A Prospective Study of the latero-central glandular pedicle technique As an Oncoplastic Procedure for Medial Quadrants Breast Masses; Oncological Safety and Clinical Outcomes

Thesis

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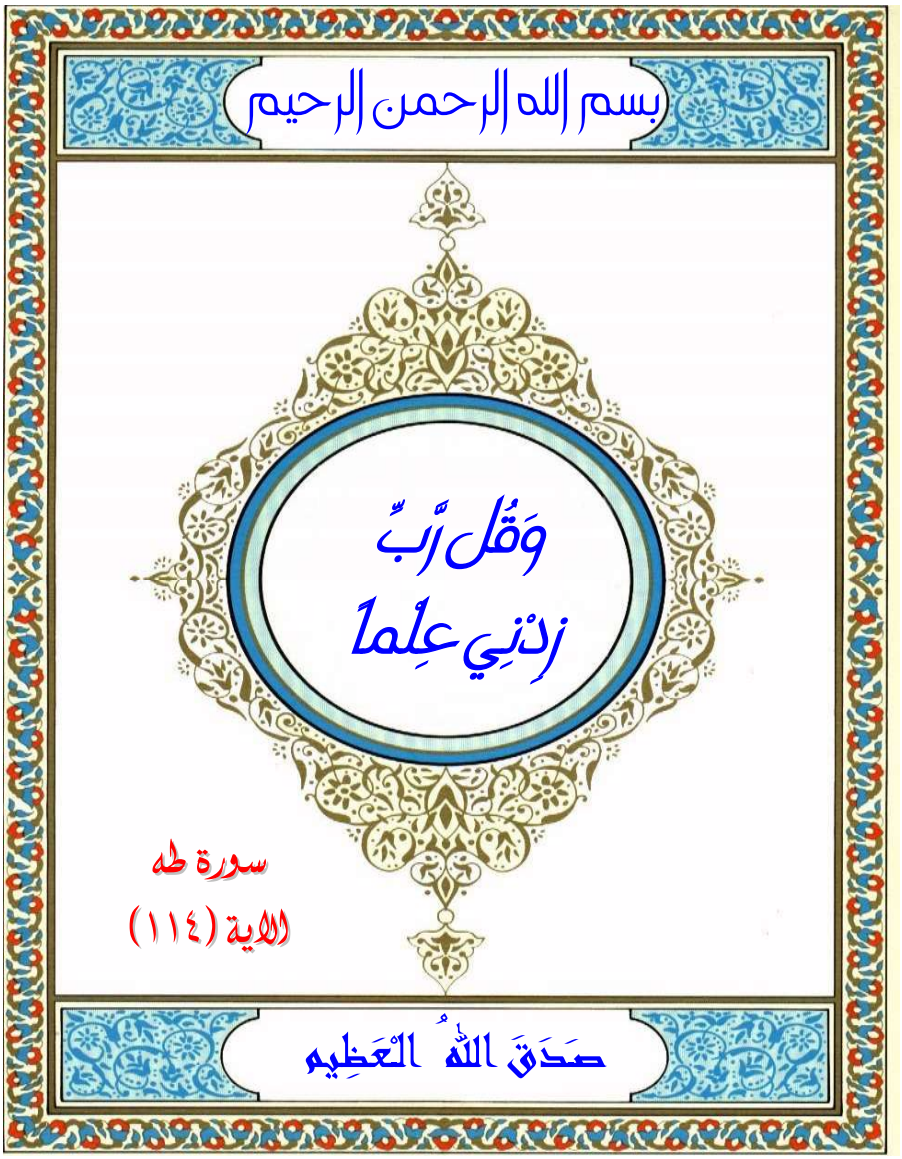
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List of Contents

List of Tables

List of Figures

List of Figures cont…

List of Abbreviations

Abb.	Full term
ACOSOG Z0011	*American College of Surgeons Oncology Group Z0011*
ALCL	*Anaplastic large cell lymphoma*
ASRs	*Age-standardized incidence rates*
ATM	*Ataxia telangiectasia*
BAPS	*British Association of Plastic Surgeons*
BASO	*British Association of Surgical Oncology*
BCS	*Breast conserving surgery*
BCT	*Breast-conserving therapy*
BL	*Burkitt 's lymphoma*
BRCA-1	*Breast cancer antigen 1*
BRCA-2	*Breast cancer antigen 2*
DCIS	*Ductal carcinoma in situ*
DIEP	*Deep inferior epigastric perforator*
DIN	*Ductal intraepithelial neoplasia*
DLBCL	*Diffuse large B-cell lymphoma*
EFGR	*Epidermal growth factor receptor*
ER	*Estrogen receptor*
FL	*Follicular lymphoma*
FNA	*Fine needle aspiration*
HIV	*Human immune deficiency virus*
ICAP	*Intercostal artery perforator*
IDCs	*Invasive ductal carcinomas*
IHC	*Immunohistochemical*
ILCs	*Invasive lobular carcinomas*
IMF	*Inframammary fold*
LCIS	*Lobular carcinoma in situ*
LD	*Latissimus dorsi*
LIN	*Lobular intraepithelial neoplasia*
MDR	*Multiple drug resistance RT-PCR Reverse transcriptase polymerase chain reaction*
MDT	*Multidisciplinary team*
MZL	*Marginal zone lymphoma*

List of Abbreviations cont…

Abb.	Full term
NAC	*Nipple and areola complex*
NHL	*Non-Hodgkin lymphomas*
NPI	*Nottingham prognostic index*
OPS	*Oncoplastic surgery*
PBL	*Primary breast lymphoma*
PgR	*Progesterone receptor*
PMRT	*Postmastectomy radiotherapy*
SIEA	*Superficial inferior epigastric artery*
SLL	*Small lymphocytic lymphoma*
SN	*Sentinel node*
SNB	*Sentinel node biopsy*
TDAP	*Thoraco-dorsal artery perforators*
TNBC	*Triple Negative breast cancer*
TRAM	*Transverse rectus abdominis myocutaneous*
WHO	*World health Organization*

