Assessment of Mastectomy Flap Fixation in Reducing the Seroma Formation in Breast Carcinoma Patients

Submitted for partial fulfillment of the MD degree in General Surgery

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رَبِّقَدْ آتَيْتَنِي مِنَ الْمُلْكِ
وَعَلَّمْتَنِي مِن
تَأْوِيلِالأَحَادِيثِ فَاطِرَ
السَّمَاوَاتِ وَالأَرْضِ
أَنتَ وَلِيِّي فِيالدُّنْيَا
وَالآخِرَةِ تَوَفَّنِي مُسْلِمًا
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List of Abbreviations

APBI	Accelerated partial breast irradiation
AC	Adriamycin and Cyclophosphamide
ASC	American Cancer Society
AJCC	American Joint Committee on Cancer
ADCC	Antibody-dependent cellular cytotoxicity
APO	Apoprotein
ADC	Apparent diffusion coefficient
AIs	Aromatase inhibitors
ADH	Atypical ductal hyperplasia
ALH	Atypical lobular hyperplasia
ALND	Axillary lymph node dissection
BMI	Body mass index
BCS	Breast conserving surgery
BCT	Breast conserving therapy
BI-RADS	Breast Imaging Reporting and Data System
BSGI	Breast-specific gamma imaging
CEA	Carcino embryonic atigen
CVS	Cardiovascular system
CNS	Central nervous system
CHO	Choline-containing compounds
CBE	Clinical breast examination
C T	Computed tomography
CNB	Core needle biopsy
C C	Craniocaudal
CMF	cyclophosphamide, methotrexate, and fluorouracil
DWI	Diffusion-weighted imaging
DITI	Digital infrared thermal imaging
DCIS	Ductal carcinoma in situ
DL	Ductal lavage
DCE MRI	Dynamic contrast enhanced magnetic resonance imaging
EBCTCG	Early Breast Cancer Trialists' Collaborative Group
EC	Epirubicin and cyclophosphamide
ER	Estrogen receptor
ECD	Extracellular domain
FAC	5-fluorouracil, adriamycin, and cyclophosphamide

FNA	Fine needle aspiration

List of Abbreviations (Cont.)

FFTP	First full term pregnancy
FEC	Fluorouracil, epirubicin, and cyclophosphamide
FUS	Focused ultrasound
FDA	Food and Drug Administration
GEP	Gene expression profiling
GLUT	Glucose transporter proteins
Gy	Gray
HER2/neu	Human Epidermal growth factor Receptor 2
HDL	High density lipoprotein
HIFU	High-intensity focused ultrasound
HR	Hormone receptor
ICG	Indocyanine green
ILA	Interstitial laser ablation
IDC	Invasive duct carcinoma
ILC	Invasive lobular carcinoma
LCIS	Lobular carcinoma in situ
LHRH	luteinizing hormone-releasing hormone
LHRH-As	luteinizing hormone-releasing hormone agonists
MRI	Magnetic Resonance Imaging
MLO	Mediolateral oblique
MM	Methotrexate and mitozantrone
MRM	Modified Radical Mastectomy
NIRF	Near-infrared fluorescence optical imaging
NAC	Nipple-areolar complex
NAF	Nipple aspirate fluid
NST	No special type
NOS	Not otherwise specified
OCPs	oral conhaceptive pills
PET	Positron Emission Tomography
PR	Progesterone receptor
RT	Radiation therapy
RCTs	Randomized Controlled Trails
RFA	Radiofrequency ablation
ROLL	Radioguided occult lesions localization
SLNB	Sentinel lymph node biopsy
TAM	Tamoxifen

TZ	Trastuzumab
TG	Triglyceride

List of Abbreviations (Cont.)

US	Ultrasound
VAB	Vacuum-assisted biopsy
VS	Versus
WBI	Whole breast irradiation
1H-MRSI	Proton magnetic resonance spectroscopic imaging
3D-CRT	three-dimensional conformal external beam radiotherapy
18F-FDG	18F-Flurodeoxyglucose
99mTc	Technetium-99m

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Introduction

Breast carcinoma is a major health issue in modern society. The united states (US) National Cancer Institute estimates that 12.7% of women born today will be diagnosed with breast carcinoma during the course of their lifetime. Breast carcinoma can impact patients psychologically as well as organically, which can manifest as postmastectomy depression, increased anxiety, shame, and occasional ideas of suicide ***(Stavrou et al., 2009).***

Breast carcinoma is usually treated with surgery, chemotherapy or radiation, or both. Treatment is given with increasing aggressiveness according to the prognosis and risk of recurrence ***(Stavrou et al., 2009).***

Seroma is formed by acute inflammatory exudates in response to surgical trauma and acute phase of wound healing. Extensive dissection in mastectomy and axillary lymphadenectomy damage several blood vessels and lymphatics with subsequent oozing of blood and lymphatic fluid from a larger raw surface area when compared with breast-conserving procedures leads to seroma formation. Fluid accumulation elevates the flaps from the chest wall and axilla thereby hampering their adherence to the chest wall bed and delay healing ***(Hashemi et al., 2004).***