Extreme Oncoplastic Breast Surgery in Patients Presented to Ain Shams University Hospital, Initial Experience

Thesis

Submitted for Partial Fulfilment of Master Degree
in **General Surgery**

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2020

سورة البقرة الآية: ٣٢

Acknowledgments

First and foremost, I feel always indebted to ***Allah*** *the Most Beneficent and Merciful.*

I wish to express my deepest thanks, gratitude and appreciation to ***Prof. Dr. Samy Ahmed Abd Elrahman****, Professor of General Surgery, Faculty of Medicine, Ain Shams University, for his meticulous supervision, kind guidance, valuable instructions and generous help.*

Special thanks are due to ***Prof. Dr. Ahmed Gamal El Din Osman****, Assistant Professor of General Surgery, Faculty of Medicine, Ain Shams University, for his sincere efforts, fruitful encouragement.*

I am deeply thankful to ***Dr. Mohammad Ahmad Abd-erRazik****, Lecturer of General Surgery, Faculty of Medicine, Ain Shams University, for his great help, outstanding support, active participation and guidance.*

Really I can hardly find the words to express my gratitude to ***Dr. Mohamed Hamdy Zaid****, Lecturer of General Surgery, Faculty of Medicine, Ain Shams University, for his supervision, continuous help, encouragement throughout this work.*

I would like to express my hearty thanks to all my family for their support till this work was completed.

Ahmed Mohamed Hanafy Sayed

List of Contents

Title	Page No.
List of Abbreviations	5
List of Tables	6
List of Figures	8
Introduction	- 1 -
Aim of the Work	15
Review of Literature	
▪ Anatomy of the Breast	16
▪ Pathology of Breast Cancer	33
▪ Breast Cancer Surgery: Standard Principles	52
Patients and Methods	71
Results	101
Discussion	116
Summary	124
Conclusion	128
References	129
Arabic Summary	

List of Abbreviations

Abb.	Full term
BCS	*Breast conserving surgery*
BCT	*Breast conserving therapy*
BIRADS	*Breast Imaging Reporting and Data System*
BRCA-1	*Breast cancer antigen 1*
BRCA-2	*Breast cancer antigen 2*
CIS	*Carcinoma in situ*
DCIS	*Ductal carcinoma insitu*
DM	*Diabetes Mellitus*
EGFR	*Epidermal growth factor receptor*
EO	*Extreme oncoplasty*
IDC	*Invasive ductal carcinoma*
IHC	*Immune-histochemistery*
ILC	*Invasive lobular carcinoma*
IMF	*Inframammary fold*
LCIS	*Lobular carcinoma insitu*
LD	*Latissmus dorsi*
MC	*Multicenteric*
MDT	*Multi-disciplinary team*
MF	*Multifocal*
NAC	*Nipple-areolar complex*
NCRP	*National Cancer Registry Program*
NPI	*Notingham prognostic index*
NST	*No special type*
OBS	*Oncoplastic breast surgery*
OPS	*Oncoplastic surgeries*
QoL	*Quality of life*
RT	*Radiotherapy*
RT-PCR	*Reverse transcriptase polymerase chain reaction*
TRM	*Theraputic reduction mammoplasty*

List of Tables

Table No.	Title	Page No.
Table 1:	Molecular subtypes of breast cancer	43
Table 2:	AJC {TNM} classification of breast cancer	44
Table 3:	Breast cancer staging according to clinical lymph node status	45
Table 4:	Breast cancer staging according to distant metastases	48
Table 5:	Stage grouping system for carcinoma of the breast	49
Table 6:	Interpretation of NPI	51
Table 7:	Advantages and disadvantages of oncoplastic breast surgery as compared to breast conserving surgery	58
Table 8:	Indications and contraindications of oncoplastic breast surgery	59
Table 9:	Bi-level classification of oncoplastic surgeries	59
Table 10:	Breast cup size	65
Table 11:	Type of OPS – BCS for reconstruction of partial mastectomy defects with respect to the location of the tumor in the breast	67
Table 12:	BREAST-Q questionnaire	100
Table 13:	Mean age of the study	101
Table 14:	Family history & history of neoadjuvant chemotherapy.	102
Table 15:	Number and percent of co-morbidities.	103
Table 16:	Tumor characteristics in the study	104
Table 17:	Oncoplastic techniques used in the study	105

List of Tables cont...

