Comparison between Immediate and Delayed Prosthetic Breast Reconstruction Following Mastectomy.

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Dedication

To *my* ***Father and Mother****, who gave me life on a plate of gold.*

To *my* ***Wife and son****, who were there inspiring and motivating.*

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Abbreviation	*Full term*
AFG.	*Autologus fat grafting.*
AJC.	*American joint commission of cancer staging.*
CC.	*Cubic centimeter.*
DBR.	*Delayed breast reconstruction.*
IBR.	*Immediate breast reconstruction.*
IDC.	*Invasive ductal carcinoma.*
LCIS.	*Lobular carcinoma in situ.*
LD.	*Latissmus dorsi myocutaneous flap.*
NIWCs.	*Non infectious wound complications.*
PMRT.	*Post mastectomy radiotherapy.*
SSI.	*Surgical site infection.*
SSM.	*Skin sparing mastectomy*
TRAM.	*Transverse Rectus Abdominis myocutaneous flap.*
UICC.	*International union against cancer.*

Introduction

Breast is considered a significant component of feminine character and health, a woman's reaction to any actual or suspected disease of the breast may include fear of disfigurement, fear of loss of sexual attractiveness and fear of death. Men have similar fear regarding personal experience with breast disease of that of a loved one.

Breast cancer is the leading cause of cancer death among women worldwide, with approximately 1.7 million new diagnoses and 521,900 deaths occurring worldwide in 2012. The most important modality of breast cancer therapy is surgical treatment, which has become increasingly less mutilating over the last century. Until the 1970s, breast cancer was treated with radical mastectomy. This was extremely disfiguring for patients and did not lend itself to optimal reconstructive options. In the 1970s, other types of mastectomy were introduced, which increased the reconstructive possibilities ***(Torre LA, 2015)***.

In Egypt, breast cancer represents 35% of female cancers, came as number one in ranking of malignant tumors constituting 17.5% of total malignant cases presented to the national cancer institute ***(Cancer Registry, 2016).***

Therefore, while many women undergoing mastectomies eventually adjust to their deformity, some never do so, and suffer morbidity related to self-esteem, interpersonal relationships, discomforts and embarrassments. The lives of these women can be transformed by reconstruction of the breast. Hence, the possibility of breast reconstruction needs to be considered for all women requiring mastectomies for whatever reason ***(Bostwick, 1990*)**.

Breast reconstruction after mastectomy has evolved over the last century to be an integral component in the therapy for patients with breast cancer. Breast reconstruction originally was designed to reduce post mastectomy complications and to correct chest wall deformity, but its value has been recognized to extend past this limited view of use. The goals for patients undergoing reconstruction are to correct the anatomic defect and to restore form and breast symmetry **(*Dehn T*, 2007).**

In post mastectomy patients, the body image may result in negative psychological consequences. Replacement of the breast restores the self-image that may be lost as a consequence of mastectomy. Reconstruction of the breast mound has consistently improved with multiple techniques that are selected on the basis of the extent of the defect and the patient's and surgeon's preferences **(*Dehn T*, 2007).**

Within the last 30 years the technical emphasis has focused on the use of tissue expanders, implants, latissimusdorsi myocutaneous transfer, and the transverse rectusabdominis myocutaneous (TRAM) flap and free flaps to achieve adequate breast restoration. Although all of these methods are individually sufficient for reconstruction, surgical feasibility and patient preference dictate their use **(*Dehn T*, 2007).**

The optimal timing of breast reconstruction is controversial and may be classified in various ways, such as reconstruction type and time point. The latter includes delayed breast reconstruction (DBR) and immediate breast reconstruction during the same surgery **(*Dehn T*, 2007).**

Aim of Work

This thesis aims to compare the outcomes of Immediate versus Delayed prosthetic breast reconstruction, Together with highlighting the importance of immediate reconstruction when it is feasible.

CHAPTER 1
EMBRYOLOGY OF THE FEMALE BREAST

The breast begins to develop at approximately the fifth week of fetal development. An array of local and systemic growth factors and hormones regulate this sequence of highly ordered events. The breast originates from paired linear ectodermal ridges or mammary ridges which are thickened strips of ectoderm extending bilaterally on the ventral surface of the embryo from the axillary to the inguinal regions. These epithelial cords initially appear as 15–20 buds ***(Hunt et al, 2010).***

During the seventh week in utero, these buds undergo apoptosis in human embryos, with a single pair of solid buds persisting at the fourth or fifth intercostal space: the primary mammary buds. Incomplete involution of the linear ectodermal ridge leads to the development of ectopic breast tissue (polymastia) and/or supernumerary nipples (polythelia) along the mammary ridge, which may be found in 1–6% of individuals ***(Sabel, 2009).***

The breasts subsequently begin to develop as these primary buds of ectoderm penetrate downward into the underlying mesoderm. By the 12^{th}week of gestation, the primary mammary buds burgeon into secondary buds, which will eventually form the mammary lobules. In the fifth month in utero, the mammary ridge penetrates the underlying mesoderm, sending 15–20 branching ingrowths radially into the developing breast ***(Moore and Persaud, 1998).***