

Breast Cancer

A Practical Guide

Third edition

Orlando E. Silva, M.D.

Stefano Zurrada, M.D.

Editors

Presented by Umberto Veronesi, M.D.

Breast Cancer

A Practical Guide

Orlando E. Silva, MD

Assistant Professor of Clinical Medicine and
Director of Breast Cancer Education
Miller School of Medicine
University of Miami
Florida, USA

Stefano Zurrida, MD

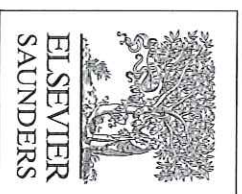
Current Secretary to the Minister of Health of Italy
Istituto Europeo di Oncologia, Direzione Scientifica
Milan, Italy

Presented by Umberto Veronesi, MD

Scientific Director
European Institute of Oncology
Milan, Italy

For Elsevier:

Commissioning Editor: Alison Taylor
Publishing Editor: Peter Harrison
Development Editor: Kim Benson
Production Manager: Andy Hannan
Production: Helius



EDINBURGH LONDON NEW YORK OXFORD PHILADELPHIA
ST LOUIS SYDNEY TORONTO 2005

D	docetaxel (Taxotere)	P	prednisone
E	epirubicin (Ellence)	T	paclitaxel (Taxol)
F	5-FU (5-Fluorouracil) (Adrucil)	TAM	tamoxifen (Nolvadex)
G	gemcitabine (Gemzar)	V	vincristine (Oncovin, Vincasar)
HEC	high-dose epirubicin/cyclo- phosphamide (EC)	Z	goserelin (Zoladex)
L-PAM	methylalan (Alkeran)		
M	methotrexate		
N	mitoxantrone (Novantrone)		

Drug combinations are defined on first usage within a chapter.

Table of contents

Dedication	v
Acknowledgments	vii
Foreword to the third edition	xi
How to use this book	xii
Commonly used abbreviations	xiii
1 Benign breast disease	1
Cysts	1
Fibrocytic changes	2
Epithelial ductal hyperplasia	2
Atypical hyperplasia	3
Adenomas	3
Fibroadenoma	4
Mammary duct ectasia	4
Mammary duct fistula	5
Papillomas	6
Puerperal (lactational) mastitis	7
Periareolar sepsis	8
Fat necrosis	8
Mondor disease	9
Microglandular adenosis	9
Radial scars and complex sclerosing lesions	9
Granular cell tumors	10
Lipomas	10
Hamartomas (fibroadenolipoma)	10
Sarcoid	11
BREAST CARCINOMA	13
2 History of breast cancer	15
3 Epidemiology	21
Breast cancer worldwide	21
Breast cancer in the USA	22
Ethnicity	24
Laterality	25
4 Risk factors	26
Factors that increase risk	26
Hereditary breast cancer	32

Estimating risk factors	41	Multicentricity	145
Current recommendations for high risk patients	43	Axillary SLN biopsy	146
Potential risk factors	47	Radiation therapy	146
Factors that decrease risk	50	Rationale for radiation	150
		Does the estrogen receptor status matter in DCIS?	155
5 Screening	54	12 Lobular carcinoma in situ (LCIS)	156
Official recommendations for screening	60	Treatment options	157
Definitions	61		
Screening mammography	61	13 Accelerated partial breast irradiation (APBI)	159
The breast imaging reporting and data system (BI-RADS)	62	Clinical experience with APBI using interstitial brachytherapy	160
Diagnostic mammography	63	Clinical experience with APBI using MammoSite	162
Digital mammography	65	Clinical experience with APBI using TARGIT	164
		Clinical experience with APBI using ELIOT	165
		Clinical experience with APBI using 3D conformal RT	166
6 Imaging studies	67		
Mammogram	67	INVASIVE CANCER	169
Ultrasound	67		
Breast ultrasound lexicon	69	14 Surgical treatment	171
Magnetic resonance imaging (MRI)	70	Stage I/II operable breast cancer	171
Breast MRI lexicon	72		
Scintimammography (sestamibi scan)	73	15 Postmastectomy radiotherapy	184
PET scan	74	Loco-regional failure following mastectomy	184
Bone scan	74	Randomized trials of postmastectomy XRT	184
Liver scan	75	Impact of BCR1/BRCA2 on adjuvant postmastectomy XRT	191
Imaging breasts with implants	75	XRT as part of breast-conserving therapy	191
		Impact of the XRT fractionation schedule on breast-conserving therapy	191
7 Evaluation of a palpable breast mass and nipple discharge	76	Recommendations for adjuvant postmastectomy XRT	192
Evaluation of a palpable breast mass	76	Side-effects of postmastectomy XRT	193
Evaluation of nipple discharge	80		
		16 Axillary lymph node dissection (ALND)	196
8 Breast pathology	84	Ductal carcinoma <i>in situ</i> (DCIS)	198
Non-invasive breast cancer	86	Microinvasive carcinoma	198
Microinvasive breast cancer	90	Invasive carcinoma	199
Invasive breast cancer	91	Complications of ALND	200
		Sentinel lymph node (SLN) localization (lymphatic mapping)	201
9 Staging	95	Ongoing SLN trials	207
Summary of revised staging modifications	95		
		17 Axillary lymph node irradiation	209
10 Prognostic factors	101	Breast reconstruction after mastectomy	212
Primary prognostic factors	102	Timing of breast reconstruction	213
New prognostic factors	106	Choice of reconstructive technique	213
Summary	137	Breast reconstruction and oncology	228
NON-INVASIVE CANCER: CARCINOMA IN SITU	139		
11 Ductal carcinoma in situ (DCIS)	141		
Local excision alone	143		

