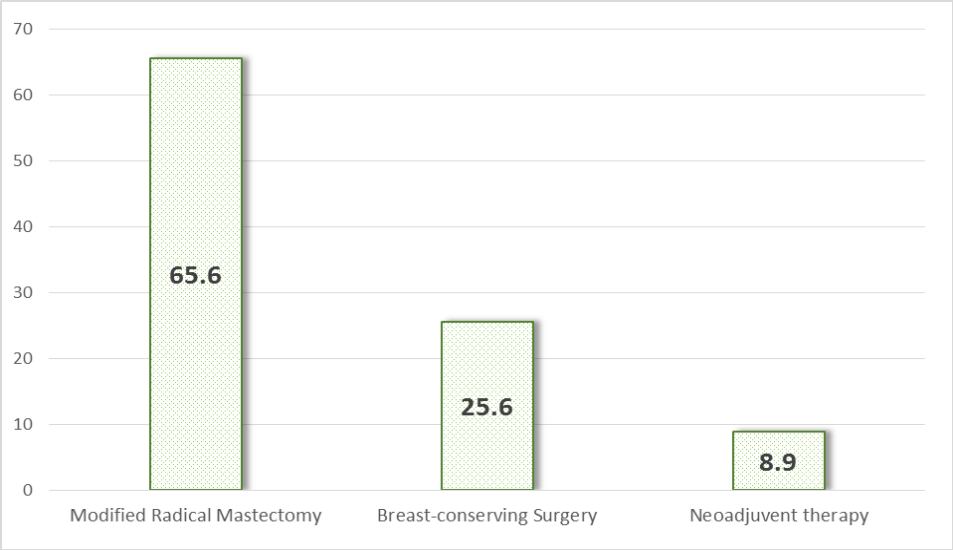

Figure 1: Distribution of the sample according to management intervention.

Table 2: Distribution of the sample by type of management (n=90).

	Type of management			**P value**
	Modified Mastectomy N=59	**BCS N=23**	**NACT N=8**	
Age				
20-29	0	1(100%)	0	X^2=18.526, P =0.119
30-39	2(40%)	2(40%)	1(20%)	
40-49	13(44.8%)	10(34.5%)	6(20.7%)	
50-59	21(75%)	6(21.4%)	1(3.6%)	
≥60	23(85.2%)	4(14.8%)	0	
Co-morbidities				
None	17(50%)	13(38.2%)	4(11.8%)	X^2=9.294, P =0.054
Diabetic	20(76.9%)	6(23.1%)	0	
HTN*	22(73.3%)	4(13.3%)	4(13.3%)	
IHC				
Luminal A	32(74.4%)	10(23.3%)	1(2.3%)	X^2=9.461, P =0.149
Luminal B	11(50%)	6(27.3%)	5(22.7%)	

Her2/neu	10(58.8%)	5(29.4%)	2(11.8%)	
Triple negative	6(75%)	2(25%)	0	

*HTN: Hypertension / Cardiac dysfunction/ Heart Failure/ Stent placement

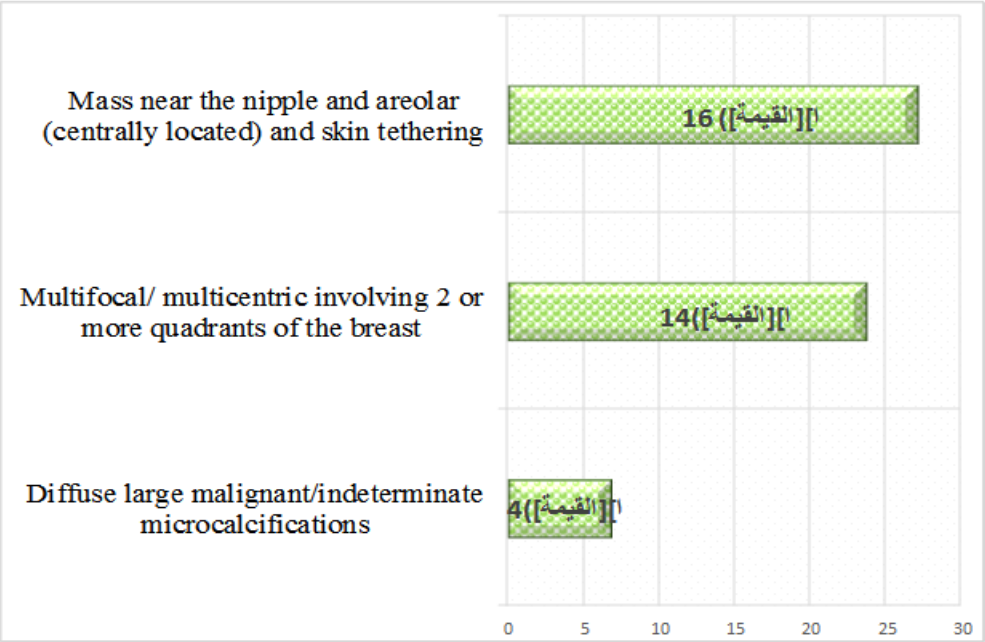

Figure 2: Indications of Mastectomy among cases (n=34).

Table 3: The criteria for shifting to mastectomy over BCs.

Reasons	Frequency	Percentage
Challenges to access service: Old age / living in rural areas/ far from radiotherapy facilities	11	12.2
Challenges to treatment: Presence of Co morbidities	6	6.7
Strong family history of cancers	4	4.4
Following family advise	4	4.4
Total	**25**	**100.0**

Table 4: Distribution of the sample by causes of Neo adjuvant chemotherapy.

