ONCOPLASTIC SURGERY OF THE BREAST

Essay

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بسم الله الرحمن الرحيم
﴿ وَأَنزَلَ اللَّهُ عَلَيْكَ الْكِتَابَ وَالْحِكْمَةَ وَعَلَّمَكَ مَا لَمْ تَكُنْ تَعْلَمُ وَكَانَ فَضْلُ اللَّهِ عَلَيْكَ عَظِيمًا ﴾
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Anan Omar Ibrahim

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List of Abbreviations

Abb..... Description
ALND ..... Axillary lymph node dissection
AS..... Areola sparing
BCT..... Breast conservation therapy
BCS ..... Breast conservation surgery
BRCA 1 ..... Breast cancer antigen 1
BRCA 2 ..... Breast cancer antigen 2
CK..... Cytokeratin
DCIS ..... Ductal carcinoma in situ
DIEP ..... Deep inferior epigastric perforator flap
DSEA ..... Deep superior epigastric artery
E2 ..... Estrogen
ER ..... Estrogen receptor
FDA..... US Food and Drug Administration.
FISH..... Fluorescence in situ hybridization
GAP ..... Gluteal artery perforator flap.
HER2 ..... Human epidermal growth factor receptor 2
IGAP..... Inferior gluteal artery perforator flap.
IHC ..... Immunohistochemistry
LABC..... Locally advanced breast cancer
LDMF ..... Latissimus dorsi muscle flap
MDOT ..... Modified double opposing tab flap.
MRM ..... Modified radical mastectomy
NAC ..... Nipple areola complex
NAS..... Nipple areola sparing
NCI ..... National Cancer Institute
NOS..... No otherwise specified

List of Abbreviations (Cont…)

PMRT ..... Post mastectomy radiotherapy
PR ..... Progesterone receptor
SGAP ..... Superior gluteal artery perforator flap.
SIEA..... Superficial inferior epigastric artery flap
SLN ..... Sentinal lymph node
SLNB ..... Sentinel lymph node biopsy
SLNB ..... Sentinal lymph node biopsy
SPECT..... Single photon emission CT
SSM..... Skin sparing mastectomy
TGF..... Tumour growth factor
TNM ..... Tumor-nodes-metastasis
TRAM..... Transverse rectus abdominis myocutaneous flap
TUG ..... Transverse upper gracilis musculocutaneous flap.
VRAM ..... Vertical rectus abdominus myocutaneous flap

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INTRODUCTION

Breast cancer (malignant breast neoplasm) is cancer originating from breast tissue most commonly from the inner lining of the ducts or the lobules that supply the ducts. Prognosis and survival rates vary greatly depending on the cancer type and staging.[1]

Diagnosis of breast cancer and a treatment plan that includes mastectomy can profoundly affect the life of patients. Such patients have concerns about disfigurement and anxiety about their future lives. These concerns are addressed with reconstructive techniques that have been developed to provide not only a return to normal clothing and to their full activities, but also a restoration of beauty and femininity.[2]

Breast reconstruction is a surgical procedure that restores the shape of the breast after mastectomy. Different approaches for breast reconstruction include tissue expanders, implants, and autogenous tissue reconstruction or using a combination of both implants and autogenous tissue.[3]

Breast reconstruction now occupies an important place in the overall modern treatment plan for women who face mastectomy. The art of breast reconstruction has undergone commensurate evolution over the last 20 years. An ideal reconstructive technique should be safe, reliable, and reproducible,

with limited or no resultant long-term morbidity. Such a technique would replace the breast with tissue of similar texture, producing an aesthetic result indistinguishable from the natural breast.[4]

The optimal timing for breast reconstruction for patients with early stage breast cancer who are scheduled to undergo mastectomy and desire breast reconstruction depends on whether post-mastectomy radiation therapy will be needed. Immediate reconstruction offers the best aesthetic outcomes if post-mastectomy radiation therapy is not needed, however, if radiation therapy is required, delayed reconstruction is preferable to avoid potential aesthetic and radiation-delivery problems.[5]

Flap based breast reconstruction is a major procedure which prolongs the time of the operation and extends the recovery time to several weeks. In addition, other complications may also include poor wound healing, hernia, seroma, infection and tissue necrosis due to insufficient blood supply.[6]

Recovery from implant based reconstruction is generally faster than with flap based reconstructions but both take at least three to six weeks to recover and both require additional surgeries in order to construct a new areola and nipple. All recipients of these operations should avoid strenuous sports, overhead lifting and sexual activity during the recovery period.[1]

Breast reconstruction using implants carries the possibility of significant complications such as infection, implant rotation and capsular contraction due to fiberous tissue formation around the implant compressing both the implant and breast tissue into a hard or unnatural shape. Correcting any of these complications may require additional surgery.[7]

Breast reconstruction with implants often requires the use of a tissue expander to create room for the implant before it can be placed because after mastectomy there is less skin remaining at the site of the breast than which originally existed. For an implant to be comfortably placed, the surgeon may first surgically insert a balloon like tissue expander under the chest muscle.[6]

Nowadays, the chief concern is primarily to control the disease. Modern treatment plans must entail decisions regarding reconstruction such as type of implants and flaps, as well as treatment of the skin envelope.[8]

AIM OF THE WORK

The aim of this essay is to revise the latest techniques used in oncoplastic surgery to create an aesthetically perfect breast after treatment of breast cancer.

AESTHETIC ANATOMYOF THE BREAST

Bostwick defines the aesthetics of the breast in two senses (tactile and visual). The attractive, aesthetically pleasing breast is charactarized by proper symmetry, flow, contour and proportion. Tactile aesthetic considerations are softness, smoothness, and sensitivity to touch, which is practically important in the nipple areola complex. Normal volume should range from 300g to 500g with more fullness lateral and inferior to the nipple areola complex and a 45 degree lateral inclination. Ideally, strong cutaneous and fascial support allows the parenchyma to remain above the infa mammary crease.[9]

Anatomy of the Breast

The breasts are conical in shape and are located, one on each side, within the subcutaneous layers of the thoracic wall, anterior to the pectoralis muscle. They extend superiorly as far as the level of the second rib, inferiorly as far as the level of the sixth or seventh ribs, laterally as far as the anterior axiallry line (sometimes as far as the midaxillary line) and medially they reach the lateral margin of the sternum. Posteriorly, they make contact with the fascia of the pectoralis major, serratus anterior and external oblique muscle and the most cranial portion of the rectus abdominis muscle.[10]