INTRODUCTION

The breast is the true mirror of femininity, and it remains in the mind of every one of us as the heart of womanhood, with its role as nourisher, and comforter. These roles evoke the idea of the importance and the affection of this delicate organ has in the minds of women ***(Urban and Rietjens, 2013).***

Breast cancer, according to national cancer institute, 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 ***(Khaled et al., 2014).***

Breast reconstruction is becoming increasingly important due to changes in patient expectations and demand. There is growing recognition that immediate reconstruction in appropriately selected women can combine an oncological and aesthetic procedure in one operation with excellent results. Because most breast surgery is performed by general surgeons, most reconstructions were performed as delayed procedures by plastic surgeons. Increasingly, breast surgery is being performed by breast surgeons trained in oncoplastic techniques who can offer immediate reconstruction with both therapeutic and economic option ***(Schrenk, 2015).***

The blood supply to the breast skin depends on the subdermal plexus, which is in communication with deeper

underlying vessels supplying the breast parenchyma. The blood supply is derived from the internal mammary perforators (most notably the second to fifth perforators), the thoracoacromial artery, the vessels to serratus anterior, the lateral thoracic artery, the terminal branches of the third to eighth intercostal perforators, the superomedial perforator supply from the internal mammary vessels is particularly robust and accounts for some 60% of the total breast blood supply, This rich blood supply allows for various reduction techniques, ensuring the viability of the skin flaps after surgery ***(Maxwell and Gabriel, 2009).***

Sensory innervation of the breast is dermatomal in nature. It is mainly derived from the anterolateral and anteromedial branches of thoracic intercostal nerves T3-T5. Supraclavicular nerves from the lower fibers of the cervical plexus also provide innervation to the upper and lateral portions of the breast, Researchers believe sensation to the nipple derives largely from the lateral cutaneous branch of T4 ***(Maxwell and Gabriel, 2009).***

The superior pedicle was described by Weiner et al in 1973 and has traditionally been associated with smaller resections, best used in resections of less than 1000 gram, as it becomes difficult to inset with larger resections. It has been demonstrated to be a safe option in women with sternal notch to nipple distances more than 40 cm. A major disadvantage of the superior pedicle technique is the higher risk for sensory loss at

the nipple-areolar complex postoperatively. This is found to be independent of the amount of tissue resected and is thought to be due to the tissue resection at the base of the breast this pedicle requires. Numbers as high as 70% of women have diminished sensation at the nipple-areolar complex 1 year postoperative with the superior pedicle, irrespective of the amount of tissue resected ***(Corrine Wong et al., 2014).***

The inferior pedicle technique can reliably preserve the nipple–areola complex region well perfused in a breast of almost any size and shape. It is a technique that is easy to learn. Although it requires some flap undermining and the Wise pattern in most cases, it can be performed in 2–3 hours. Some feel that the inferior pedicle technique has a lower complication rate since the inferior location obliterates dead space in the dependent region of the breast. A major criticism of the inferior pedicle is the development of the "bottoming out" phenomenon ***(Kronowitz et al., 2007).***

The medial pedicle is sometimes described as a "superomedial" pedicle because it will often appear to be quite superior, especially with the more ptotic breast. Keeping some superior tissue does preserve vascularity, but retaining too much superior tissue will interfere with the ease of inset. The blood supply to the medial pedicle is provided by several smaller branches from the internal thoracic (mammary) system (third to sixth intercostal spaces). Since these vessels enter the breast at a superficial level, the pedicle can be either dermal or

full thickness dermoglandular, On the other hand, nipple-areola projection is less than that for the lateral pedicle technique ***(Hamdi and Hall-Findlay, 2005).***

The round block technique can be used in patients with small and moderate sized breasts without ptosis and for tumors located near the nipple areola complex but without nipple invasion. In this technique care must be taken to prevent injury to the dermis to preserve the blood supply of the nipple areola complex ***(Yang et al., 2011).***

Although, Traditional lumpectomy shown to be a good alternative to mastectomy for the appropriately selected breast cancer patients, it may result in poor cosmesis. Central oncoplastic techniques, including central lumpectomy, donut mastopexy lumpectomy, and variations of reduction mastopexy lumpectomy have been developed to address this problem. By combining large-volume tumor removal with breast-flap advancements, the oncoplastic techniques allow wider margins of resection and better breast shape and contour preservation ***(Urban and Rietjens, 2013).***

The lateral pedicle can be used in large breasts instead of the superior pedicle to avoid pedicle kinking. This pedicle has major advantages in terms of arterial input and breast sensation; branches from the lateral thoracic artery contribute to the blood supply, and the deep branches of the fourth intercostal nerve are incorporated, Septum-based lateral mammaplasty gives

excellent results in terms of preservation of nipple- areola complex sensitivity and it is recommended for young patients who have exacting demands on preservation of nipple sensitivity ***(Hamdi and Hall-Findlay, 2005).***

Increased viability of the NAC, a reduced rate of wound complications and preservation of sensation in NAC are the main advantages of this technique. Additionally, flattening of the NAC is avoided by the support by glandular tissue behind the NAC that improves projection and hereby the aesthetic conic appearance of both breast and nipple ***(Blondeel et al., 2003).***

Aim of the Work

The aim of this work is to focus on the latero-central glandular pedicle technique as an oncoplastic procedure for management of medial breast cancer and to assess the technique clinically regarding oncological safety, surgical outcomes and patient satisfaction.