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Immediate versus delayed breast reconstruction in post mastectomy patients

Essay

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Contents

<i>No</i>	<i>Title</i>	<i>Page</i>
1	Introduction	1
2	Aim of the work	4
3	Anatomical consideration of female breast	5
4	Bio pathology of breast cancer	27
5	Management of breast cancer	38
6	Different techniques in primary Breast reconstruction	89
7	Summary	180
8	References	183
9	Arabic summary	—

List of Abbreviations

<i>Abb</i>	<i>Description</i>
AJCC	American joint committee on cancer
AIs	Aromatase inhibitors
BC	Breast cancer
BCS	Breast conservative surgery
CMF	cyclophosphamide, methotrexate and fluorouracil
CT	Computed tomography scanning
DCIS	Ductal carcinoma in situ
DIEP	Deep Inferior Epigastric Artery Perforator Flap
ELD	Extended latissimus dorsi flap
ER	Estrogen receptor
FAC	5-fluorouracil, Adriamycin [doxorubicin], and cyclophosphamide
FDA	Food and Drug Administration
FNAC	Fine needle aspiration cytology
FEC	Fluorouracil, Epirubicin and, Cyclophosphamide
IMF	Infra mammary fold
LABC	Locally advanced breast cancer
LCIS	Lobular carcinoma in situ
LDMF	latissimus dorsi muscle flap
MRI	Magnetic resonance imaging
MRM	Modified radical mastectomy
NAC	Nipple areola complex
NAR	Nipple and areola reconstruction

NSSM	Non Skin sparing mastectomy
PMRT	Post mastectomy radiotherapy
PR	Progestron receptor
RT-PCR	Reverse transcriptase polymerase chain reaction
RTH	Radiotherapy
SIEA	superficial inferior epigastric artery
SLNB	Sentinel lymph node biopsy
SSM	Skin sparing mastectomy
TDAP	thoracodorsal artery perforator
TRAM	Transverse rectus abdominis muscle
US	Ultrasonography
VRAM	Vertical rectus abdominis muscle

List of Tables

<i>No.</i>	<i>Description</i>	<i>Page</i>
1	Manchester system (1940) after Yeatman and Bland...	
2	The revised TNM staging system	
3	breast cancer and its possible treatment modalities	
4	The most common chemotherapy regimens in practical uses	
5	breast cancer adjuvant systemic therapy	
6	<i>Advantages of autologous versus prosthetic reconstruction</i>	
7	Advantages of immediate versus delayed breast reconstruction	

List of Figures

<i>Fig no</i>	<i>Title</i>	<i>Page</i>
1	Superficial dissection of female pectoral region	
2	Sagittal section of female breast.	
3	Arterial distribution of blood to the breast, axilla, and chest wall	
4	Venous drainage of the breast, axilla, and chest wall	
5	Walls and contents of the axilla	
6	Boundaries & contents of axilla	
7	Lymphatics of the Breast	
8	The main axillary lymph nodes.	
9	Innervations of the breast.	
10	Nerves of the breast and axilla	
11	Examination of the breast.	
12	Breast quadrants & Location of primary breast cancer	
13	Signs of carcinoma& mammography	
14	Axial computed tomographic (CT) scan at the level of the female breasts	
15	MRI of the breast normal and carcinoma	
16	Needle biopsy	
17	Surgery for breast cancer	
18	Lumpectomy.	
19	Modified radical mastectomy	
20	Incision of modified radical mastectomy	
21	Blood Supply of latissimus dorsi muscle	

22	LDM Flap markings and underlying structures.	
23	LDM flap after elevation showing the diffuse deep layer of fat extending over the entire surface area of the muscle	
24	Plan for reconstruction using a star pattern ELD flap & the low horizontal skin pattern	
25	Blood supply to the rectus abdominis muscle and overlying skin.	
26	Distribution of perforators along TRAM	
27	(A) Superiorly based TRAM flap. (B) Mono pedicled TRAM flap and dissection prior to flap molding	
28	Skin zones of the TRAM flap. Despite the traditional ordering of the zones, it is now believed that zone 3 receives more robust blood flow than zone 2	
29	Pedicled TRAM flap technique	
30	The transverse rectus abdominis myocutaneous flap rotation.	
31	(A) Superiorly based bipedicled TRAM flap. (B) Bipedicled TRAM flap dissection.	
32	(A) Original description of the four zones of perfusion of the lower abdomen with respect to a pedicled TRAM flap (B) Current description of the four zones of perfusion of the lower abdomen with respect to free flaps	
33	Free TRAM flap technique.	
34	Anatomy of the deep inferior epigastric artery flap	
35	(A) A patient with left breast cancer and a history of multiple abdominal surgeries. (B) Design of an S-GAP flap. (c) An S-GAP flap. (d) Following immediate reconstruction of left breast with a free S-GAP flap	
36	Supercharging and turbocharging TRAM flap	
37	Skin island location of the SGAP flap.	
38	A) Superior gluteal vessel dissection through the retracted gluteus maximus muscle. B) Schematic of the gluteal perforator flap, inset into the defect <i>via</i> the internal mammary vessels, and donor site closure.	

