

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

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سورة البقرة الآية: ٢٢

Pattern of Axillary Lymph Node Metastasis in Cases Subjected to Conservative Surgery for Breast Cancer

Essay

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List of Abbreviations

AC:	Adriamycin, cyclophosphamide
AF:	Activating factor
AIs:	Aromatase Inhibitors
AJCC:	The American Joint Committee on Cancer
ALNs:	Axillary lymph nodes
APBI:	Accelerated partial breast irradiation
BBD:	Benign breast disease
BCS:	Breast conserving surgery
BCT:	Breast conserving therapy
BRCA1:	Breast cancer susceptibility gene 1
BRCA2:	Breast cancer susceptibility gene 2
CEA:	Carcino-Embryonic Antigen
CM:	Cavity margins
CT:	Chemotherapy
3DCRT:	Three dimensional conformal radiotherapy
DCIS:	Ductal carcinoma in situ
DFS:	Disease free survival
DNA:	Deoxy ribonucleic acid.
EBCTCG:	Early Breast Cancer Trialists' Collaborative Group's
ER:	Estrogen receptors
ET:	Endocrine therapy
FAC:	5-fluorouracil, adriamycin, cyclophosphamide
FSH:	Follicle stimulating hormone
Gy:	Gray.
HDR:	High dose rate
HER2:	Human epidermal growth factor receptor.
HRT:	Hormone replacement therapy
IBTR:	Ipsilateral tumor recurrence
IFR:	The intramammary flap reconstruction

IGF-IR:	Insulin-like growth factor 1 receptor
ILC:	Invasive lobular carcinoma
IMRT:	Intensity-modulated radiation therapy
INR:	International normalization unit
IORT:	Intraoperative radiation therapy
LCIS:	Lobular carcinoma in situ
LHRH:	Luteinizing hormone releasing hormone
LM:	Lumpectomy margins
MRI:	Magnetic resonance imaging
MRM:	Modified radical mastectomy
NAC:	Nipple-areola complex
NC:	Neoadjuvant chemotherapy
NCCN:	The National comprehensive cancer network
NCI:	The National Cancer Institute
NIH:	National Institutes of Health
NOS:	Not otherwise specified
NSABP:	National Surgical Adjuvant Breast and Bowel Project
NST:	No special type
OCS:	Oral contraceptives
OFS:	Ovarian function suppression
OPS-BCS:	Oncoplastic breast conservation surgery
OS:	Overall survival.
PCR:	Polymerize chain reaction
PR:	progesterone receptor
PT:	Prothrombine time
RNA:	Ribonucleic acid
RS:	Recurrence score.
TACT:	Taxotere as adjuvant chemotherapy
TNM:	Tumor, nodes, and metastases.
UOQ:	Upper outer quadrant
US:	Ultrasonography

WBI:	Whole breast irradiation
WHI:	Women's health initiative
WHO:	World Health Organization

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INTRODUCTION

Breast cancer is the commonest cancer among women worldwide. It accounts for 33% of all female cancers in Egypt **(El Bolkainy et al., 2000)**.

Surgical treatment of breast cancer has changed significantly over time. The role of surgeons is not limited for just removal of the tumor. They are the patient's first contacts, leaders of a multidisciplinary team, guiding the patient through the many diagnostic and therapeutic modalities comprising the modern management of breast cancer **(Angelo et al., 2012)**.

The goals of modern breast cancer surgery include the cure of the patient, preserving the breast as much as possible and satisfying the woman by giving her physical and psychological welfare **(Stolier et al., 2003)**.

Until the mid-1980s, the surgical treatment for stage I or II breast cancer was modified radical mastectomy. Since then, randomized trials has shown that breast-conserving surgery (BCS) with radiotherapy produces results equivalent to those obtained with mastectomy in terms of survival **(Van Dongen and Voogd, 2000; Veronesi et al., 2002; Poggi and Danforth, 2003)**.

These results have led to the adoption of BCS as the treatment of choice for patients with early breast cancer, unless there are any contraindications to BCS or it is precluded by patient preference **(Fischer et al., 2002)**.

Breast conservation involves resection of the primary breast cancer with a margin of normal-appearing breast tissue and adjuvant radiation therapy to the remaining part of the breast **(Hunt et al., 2010)**.

Postoperative irradiation of the remaining breast tissue represents an integral part of breast conserving therapy (BCT) to decrease the risk of local recurrences **(Tinterri et al., 2009)**.

Breast conserving therapy is considered to be oncologically equivalent to modified radical mastectomy. BCT appears to offer advantages over modified radical mastectomy with regard to quality of life and aesthetic outcomes **(Clarke et al., 2005)**.

Breast conserving therapy allows for preservation of breast shape and skin as well as preservation of sensation, and provides an overall psychological advantage associated with breast preservation **(Simmons and adamovich, 2003)**.