Table No.	Title	Page No.
Table 18:	Histopathological results of the tissue samples	106
Table 19:	Mean operation time and Blood Loss for our study.	108
Table 20:	Patients that needed re-excision of surgical margins	108
Table 21:	Postoperative hospital stay	109
Table 22:	Mean post-operative drainage amount and days for the study.	110
Table 23:	Types of post-operative complications	111
Table 24:	Satisfaction score and number of patients according to breast-Q questionnaire.	113
Table 25:	Cosmetic outcomes sheet for the surgeon and MDT evaluation	115

List of Figures

Fig. No.	Title	Page No.
Figure 1:	The mammary milk line	17
Figure 2:	Axillary tail of spence	18
Figure 3:	Surface anatomy demonstrating the relations between the nipple and areola complex, the sternum, and the inframammary fold	19
Figure 4:	Breast quadrants for oncoplastic surgery	21
Figure 5:	Relationship between breast lobes, Cooper's ligaments, fat tissue, and thoracic muscles	22
Figure 6:	Anatomy of the axilla	24
Figure 7:	Arterial supply of breast	25
Figure 8:	Levels of pectoral lymph nodes	27
Figure 9:	Lymphatic drainage of the breast and the most frequent localization of the sentinel node	28
Figure 10:	Schematic drawing of breast and anterior and lateral cutaneous branches of fourth intercostal nerve innervating the nipple and areola	32
Figure 11:	Anatomical Sites of breast cancer	33
Figure 12:	Morphologic patterns in non-invasive (in situ) carcinoma of breast	37
Figure 13:	Nottingham histological grade of breast cancer	50
Figure 14:	Level I OPS surgical concept (step-by-step approach)	60
Figure 15:	Level I OPS	61
Figure 16:	Oncoplastic techniques according to the tumor location	68
Figure 17:	Preoperative drawing while the patient standing	76

List of Figures cont...

Fig. No.	Title	Page No.
Figure 18:	Superior medial pedicle for multifocal tumor at 6 O"clock.	77
Figure 19:	Intra-operative dissection	79
Figure 20:	Postoperative wound closure.	80
Figure 21:	Postoperative day 1.	80
Figure 22:	Postoperative day 3.	81
Figure 23:	Postoperative week 3.	81
Figure 24:	Multicenteric tumor with mass near the NAC	82
Figure 25:	Tumor resection in round block technique.	83
Figure 26:	Breast after tumor resection in round block technique.	84
Figure 27:	Skin de-epithelialization in round block technique.	84
Figure 28:	Donut mammoplasty skin closure	85
Figure 29:	Donut mammoplasty after skin closure.	86
Figure 30:	Preoperative marking	87
Figure 31:	Multifocal tumor at upper outer quadrant with skin dimpling.	88
Figure 32:	Inferior pedicle with skin island reconstruction.	89
Figure 33:	LD FLAP marking for mass at Upper outer quadrant & Lower outer quadrant	90
Figure 34:	Elevation of LD flap	91
Figure 35:	Closure of Donor Site	92
Figure 36:	Intraoperative dissection	93
Figure 37:	LD flap reconstruction with skin island for multicentric tumor at upper outer quadrant & upper inner quadrant.	94
Figure 38:	Suction drain placing in round block technique.	95
Figure 39:	Postoperative wound ulcer .	97

List of Figures cont...

Fig. No.	Title	Page No.
Figure 40:	Postoperative wound infection.	97
Figure 41:	Percentage of family history of breast cancer among patient population.	102
Figure 42:	Percentage & Type of comorbidities among patient population.	103
Figure 43:	Tumor characteristics in the study	105
Figure 44:	Oncoplastic techniques used in the study.	106
Figure 45:	Histopathological results of the tissue samples.	107
Figure 46:	The need for re-excision margins.	109
Figure 47:	Percentage of post-operative complications	111
Figure 48:	Types of post-operative complications	112
Figure 49:	Satisfaction score and percent of patients according to breast-Q questionnaire.	113

INTRODUCTION

The breast is an important part of the female body due to its anatomical, physiological, and aesthetic role. A proportionately developed breast is an important feminine feature, a sign for fertility and sexuality. It plays a great role in female's self-confidence ***(Urban et al., 2013).***