19 Stage III disease	230	Adjuvant aromatase inhibitors instead of tamoxifen – ongoing trials	301
Taxanes	233	Extended adjuvant therapy	302
The role of XRT in locally advanced breast cancer (LABC)	235	Other adjuvant endocrine therapy	302
20 Primary chemotherapy	238	Adjuvant chemotherapy vs adjuvant hormonal therapy	303
Primary dose-dense chemotherapy	249	Combined adjuvant endocrine therapy	305
Use of trastuzumab in primary systemic therapy	250	Adjuvant chemohormonal therapy	306
Neoadjuvant endocrine therapy in locally advanced breast cancer (LABC)	251	Adjuvant chemohormonal therapy – ongoing trials	307
21 Adjuvant chemotherapy for breast cancer	254	Adjuvant immunotherapy	308
Key principles	254	Closed trials	308
Expert opinions and meta-analyses	254	23 Local breast recurrence	309
Early studies of adjuvant chemotherapy for LN (+) breast cancer	257	Local breast recurrence after breast-conserving therapy	309
Adding chemotherapy to tamoxifen for postmenopausal women with LN (+) breast cancer	259	Local breast recurrence after mastectomy	315
Anthracycline vs CMF regimens	262	Treatment modalities for local recurrence after mastectomy	315
Role of taxanes in adjuvant chemotherapy	266	24 Metastatic breast cancer: presentations and management	320
Chemotherapy dose intensity and density	269	Loco-regional disease	322
Sequencing of adjuvant chemotherapy and XRT	276	Bone only	325
Timing of adjuvant chemotherapy after surgery	278	Visceral disease	332
Adjuvant chemotherapy combinations and durations	278	Visceral crises	342
Adjuvant chemotherapy with CMF	279	25 Endocrine therapy for metastatic breast cancer	348
Adjuvant chemotherapy incorporating anthracyclines	280	Antiestrogens	350
Sequential Adriamycin → CMF vs alternating Adriamycin/classical CMF	282	Selective aromatase inhibitors	356
Adjuvant chemotherapy for women with LN (–) breast cancer	282	Non-selective aromatase inhibitors	365
New adjuvant chemotherapy regimens	284	Estrogen receptor down-regulators	366
Role of trastuzumab in the adjuvant setting	286	Progestational agents	368
22 Adjuvant endocrine therapy in pre- and postmenopausal women	290	Ovarian ablation	368
Adjuvant tamoxifen in premenopausal women	290	Gonadotropin hormone-releasing (GnRH) analogs	368
Adjuvant hormonal therapy trials	292	Oophorectomy	371
Long-term tamoxifen follow-up	295	Androgens	372
Adjuvant aromatase inhibitors vs tamoxifen	296	High-dose estrogens	372
Adjuvant aromatase inhibitors vs tamoxifen vs sequential use	297	26 Standard chemotherapy for metastatic breast cancer (MBC)	373
Extended adjuvant therapy	299	Chemotherapy agents and regimens	376
ASCO technology assessment of the use of aromatase inhibitors as adjuvant therapy for postmenopausal women with HR (+) breast cancer	300	Molecular targeted therapy	420
Adjuvant chemohormonal therapy – ongoing trials	301	27 Breast cancer in the elderly	432
		Tumor biology and stage at presentation	432
		Clinical decision-making in the elderly	433
		Cancer detection and screening	433
		Management of early stage breast cancer	433
		Management of locally advanced breast cancer	434
		Management of metastatic breast cancer	435

42	Care of the dying patient	551
	Communication	551
	Symptoms	552
	Management strategies	553
	Palliative medicine	553
	Pain management	554
	Dyspnea	560
	Nausea	561
	Anorexia and cachexia	562
	Religion	563
	Existential suffering	563
	Family	564
	Bereavement	564
43	Issues in breast cancer liability	565
	Introduction	565
	The standard of care	566
	The standard of care for physicians treating breast cancer patients	566
	Defenses to a breast-cancer-related claim	567
	Areas of breast cancer liability	569
	Failure to screen individuals for breast cancer	570
	Failure to elicit information	571
	Failure to diagnose breast cancer	572
	Causation in failure to diagnose cases	575
	Damages in failure to diagnose cases	575
	Misreading mammograms	577
	Failure to order biopsies	578
	Negligent performance of needle aspirations	579
	Negligent ordering and performance of mastectomies	580
	Negligent postoperative treatment	581
	Issues in breast reconstruction	582
	HMO and insurance company liability	582
	Conclusion	584
	APPENDICES	585
	Appendix I National breast cancer support organizations	587
	Appendix II Breast cancer local support groups in the USA	607
	Appendix III Charges related to breast cancer treatment in the USA and Europe	623
	Index	627

Benign breast disease

Harris JR (ed), *Diseases of the Breast*. Lippincott, Williams & Wilkins, Baltimore, 2004

- Benign breast tissue is heterogeneous, containing fat, stroma, ducts, and lobules.

Cysts

- Definition:
 - Fluid filled structures.
 - Derived from terminal duct lobular unit.
- Types:
 - Flattened.
 - Apocrine (recurrence more likely).
- Location:
 - Cysts tend to be peripheral, occurring within the terminal duct or lobule.
 - Carcinoma generally occurs deeper in the breast.
- Treatment:
 - Aspiration:
 - management for symptomatic cysts
 - diagnosis in asymptomatic cysts.
- Cytology of aspirated fluid, if clear, is not necessary due to low yield in diagnosing cancer.