Breast conserving surgery has been recognized to be as effective as mastectomy in terms of survival in patients with early breast cancer **(Fisher et al., 2002)**.

However, patients who undergo BCS are exposed to a life-long risk of local recurrence **(Schnitt, 2003)**.

Local recurrence rates are similar with a non-significant relative reduction in favour of modified radical mastectomy **(Thompson and Dewar, 2002)**.

Treatment of the axilla by surgery with or without radiotherapy remains an integral part of the management of patients with invasive breast cancer. The current standard is an anatomic level I and II axillary lymph node dissection (ALND) for all patient with stage I and II breast cancer. **(Barry W Feig et al., 2004)**

With increased emphasis on mammographic screening and early detection, the incidence of node positive breast cancer is decreasing. Today, in western series, only 30% to 40% of all invasive breast cancers are node positive **(Dowlatshahik K et al, 1997)**.

Hence, the clinical staging of regional lymphatics and the emergence of intraoperative lymphatic mapping and sentinel lymphadenectomy to obviate complete axillary lymph node dissection in patients with breast carcinoma is currently receiving much attention in the medical literature for early breast cancer **(Dale P S and Williams, 1998)**.

The value of axillary dissection is to provide accurate prognostic information as well as excellent local control and to improve the survival rate in the node positive group **(Moore M P and Kinne D W, 1988)**.

In addition, nodal status has been one of the most important determining factors in recommending adjuvant chemotherapy for patients with breast carcinoma (**Jatoi I, 1999**). It was suggested that improved survival is associated with a more complete axillary lymph node dissection in patients with stage I breast cancer (**Sosa J A et al., 1998**).

For proper staging, the surgeon should provide the pathologist with a specimen containing at least 10 lymph nodes (**Cady B & Sears H F, 1986**).

There is a 25% to 30% error in the clinical staging of the axilla, that is 25% of palpable nodes will be uninvolved on histological analysis, while 30% of axilla with no palpable nodes will be involved. As a consequence, axillary dissection has been the standard method to evaluate axillary node involvement (**Ruben A et al., 1988**).

However, variations in axillary anatomy have not been described in most texts of operative surgery or anatomy (**Kutiyawala M A et al., 1998**).

So, come the importance of determining the potentially involved groups of axillary lymph nodes in patients with invasive breast cancer.

Aim of the work

The aim of this work is to highlight the pattern of axillary lymph node metastasis in females treated with conservative surgery for breast cancer.

Also to find out how far does the pathological staging differs from the clinical staging.

Anatomy of the breast

The adult female breast is located within the superficial fascia of the anterior chest wall. The base of the breast extends from the 2nd rib above to the 6th or 7th rib below and from the sternal border medially to the midaxillary 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 (**Skandalakis et al., 2009**).

The nipple projects from the center of the breast anteriorly; its shape varies from conical to flattened, its level in the thorax varies widely, but it is at the fourth intercostal space in most young women. The areola is a disc of skin which circles the base of the nipple, varying in color from pink to dark brown depending on parity and race. This area is lubricated by the areolar glands of Montgomery, these are large, modified sebaceous glands (**Ellis et al., 2005**).

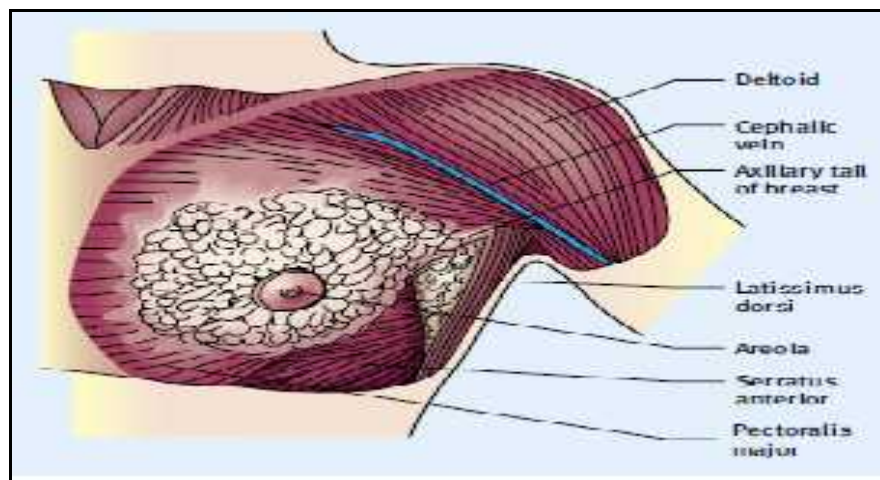


Fig. (1): Superficial dissection of the pectoral region of the breast (**Ellis, 2006**).