Breast cancer is the most common cancer in women all over the world representing 18% of all women reported cases of cancer. It represents the leading cause of women mortality as representing 23% of all women cancer deaths ***(Akram et al., 2017).***

According to the national cancer institute, breast cancer is the most common site of cancer in women in Egypt as it accounts for about 38.8% of total malignancies among Egyptian females; it is an important cause of mortality among women ***(Ibrahim et al., 2014).***

The diagnosis of breast cancer is based on history taking, both primary tumor and regional lymph node clinical examination, imaging, pathological confirmation of the diagnosis. Staging of breast cancer is assessed according to TNM system that depends on the case of primary tumor, regional lymph nodes, and distant metastasis ***(Senkus et al., 2015).***

Following the diagnosis of breast cancer, the patient finds herself in a new and unfamiliar landscape. This creates different levels of stress that vary from patient to another ***(Senkus et al., 2015).*** This stress is not only because of facing mortality but also surgical treatment of breast cancer may significantly and often permanently alter her perception of her physical, emotional, and sexual wholeness ***(Dennis et al., 2012).***

Halsted radical mastectomy was established for the first time in 1880s as a surgical management of breast cancer by removing breast enbloc, pectoralis muscles and axillary lymph nodes with good deal of skin. It was a disfiguring surgery with a lot of morbidities and complications.

In 1972 Madden modified radical mastectomy was done by conserving both pectoral muscles along with radiotherapy achieving similar oncologic results of radical mastectomy but less morbidities. In 1970s the wide spread of mammography use permitted the diagnosis of breast cancer at earlier stages, that allowed to remove only the tumor with free margins plus axillary dissection along with radiotherapy achieving same survival rates as more aggressive surgeries ***(Plesca et al., 2016).***

However, breast conserving techniques remained as a partial mutilation, where asymmetries and deformities were not considered relevant as oncological outcomes were more

important than psychological and aesthetic damage ***(Rodriguez et al., 2018).***

The goal of optimizing the cosmetic and oncologic outcomes of breast conserving surgeries has been addressed by the emergence of the field of oncoplastic surgeries. Originally oncoplastic surgeries are defined as an assortment of volume replacement techniques to replace partially or totally resected breast ***(Lim et al., 2017).***

But now it includes the use of plastic techniques to achieve resection of the tumor with safety margins maintaining good cosmetic outcomes and symmetrizing surgeries for the contralateral breast if needed, the technique used depends on several factors such as tumor location, size, tumor to breast ratio and patients' desires ***(Piper et al., 2015).***

In recent years, the technique of "Extreme oncoplasty" (EO) has emerged as a promising option in selective patients with adequate breasts (cup size $\geq$ C) where in Breast Conservation Surgery is possible inspite of large volume resections. Indeed, EO could be used to conserve breasts in scenarios for which mastectomy would be have been the treatment of choice offered by most surgeons. Thus, EO provides an alternative to mastectomy, extends the scope of breast conservation, provides better clinical outcomes, and improves quality of life (QoL) ***(Silverstein et al., 2015).***

There is a paucity of evidence to support the application of oncoplastic surgery to patients with large tumor span, multifocal and/or multicenteric disease, as the current literature generally excludes these patients. Silverstein et al. have advocated for the use of oncoplastic reduction mammoplasty in patients with multifocal(MF), multicenteric(MC) tumors, and/or disease span greater than 5cm (coining the term, "extreme oncoplasty") and have published excellent outcomes on a series of 66 patients with 10% requiring re-excision for inadequate margins and 6% converting to mastectomy ***(Silverstein et al., 2015).***

The difference between MF breast cancer and MC breast cancer is based on the anatomic quadrant of the breast. The multiple foci located in the same quadrant are labeled as MF, whereas MC disease is present in more than one quadrant. Some authors also distinguish MF breast cancer and MC breast cancer based on the assumption that MF breast cancer originates within the same duct collecting system (tumors in the same quadrant or less than or equal to 5 cm apart), whereas MC breast cancer originate in the different duct collecting systems (tumors in different quadrants or more than 5 cm apart), which means that MF breast cancer is monoclonal, while MC breast cancer is not ***(Mei-rong Zhou et al., 2013).***

AIM OF THE WORK

The aim is to:

- Assess the feasibility, aesthetic results of extreme oncoplasty and achievement of negative margins in the enrolled patients with multicenteric, multifocal or T2 tumor in small breast.