

Evaluation of Donut Mammoplasty in Early Breast Cancer Near to Nipple- Areola Complex

Thesis

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وَقُلْ رَبِّ
زِدْنِي عِلْمًا

سورة طه
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صَدَقَ اللَّهُ الْعَظِيمُ

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List of Abbreviations

Abb.	Full term
<i>ATM</i>	<i>Ataxia terengectasia</i>
<i>BRCA-1</i>	<i>Breast cancer antigen 1</i>
<i>BRCA-2</i>	<i>Breast cancer antigen 2</i>
<i>ER</i>	<i>Estrogen receptor</i>
<i>HDLC</i>	<i>High density lipoprotein C</i>
<i>IDC</i>	<i>Invasive ductal carcinoma</i>
<i>ILC</i>	<i>Invasive lobular carcinoma</i>
<i>INF</i>	<i>Inframmary ford</i>
<i>ITC</i>	<i>Isolated tumor cells</i>
<i>LCIS</i>	<i>Lobular carcinoma in situ</i>
<i>MDR</i>	<i>Multiple drug resistance</i>
<i>NAC</i>	<i>Nipple and areola complex</i>
<i>NHL</i>	<i>Non Hodgkin lymphoma</i>
<i>NPI</i>	<i>Notingham prognostic index</i>
<i>PBL</i>	<i>Primary breast lymphoma</i>
<i>PGR</i>	<i>Progesterone receptors</i>
<i>SWLE</i>	<i>Standard wide local excisions</i>
<i>WHO</i>	<i>World Health organization</i>

INTRODUCTION

Breast is a uniquely important part of the female body and as such embodies in itself anatomical, physiological and aesthetic role. A proportionately developed breast is an important feminine feature, a sign for fertility and sexuality. Breasts are extremely important for women's self-confidence especially when their role in society has expanded immensely (*Urban et al., 2013*).

Breast cancer is the most common cancer in women worldwide, with nearly 1.7 million new cases diagnosed in 2012 (second most common cancer overall). The risk of developing breast cancer throughout life is 12% (*Miller and Siegel, 2016; Kaplan et al., 2013*), according to 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 a life-changing experience. Not only does it bring the woman face to face with her mortality, but also surgical treatment of breast cancer is accompanied by physical changes to the breast and body that may significantly, and often permanently, alter her perception of her physical, emotional, and sexual wholeness (*Dennis et al., 2012*).

The first surgical treatment with a scientific basis was carried out in 1882, when Halsted designed an intervention called *radical mastectomy*. This surgery was performed throughout the twentieth century, with a cure rate of 40% for those patients with a mechanical extension from the tumour to the lymph nodes, then to the blood and finally metastasis. This technique consisted of removing all the skin around the breast, fat, breast tissue, lymph channels and pectoral muscles, leaving only the rib cage and causing a large defect, which today is seen as a very aggressive surgery (*Ballester et al., 2009*).

Since then, resections have become increasingly smaller and more efficient. In the 1970s, Veronesi showed that conservative surgery (removing the tumour with free margins while preserving the breast) plus radiotherapy gave the same survival results as more aggressive surgeries (*Dennis et al., 2012*).

The goals of breast conserving surgery are the removal of breast cancer with an adequate surgical margin and maintenance of a breast that is cosmetically acceptable to the patient (*Benelli, 2012*).

In an attempt to resolve the conflict between oncologic safety and cosmetic satisfaction a novel approach named "Oncoplastic Surgery" has emerged and gained wide acceptance all over the world (*Mustonen and Harma, 2002*).

Plastic surgery techniques were transposed into breast-conserving therapy to avoid late unsatisfactory aesthetic results in 1980s in France by Jean-Yves Petit (Institut Goustave-Roussy), Jean-Yves Bobin (Centre Léon-Bérard) and Michel Abbes (Centre Lacassagne) (*Dennis et al., 2012*). However, *Audreisch (2006)*, considered by some as the father of oncoplastic surgery, described the technique of reconstructing a partial mastectomy defect in 1998 as a further refinement of breast conservation avoiding mastectomy, coining the term *oncoplastic* (*Cotlar et al., 2003*).

Munhoz et al. (2007) describes the modern oncoplastic breast surgery as a combination of oncologic and plastic surgery techniques to obtain oncologically sound and aesthetically pleasing results. Thus, by means of customized techniques the surgeon ensures that oncologic principles are not jeopardized while meeting the needs of the patient from an aesthetic point of view (*Haloua et al., 2013*).

Oncoplastic techniques can be classified in two large groups: volume displacement procedures and volume replacement procedures.

Volume displacement procedures combine tumor resection with immediate reconstruction of the mammary defect caused by the resection. They are indicated when a resection of less than 30% of mammary volume is preview. These include

techniques of glandular rearrangement (advancement, rotation or transposition glandular flaps) and reduction mammoplasty

Volume replacement procedures use autologous tissue flaps to replace the excised breast volume. The most used is the *latissimus dorsi* flap with or without skin. It allows the restoring of the shape and size of the breast symmetry, achieving excellent cosmetic results without the need to act on the contralateral breast. These techniques are usually reserved for patients requiring extensive local resections, those that present medium or large tumours, and those who do not wish volume loss or surgery in the healthy **(El-Marakby, 2011)**.

Round-block

All patients with a tumor in the breast may be eligible for round block technique. This simple technique may be used to avoid scars on the breast. Perimamillary scars only are then visible. This technique has no further comorbidities as compared with breast-conserving therapy and is easily acquired. The nipple-areola complex may or may not be moved higher with this technique, depending on the distance of the outer incision from the new areola incision. Thus, this technique may be used in patients who do not want to change the position of the nipple or in those with mild ptosis **(Giacalone and Dubon, 2015)**.

This technique is more suitable for patients with symmetric, small to medium-sized breasts and without major ptosis which may not require contralateral breast surgery for symmetrization. There are only a few contraindications that depend on breast size and tumor location; very large breasts and peripheral tumor location, centrally located breast tumors, tumor size > than 70% of one quadrant or multicentric or large multifocal disease in which cases real quadrantectomy or even bi-quadrantectomy may be indicated (*Giacalone and Dubon, 2015*).

Round block is performed first by de-epithelializing a rim of skin around the areola. The tumor was then accessed via an incision through the de-epithelialized skin, leaving the nipple areolar complex vascularized on the dermal pedicle. The breast tissue was then dissected as much as possible to allow complete resection of the tumor and remodeling to cover the tumor defect (*Yang et al., 2011*).

Although many studies compared the round block technique to standard wide local excisions (sWLE), no evidence of increased surgical complications was reported. A lower re-excision rate and better cosmesis were observed in the round block patients suggesting that the round block technique is not only comparable in general, but may have advantages to sWLE in selected cases (*Lim et al., 2017*).