



بسم الله الرحمن الرحيم

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EFFECT OF LOCAL GLANDULAR FLAP ON SEROMA IN CONSERVATIVE BREAST SURGERY

Thesis

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List of Abbreviations

Abb.	Full term
BCS.....	Breast conserving surgery
CT	Computed tomography
DCIS	Ductal carcinoma insitu
EGFR.....	Epidermal growth factor receptor
IDC	Invasive ductal carcinoma
ILC.....	Invasive lobular carcinoma
IMF	Inframammary fold
LCIS	Lobular carcinoma in situ
NAC	Nipple and areola complex
NPI	Nottingham prognostic index
NST.....	No special type

INTRODUCTION

Seroma is an abnormal collection of serous fluid in the dead space of post-mastectomy skin flap, axilla or following breast conserving surgery and is the most common early wound sequel. Seroma represent the most frequent complication of breast cancer surgery. The reported incidence of seroma ranges from 25% to 50% and the rate for axillary dissection is approximately 25%. This complication may prolong recovery, length of hospital stay and health budget. It can also delay the initiation of adjuvant therapy, predispose to wound infection, delay wound healing and has also been linked to arm lymphoedema. The main pathophysiology of seroma is still poorly understood (*Chilson et al., 2015*).

A glandular rotation flap technique has been widely used for relatively small defects of the breast. However, this technique is hardly performed for relatively large defects because of the difficulty in obtaining a sufficient amount of tissue to fill the defect. In particular, when the tumor is located in the lower quadrant, a reduction mammoplasty can be an appropriate surgical approach. However, in this case, the resultant asymmetry in both the breasts is inevitable. Therefore, additional reduction surgery of the contralateral breast is an essential procedure to ensure bilateral symmetry of the breasts (*McCulley et al., 2012*).

Recent innovations, to further enhance aesthetic outcomes, has been the development of “oncoplastic” surgery,

which broadly refers to reconstruction of partial mastectomy defects. A variety of techniques have been described for partial mastectomy reconstruction, including local tissue rearrangement, reconstruction through reduction mammoplasty or mastopexy approaches, and transfer of local-regional flaps. The outcomes following oncoplastic surgery has shown numerous benefits to this reconstructive approach, including improved aesthetic outcomes, better control of tumor margins, high patient satisfaction, and the ability to extend the option of breast conservation (*Losken et al., 2014*).

AIM OF THE WORK

This study aims to assess the effect of local glandular flap on seroma reduction.

Chapter 1**ANATOMY OF THE BREAST****Development of the Breast:**

The breast is a modified type of apocrine sweat gland which begins to develop at approximately the fifth week of fetal development. The human breast consists of the parenchyma and stroma, originating from ectodermal and mesodermal elements, respectively (*Javed et al., 2013*).

Breast parenchyma develops as an invagination of chest wall ectoderm, which forms a series of branching ducts and acini of the mammary glands, but the supporting stromal tissue is derived from the mesenchyme (*Javed et al., 2013*).

Around day 35 of gestation, proliferation of paired areas of epithelial cells in the epidermis occurs. These discrete areas of proliferation extend in a line between the fetal axilla and inguinal region and form two ridges called the mammary crests or milk lines (figure 1) (*Sabel, 2009*).

Most of the mammary crest atrophies except for paired solid epithelial masses in the pectoral region at the fourth or fifth intercostal space, which form 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*).

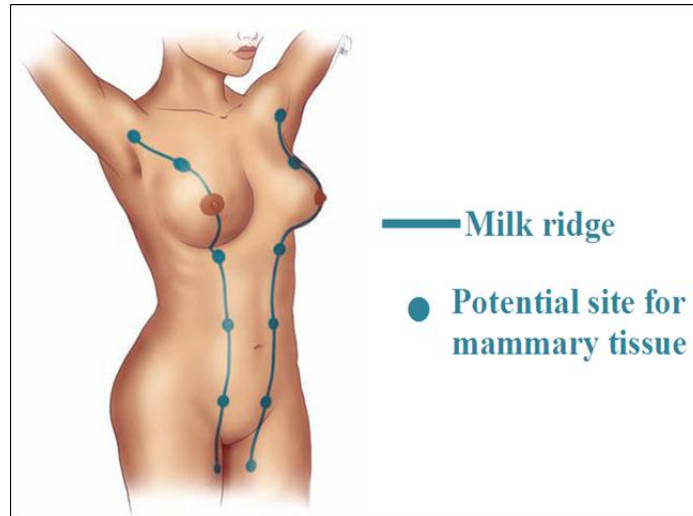


Figure (1): The mammary milk line (*Moore et al., 2011*).