39	Design of the Rubens flap.	
40	Forms of fixed volume breast implants	
41	Use of Tissue expander in breast reconstruction	
42	The expander is removed, and a permanent implant is placed beneath the pectoralis major muscle.	
43	Example of a “double bubble.” Complication of implant	
44	Skate flap for nipple reconstruction	
45	C-V Flap	
46	Design of the MDOT flap	
47	Modified purse string technique for NAR	
48	Algorithm for choosing a technique for unilateral breast reconstruction	
49	Algorithm for choosing a technique for bilateral breast reconstruction	
50	10 year survival rate between lumpectomy, mastectomy with reconstruction and without reconstruction	
51	Algorithm for management of breast cancer	

Introduction

The breast is an important symbol of femininity. It plays an important role in the woman's life whether functionally , psychologically or emotionally. Those with breast deformities often experience loss of self confidence that may affect their everyday life and may lead to adverse consequences including anxiety, depression and change in body image (*Roth&lowery.,2005*).

Breast cancer is currently the top cancer in women worldwide, both in the developed and the developing world. The majority of breast cancer deaths occur in low- and middle-income countries, where most of the women are diagnosed in late stages due mainly to lack of awareness and barriers to access to health services. (*WHO.,2011*).

The two main options for management of the primary breast cancer are total mastectomy (simple mastectomy, modified radical mastectomy , radical or Halstead mastectomy) and partial mastectomy . Although partial mastectomies (lumpectomy, segmental excision or quadrantectomy) conserve nipple and areola complex and native breast tissue, asymmetry and distortion of the breast can still occur. (*Gui et al .,2008*). Breast conserving surgery involves removing the breast cancer and small amount of healthy tissue around it (called surgical margin).Some women also have one or more lymph nodes removed from the axilla. (*Cunninghamam et al., 2007*).

The ideal goal of every post mastectomy breast reconstruction is to achieve a breast that is as identical as possible to the contralateral one in size, shape, consistency and mobility. At the same time it's essential to rely on the simplest and safest reconstructive techniques. (*Alderman et al.,2000*).

The procedures of breast reconstruction are one stage breast reconstruction (done at the time of mastectomy), and two stages; restoration of the breast mound and reconstruction of the nipple-areola complex.

Reconstruction of the breast mound itself can be performed with the use of either implants or autogenous tissues. (*Cordeiro., 2008*).

A breast implant is a prosthesis that can be used in breast reconstruction to correct size, form and feel of woman's breasts. There are different types of implant devices, defined by their filler material: silicone shell filled with salt water (sterile saline), silicone gel-filled implants and the alternative composition featured miscellaneous fillers, such as soy oil, poly propylene string, etc (*Namnoum., 2009*). In some cases after mastectomy, the remaining skin isn't sufficient to allow primary implant placement, and tissue expansion is often required. (*Meretoja et al., 2007*).

Breast reconstruction by tissue flap procedures uses tissues from the back, abdomen, thigh or buttocks to rebuild the breast. In pedicled flaps skin, muscle and fat are moved from the abdomen (TRAM-transverse rectus abdominis myocutaneous flap) or from the back (Latissimus Dorsi flap) to the chest by tunneling it under the skin so that blood supply to the muscle doesn't need to be cut. Free flap microsurgical procedures use perforator flaps – skin and fat with attached vein and artery, but without any muscle, this is called (DIEP) deep inferior epigastric artery flap when it's taken from the lower abdominal area. The same technology can be used to form gluteal flap (SGAP or IGAP – superior or inferior gluteal artery perforator). Also TRAM free flap is similar to DIEP flap as it's based on deep inferior epigastric vessels, but it uses small portion of the rectus muscle with skin and fat. (*Djohan ., 2008*)

Small to moderate-sized defects can be reconstructed using a procedure known as *fat grafting*. Fat is liposuctioned from one part of the patient's body, purified and then injected into the breast to fill the contour defect caused by the lumpectomy. This is a particularly good option for small contour defects. More than one fat grafting procedure may be required for best results. The likelihood of needing multiple fat grafting procedures increases as the size of the defect increases. (*Berrino et al., 2005*).

introduction

The creation of nipple-areola complex following breast reconstruction improves the cosmetic outcome, and many patients may request such a procedure. (*Jatoi et al., 2006*).

Timing of the breast reconstruction after mastectomy is determined primarily by the patient factors (breast size, shape , size of tumor , fitness for surgery) and need for post mastectomy radiation therapy. (*Ananthakrishnan et al., 2008*).

Nowadays breast cancer is considered a big problem all over the world. Total mastectomy plays an important role in treatment of breast cancer although it is a devastating operation affecting on the patient's life. Partial mastectomy or breast conserving surgery proved to be an effective alternative with lower risk and much better physical and psychological impact. In this essay we will discuss the management of breast cancer, different modalities and timing (immediate or delayed) of breast reconstruction.

Aim of the work

The aim of this work is to determine the recent trends in post mastectomy breast reconstruction and the correlation between timing of reconstruction and the kind of tumor and its reconstructive techniques.