Comparative study between the standard lumpectomy and other modalities of oncoplastic surgical techniques for the partial mastectomy

Essay

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List of contents

List of tables

Introduction

This novel approach was first referred to as "oncoplastic surgery" by W. Audretsch in 1994.
(Audretsch etal.,1994)

Until recently, the term "oncoplastic surgery" had various meanings depending on the expertise and specialty training of the surgeon.
(Kronowitz SJ, etal.,2006)

In the plastic surgery literature, oncoplastic surgery typically refers to large partial mastectomy combined with myocutaneous flap reconstruction, such as the Latissimus Dorsi flap or the Transverse Rectus Abdominis myocutaneous (TRAM) flap.

For breast conservation to be efficacious, the surgeon needs (1) to obtain complete excision of the cancer with adequate surgical margin width and (2) to achieve a surgical result that maintains the breast's shape and appearance over time.

For larger cancers, it can be technically challenging to simultaneously address both of these goals in the same operation. Simple flap advancement "mastopexy" techniques developed by plastic surgeons for breast reduction can reshape the breast immediately after larger breast cancer resections.

By contrast, small- or intermediate-sized cancers can generally be managed nicely using simple oncoplastic techniques that facilitate wide excision of the cancer and preserve the shape and appearance of the breast.

In oncoplastic surgery, by advancing locally available fibroglandular tissue along the chest wall, the defect created by partial mastectomy is closed with a breast "fibroglandular flap," called mastopexy closure.

(Lisa Jacobs, etal., 2011)

A circumferential incision was made without excision of the periareolar skin, and subcutaneous dissection was extended to the entire breast. The wound could be widened and moved onto the distant tumor by application of a wound retractor. Partial mastectomy was then performed under direct vision. The wound was easily closed without tension.
(Elsevier, etal. , 2013)

Resection of inferior pole breast cancers commonly produces inferior cosmetic results, particularly when resection of skin is required. The triangle resection with mastopexy is one of several oncoplastic breast surgical techniques that enable resection of inferior pole lesions with preservation if not improvement of breast cosmoses.
(Dennis R. Holmes, etal., 2012)

Multiple technically simple techniques have been described; Parallelogram mastopexy lumpectomy, Batwing mastopexy lumpectomy, Donut Mastopexy Lumpectomy, the reduction mastopexy lumpectomy
(Chin-Yau Chen, etal., 2011_)

Also modified round block technique.
(Hisamitsu Zahaetal., 2013)

And triangle Resection with Crescent Mastopexy.
(Melvin J. Silverstein, etal., 2012)

AIM OF THE WORK

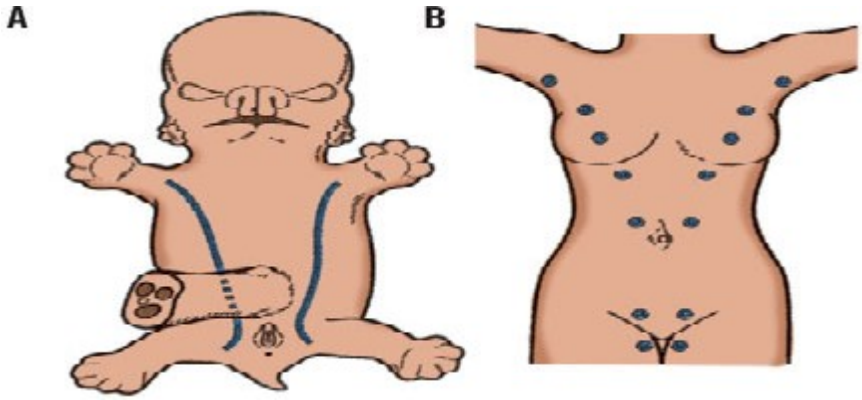
Is to compare between the standard lumpectomy and other modalities of oncoplastic surgical techniques for the partial mastectomy; Parallelogram mastopexy lumpectomy. Batwing mastopexy lumpectomy, Donut Mastopexy Lumpectomy, the reduction mastopexy lumpectomy, Triangle Resection with Crescent Mastopexy, Modified round block technique.

Chapter 1

Embryology & Development of the breast

During the second month of gestation, two bands of slightly thickened ectoderm appear on the ventral body wall extending from above the axilla to below the groin. These bands are the milk lines and represent potential mammary gland tissue (Fig.1). In humans, only the pectoral portion of these bands will persist and ultimately develop into adult mammary glands.