The nipple is created with smooth muscle fibers aligned in a circular and longitudinal fashion. The surrounding areola is formed by the ectoderm during the fifth month of gestation. At birth, males and females have identical breasts, formed by the major lactiferous ducts. Shortly after birth, the nipple begins to protrude from the areola, encompassing 10–15 terminal duct outlets (*Lemaine et al., 2013*).

Extent and location:

The adult female breast is located within the superficial fascia of the anterior chest wall. The base of the breast extends from the second rib superiorly to the sixth or seventh rib inferiorly and from the sternal border medially to the mid-axillary line laterally. Two-thirds of the base of the breast lies anterior to the pectoralis major muscle; the remainder lies anterior to the serratus anterior muscle. A small part may lie

over the aponeurosis of the external oblique muscle and the upper extent of the rectus sheath. Breast tissue extends commonly into the anterior axillary fold as the axillary tail of Spence (Figure 2). This is the only breast tissue found normally beneath the deep fascia (*Hunt et al., 2015*).

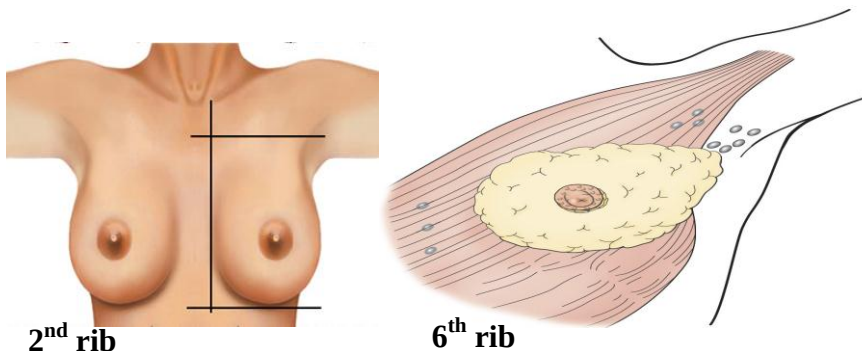


Figure (2): Axillary tail of spence
(*Skandalakis and Skandalakis, 2014*).

Nipple-areola complex:

The nipple-areola complex is a specialized region of the mammary gland. It is a major anatomic landmark of the breast, serves to drain and express breast milk during lactation, and contains specialized cells for this function (*An et al., 2010*).

The areola has a slightly raised disc shape and a varying size, on average 3 to 6 cm, normally situated around the fourth rib level. It has a rosy hue, during puberty, the pigment becomes darker, and becomes irreversibly pigmented (chestnut brown) from the second month of gestation (*Zucca-Matthes et al., 2016*).

In the center of the areola emerges a papillary cylindrical formation varying in size, averaging 10 to 12 mm wide by 9 to 10 mm in height. Its skin is similar to the areola, but has no sebaceous glands. It has 10 to 20 corresponding pores as the output of the milk ducts (*Zucca-Matthes et al., 2016*).

The relationship between the Nipple and areola complex (NAC) and the Inframammary fold (IMF) can differ according to the breast and the patient's age. The nipple is usually located between 19-and 25 cm from the manubrium, between 9 and 12 cm from the medial line of the sternum, and between 7 and 10 cm from the IMF. These distances are relative and may differ according to the ethnic origin of the patient, and do not represent an anatomical abnormality (*Skandalakis and Skandalakis, 2014*).

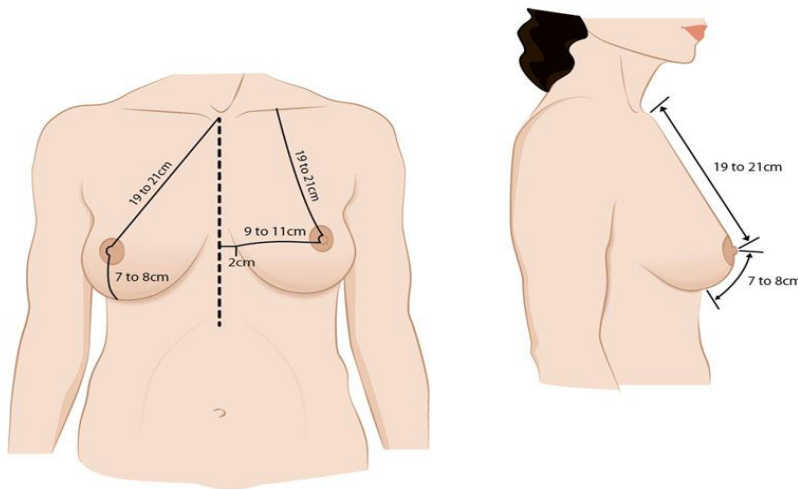


Figure (3): Surface anatomy demonstrating the relations between the nipple and areola complex, the sternum, and the inframammary fold (*Urban and Rietjens, 2013*).