Recent Techniques in Oncoplastic Breast Surgery

Essay

Submitted for partial fulfillment of the master degree of
General Surgery

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2016

﴿وَقُل رَّبِّ زِدْنِي عِلْماً﴾

سورة طـــه الآيـــــه رقم ١١٤

Acknowledgement

First of all, all gratitude is due to **God** *almighty for blessing this work, until it has reached its end, as a part of his generous help, throughout my life.*

Really I can hardly find the words to express my gratitude to **Prof. Dr. Sameh Abd Allah Maaty**, *Professor of General Surgery , faculty of medicine, Ain Shams University, for his supervision, continuous help, encouragement throughout this work and tremendous effort he has done in the meticulous revision of the whole work. It is a great honor to work under his guidance and supervision.*

Really I can hardly find the words to express my gratitude to **Dr. Sherif Mourad Girgis**, *Lecturer of General Surgery, Faculty of Medicine, Ain Shams University for his continuous directions and meticulous revision throughout the whole work. I really appreciate his patience and support.*

Last but not least, I dedicate this work to my family, whom without their sincere emotional support, pushing me forward this work would not have ever been completed.

Samir Zohdy Moussa

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List of Abbreviations

AJCC	:	American joint committee of cancer
BCS	:	Breast conservative surgery
IHC	:	Immuno-Histo-Chemistry
NAC	:	Nipple areola complex
NC	:	Neoadjuvant chemotherapy
OBS	:	Oncoplastic breast surgery
OPS	:	Oncoplastic surgery
OPS-BCS	:	Oncoplastic surgery – breast conserving surgery
RT-PCR	:	Reverse Transcriptase-Polymerase Chain Reaction
SLN	:	Sentinel Lymph Node
TRAM	:	Transverse rectus abdominis myocutaneous

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Abstract

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 benefits.

Key words
Oncoplastic breast surgery ,,,, nipple areola complex ,,,,,
circumareolar incision ,,,, pectoralis muscle ,,,, axillary line ,,,,
conservative breast surgery ,,, volume replacement

Introduction

No other solid cancer has witnessed such a tremendous change and improvement in terms of diagnosis and management as breast cancer in the last 2 decades. This remains the most common cancer among women worldwide ***(Jemal et al., 2008).***

Oncoplastic breast surgery is a term used to describe techniques that combine the principles of surgical oncology with those of plastic surgery in an attempt to achieve a desirable aesthetic result while maintaining a low cancer recurrence rate. The use of oncoplastic techniques has been driven by the fact that up to 30% of women undergoing breast conservation surgery will have a residual deformity that might require surgical intervention. Deformities are generally seen in breast conservation surgery when more than 20% of the breast volume has been resected, as well as in tumors that are located medially, superiorly, or in the retro-areolar region ***(Rusby et al., 2014).***

In an effort to reduce the incidence of local recurrence and maintain natural breast contour, the concept of oncoplastic surgery was introduced. Oncoplastic surgery differs from standard breast conserving surgery in that the margin and volume of excision are greater than in lumpectomy, quadrantectomy

or partial mastectomy. Excision margins typically range from 1 to 2cm, although greater margins and volumes are possible ***(Rancati et al., 2013).***

For oncoplastic surgery to be efficacious the surgeon needs to obtain complete excision of the cancer with adequate surgical margins and to achieve a surgical result maintains the breasts shape and appearance over time ***(Rietjens et al., 2011).***

The resultant deformity is reconstructed neither immediately nor later using techniques related to volume displacement techniques using parenchymal remodeling; volume replacement techniques, with both local or distant tissue; and volume reduction ***(Rusby et al., 2014).***

All of these techniques have been utilized extensively and found to be useful. In general, women with smaller breasts with minimal ptosis were found to be better candidates for volume replacement procedure, e.g. Local flap, latissmusdorsi flap, lateral thoracic flap; whereas women with larger and more ptotic breasts would be better candidate for volume displacement procedures, e.g. Adjacent tissue rearrangement, reduction mammoplasty, mastopexy ***(Rancati et al., 2013).***

Aim of the work

Is to review and highlight' different procedures of oncoplastic surgery used in breast cancer and suitability of those operations' to different types of cases with special amplification on techniques, indications and safety.

Anatomy of the Breast

The breast is considered anatomically mature modified sweat glands. Mammary glands embryologically develop along the milk line which extends between the limb buds from the primordial axilla distally to the inguinal region ***(Bland, 2007)***.

Gross Anatomy of the Breast:

The breast is located within the superficial fascia of the anterior chest wall. It consists of 15 to 20 lobes of tubuloalveolar glandular tissue, fibrous connective tissues that support these lobes, and the adipose tissue that resides in parenchyma between the lobes ***(Bland, 2007)***.

Superficial pectoral fascia envelops the breast and is continuous with the superficial abdominal fascia which is called Camper's fascia. The undersurface of the breast rests on the deep pectoral fascia. The breast is supported by Cooper's suspensory ligaments which are fibrous bands connecting between the superficial and deep pectoral fasciae. ***(Ismail Jatoi, 2006)***.

A mature female breast extends from the level of the second rib superiorly to the inframammary fold which is located at the level of the sixth or seventh rib inferiorly and extends from the lateral border of the sternum medialy to the anterior axillary line laterally. Breast tissues extend into the anterior axillary fold as the *axillary tail of Spence.* ***(Bland, 2007)***.

Blood Supply of the Breast:

The breast blood supply is derived from the lateral thoracic artery, and the internal mammary artery (internal thoracic artery). Both arteries originate from the axillary artery and then enter the breast from the superolateral and superomedial aspects of the breast, respectively. Branches of these arteries anastomose with each other. The internal mammary artery gives rise to the posterior intercostal arteries, and branches of the intercostal arteries penetrate the deep surface of the breast ***(Anne and Arthur, 2007)***