Cause of NACT	Patient Age	Chief complaint	IHC type	Size before NACT	Size after NACT	Surgical decision	Staging
Down staging	35	RBM	Luminal B	4cm	6mm	BCS	T0N0
Inflammatory Breast Cancer	50	RBM	HER2	6cm	2cm	Mastectomy	T0N0
Locally advanced with metastatic LN (Multicentric tumor involving 2 or more quadrants of the breast)	41	LBM	Luminal A	3 cm	2 cm	Mastectomy	T1N0
Locally advanced with metastatic LN (Multicentric tumor involving 2 or more quadrants of the breast)	44	LBM	Luminal B	5cm	2cm	Mastectomy	T1N0
Locally advanced with metastatic LN (Multicentric tumor involving 2 or more quadrants of the breast) (patient preference)	44	RBM	Luminal B	2cm	14mm	Mastectomy	T0N0
Locally advanced with metastatic LN (Multicentric tumor involving 2 or more quadrants of the breast)	47	RBM	Luminal B	2cm	1cm	Mastectomy	T0N0
Locally advanced with metastatic LN (very large tumor size relative to breast volume)	45	RBM	HER2	8.5cm	2cm	Mastectomy	T1N0
Locally advanced with metastatic LN	41	RBM	Luminal B	4 cm	2 cm	Mastectomy	T1N0

(Nipple retraction, tethering skin, HER2+, mass close to chest wall) (patient preference)							

NACT: Neoadjuvant chemotherapy, BC: Breast Cancer, RBM: Right breast mass, LBM: left breast mass, LN: Lymph Nodes

DISCUSSION

Mastectomy was the commonest procedure performed (65.6%), followed by breast-conserving surgery (25.6%). While NACT was the least provided (8.9%). Comparing these finding to a previous Iraqi literature showed 92.3% of breast cancer women were treated by modified radical mastectomy.[14] This illustrates the growing role of BCS in management.

The current findings were comparable to Al Gaithy Z et al study in Saudi Arabia, where mastectomy versus BCS was 62.4% vs 37.6% respectively.[15] Mastectomy was also widely used compared to BCS in Halbony H et al study in Jordan (61.6 vs 38.3%)[16], and Rostom Y et al in Egypt (72.2% vs 25%).[17]

Yet Chu Q et al study in USA showed that mastectomy was done in 41.5% of cases, indicating a higher percentage of BCS.[18] Likewise, Dahlui M et al study in Malaysia (BCS rate was 47.1%)[19], Turkey (57.3%)[20], and Germany (84.8%).[21]

Interestingly, around 40% of women who had mastectomy, had no contra-indication to BCS. The present study investigated thoroughly the reasons for deterring from BCS. The analysis showed that doctors and patients discussions were mainly related to enhancing patient post-surgical experience and quality of life. Post-surgical pain was among the common area of consultation, in addition to reconstruction surgeries and the contralateral prophylactic breast mastectomy was also discussed.

The struggle initiates when surgeons try to find a balance between what is available in terms of services and treatment, to the current condition and comorbidities of their patients and their preferences. One of the points is the difficult access to health facilities. Older patients, and those who lived in rural areas far from the radiotherapy centers, signaled the concern for treatment interruption, and no compliance to follow radiotherapy post BCS.[22]

The presence of co-morbidities expanded the concern to include possible side effects post BCS, cost of treatment, and local recurrence, in addition to non-compliance.

A left-sided breast cancer might present unique management challenges in patients with significant cardiovascular disease. In particular, individuals with a history of percutaneous coronary intervention—including angioplasty and coronary stent placement—may face increased complexity when planning postoperative radiotherapy following breast-conserving surgery. Cardiac proximity to the left breast, baseline cardiac vulnerability, and the potential risks of radiation-induced cardiotoxicity collectively complicate treatment decisions, underscoring the need for meticulous multidisciplinary coordination. Likewise, diabetic patients with breast cancer might introduce a challenging situation, Bekele B et al illustrated that women with diabetes were less likely to utilize radiotherapy.[23]

The process of decision making is also affected by patients' preferences. Patients often have the impression that mastectomy is a safer approach as it involves more extensive breast tissue removal and assume that mastectomy guarantees that they will never have to deal with breast cancer ever again, or by mastectomy they may avoid chemo and radiotherapy.[24] Women feared being exposed to radiation, and were concerned about a recurrence of breast cancer, that influenced the choice of mastectomy over BCS. Agreeing with findings reported by Dicks E et al study, where in some cases women were pushed by family consideration for not only a mastectomy, but contralateral prophylactic mastectomy, often against their surgeon's advice.[25]

Nevertheless, surgeons trust and recommendations remain an important factor in the sound choice of breast cancer management for their patients.[26, 27] As patients focus more on health benefit and treatment process. Surgeons focus on controlling adverse effects.[28] Eight (8.9%) of women with breast cancer had neo-adjuvant therapy. Only one case had BCS (1.1%) post NACT. The rest of cases had mastectomy, the aim of NACT was to render the case more accessible for surgical interference. this finding is comparable to Al Gaithy Z et al where NACT patients were more likely to undergo a mastectomy than BCS.[15]

In the same context, two out of 6 patients who completed the NACT, personally preferred to have mastectomy, this agrees with Huang N et al, and Chen R et al studies described a tendency to choose mastectomy over BCS post NACT.[29, 30] This might be explained by related to psychological and physical exhaustion from chemotherapy, spouse and family influence, previous history of breast cancer recurrence in family.

CONCLUSIONS

The study showed the generalized criteria for deterring cases from conserving surgeries to mastectomies which were governed by post-surgical experience, concerns about complications and recurrence, in addition to patients' preferences.

The study underscores the need for multidisciplinary care and patient-centered decision-making to navigate the uncertainties and complexities of breast cancer treatment effectively.

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