Fig.1: A. The milk lines in a generalized mammalian embryo. Mammary glands form along these lines. B. Common sites of formation of supernumerary nipples or mammary glands along the course of the milk lines in the human.
(St. Louis: Mosby, 2011)



The glandular portion of the breast develops from the ectoderm. It arises from the local thickening of the epidermis (Fig. 2A). From this thickening, 16 to 24 buds of ectodermal cells grow into the underlying mesoderm (dermis) during the twelfth week (Fig. 2B). These buds, at first solid, will become canalized near term to form the

lactiferous ducts (Fig. 2C). The tips of the buds will give rise to the secretory acini during lactation. The epidermal surface of the future nipple is at first a shallow pit (Fig. 2D). Near term it becomes everted (Fig. 2E)
(Prof. Malkanthi Chandrasekhar etal., 2013)

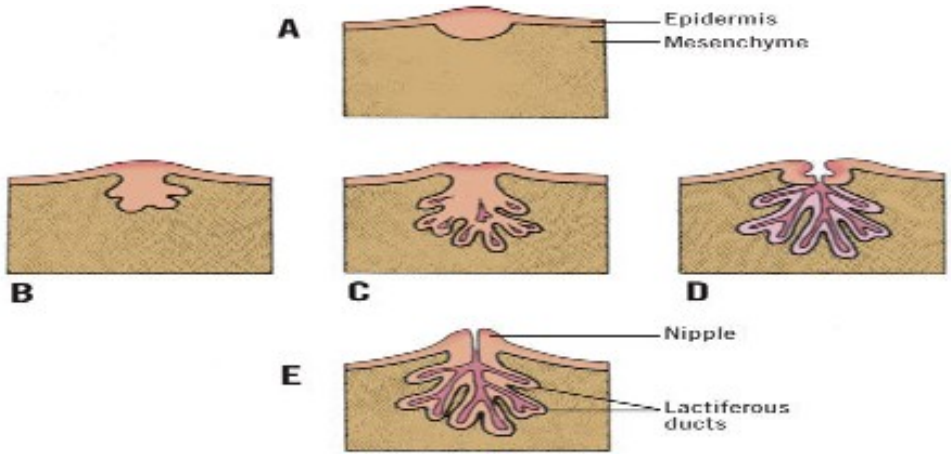


Fig. 2: Development of the breast. A-D. Stages in the formation of the duct system and potential glandular tissue from the epidermis. Connective-tissue septa are derived from the mesenchyme of the dermis. E. Eversion of the nipple near birth.
(Jayasinghe Y CR.etal.,2010)

The mammary glands are often considered to be modified sweat glands. The areolar glands (of Montgomery) around, but not on the nipple, appear to be transitional between sweat and lactiferous glands. They serve to lubricate the nipple during lactation (milk production and nursing). The connective-tissue stroma of the breast forms from the mesoderm, which will form the dermis of the skin and the superficial fascia) as well. Fibers forming the suspensory ligaments (of Cooper) will develop from both layers.
(Jayasinghe Y CR.etal., 2010)

Morphology

Each breast is composed of between 15 and 20 lobes within the superficial fascia, which is loosely connected with the deep fascia. These lobes, together with their ducts, are anatomic units, but not surgical units. Between the superficial and deep fasciae is the retromammary (submammary) space, which is rich in lymphatics. In the fat-free area under the areola, the dilated portions of the lactiferous ducts (the lactiferous sinuses) are the only sites of actual milk storage. The ducts are surrounded by a sheath of soft, cellular, intralobular connective tissue derived from the upper papillary layer of the dermis. Between the ducts is the denser, less cellular connective tissue from the reticular layer of the dermis. Because of the radial arrangement of the lobes with respect to the nipple, the site of production of serous or sanguinous fluid emerging upon the surface of the nipple can be determined by stroking the breast tissue with the tip of a finger beginning peripherally and terminating at the nipple .The suspensory ligaments of Cooper form a network of strong, irregularly-shaped connective-tissue strands or bands connecting the dermis of the skin with the deep layer of superficial fascia, passing between the lobes of parenchyma and attaching to the parenchymal elements and ducts .
(Jayasinghe Y CR.etal., 2010)