Round Block Technique Versus Reduction Mammoplasty in Treatment of Early Breast Cancer

Thesis

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List of Abbreviations

^{18}F-FDG ` : ^{18}F-Flurodeoxyglucose ADH

: Atypical ductal hyperplasia ALH :

Atypical lobular hyperplasia ASC :

American Cancer Society ASCS :

Autogenic stem cell support BCS :

Breast-conservation surgery BCT :

Breast-conserving therapy

BI-RADS : Breast Imaging Reporting and Data System

BSGI : Breast-specific gamma imaging

CBE : Clinical breast examination

CC : Craniocaudal

CNB : Core needle biopsy

CT : Computed tomography

DCE : Dynamic contrast enhanced

DCIS : Ductal carcinoma in situ

DCIS : Differentiate between ductal carcinoma in situ

DITI : Digital infrared thermal imaging

DL : Ductal lavage

DWI : Diffusion-Weighted Imaging

ER : Estrogen receptor

FNA : Fine-needle aspiration GEP

: Gene expression profiling GLUT :

Glucose transporter proteins LCIS :

Lobular carcinoma in situ LD :

Latissimus dorsi

LHRH : Leutenizing hormone releasing hormone

MLO : Mediolateral oblique

MRBT : Modified round block technique

MRI : Magnetic resonance imaging

NAC : Nipple areola complex

NAF : Nipple aspirate fluid

PET : Positron Emission Tomography

PR : Progesterone receptor

RBT : Round block technique

TRAM : Transverse rectus abdominis myocutaneous

TRM : Therapeutic reduction mammoplasty

US : Ultrasonography

VAB : Vacuum-assisted breast biopsy

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Introduction

Early breast cancer can be defined as the presence of a mobile tumor within the breast with or without associated mobile enlarged lymph nodes, and represents the vast majority of patients who present now with breast cancer **(Haffty, et al., 2007).**

Breast-conservation surgery (BCS) is an important component of early breast cancer treatment, with a survival outcome comparable to that of radical procedures **(Veronesi, et al., 2002).**

In fact, the long-term survival of BCS with radiation is not statistically different when compared with mastectomy in patients with Stage 1 or 2 breast cancer **(Hamdi, et al., 2007).**

Among the main technical options, Therapeutic reduction mammoplasty (TRM) remains a useful procedure. Usually, the application of TRM involves resection of the tumor and remodeling the breast using an aesthetic breast reduction technique. As a consequence of rich breast tissue vascularization, the greater part of TRM has based their planning on preserving the pedicle of the nipple-areola complex (NAC) after tumor removal. Usually, the procedure is adequate for patients with moderate/larger breasts requiring excision of significant volumes of tissues and contralateral symmetrization.. With TRM, the BCS defect can be repaired and the preoperative appearance can be improved, resulting in more proportional breasts **(Munhoz, et al., 2006).**

In addition, the technique reduces the difficulty of providing radiation therapy to the remaining breast tissues with acceptably low complication rates **(Chang, et al., 2004).**

In terms of local control and oncological outcome, the added removal of a substantial volume of breast tissue could add a significant amount of safety in terms of surgical margins **(Kaur, et al., 2005).**

Defects are frequently reconstructed with TRM techniques when the patient presents with large volume breasts and there is a sufficient amount of breast tissue. The most favorable tumor location is in the lower breast pole where a conventional superior pedicle or superior-medial technique can be utilized **(Munhoz, et al., 2006).**

In patients with central tumors, an inferior pedicle is used to carry parenchyma and skin into the central defect **(Munhoz, et al., 2007).**

The round block technique (RBT) is a mastopexy technique. It is also known as doughnut mastopexy or periareolar mastopexy, which is another oncoplastic volume displacement technique used in BCS **(Clough, et al., 2010).**

The procedure begins by making two concentric periareolar incisions, resulting in a periareolar scar only. The nipple-areola complex (NAC) can be moved using this technique, depending on the distance of the outer incision from the new areola incision. In the

original RBT, the dermis is cut only on the side where the tumor is located because the NAC is supplied by dermal vessels from all sides. Therefore, this technique is difficult to perform in patients with tumors located in peripheral areas of the breast **(Kronowits, et al., 2007).**

However, **Zaha et al**. reported the use of a modified round block technique (MRBT) in which the dermis is cut on all sides, to remove tumors located in peripheral areas of the breast. In cases in which the breast excision area does not include the area under the NAC, an excellent view can be secured because the dermal flap can be made by incising around the entire outer circle. Because the view is very good, not only partial mastectomy, but also breast reshaping, can be performed easily using MRBT. **Zaha, et al., 2012** performed the original RBT in cases requiring resection of the breast tissue under the NAC and the MRBT in peripheral cases that did not require such a resection**.**