

CONTENTS

1	
<i>Epidemiology of Breast Cancer</i>	1
MARC E. LIPPMAN, M.D.	
Reproductive and Menstrual History	2
International Variation	3
Family History.....	4
The Endocrine Environment	5
Exogenous Hormone Administration.....	7
 2	
<i>Screening and Detection of Breast Cancer</i>	10
GLORIA FRANKL, M.D.	
Methods of Detection	10
 3	
<i>Gross and Microscopic Pathology of the Female Breast</i>	22
CHERYL M. REICHERT, M.D., Ph.D., SHAHLA MOSHIRI, M.D., R. MARSHALL AUSTIN, M.D., Ph.D., and HENRY J. NORRIS, M.D.	
Normal Findings.....	22
Benign Breast Disease	26
Primary Breast Cancer	30
Pathologic Variables and Prognosis in Breast Cancer.....	40
Techniques of Pathologic Evaluation	42
 4	
<i>The Diagnosis of Breast Cancer</i>	50
DAVID N. DANFORTH, Jr., M.D., ALLEN S. LICHTER, M.D., and MARC E. LIPPMAN, M.D.	
Staging Classifications for Breast Cancer	51
History and Physical Examination.....	57
Evaluation of the Palpable Breast Mass	63
Evaluation of the Patient with Nipple Discharge.....	75
Evaluation of Occult Abnormalities Detected by Mammography.....	78
Bilateral Breast Cancer and Biopsy of the Opposite Breast	80
Preoperative Evaluation of the Breast Cancer Patient.....	82

5

Surgical Treatment of Breast Cancer 95

DAVID N. DANFORTH, Jr., M.D., and MARC E. LIPPMAN, M.D.

Historical Aspects	96
Anatomic Considerations	100
Surgical Procedures for the Management of Breast Cancer	103
Principles of Breast Cancer Surgery	106
Results of the Surgical Treatment of Breast Cancer	108
Locally Advanced Breast Cancer	146

6

Radiation Therapy as Definitive Treatment of Breast Cancer 155

PEGGIE A. FINDLAY, M.D.

Early Radiation Therapy Experiences	157
Radiation Therapy in the Era of Megavoltage Equipment	162
Prospective Randomized Studies	169
Local Recurrence	187
Complications	192
Cosmesis	197
Integration with Adjuvant Chemotherapy	199
Guidelines for Patient Treatment	201
Patient Follow-Up After Primary Irradiation	204

7

Technical Aspects of the Treatment of Breast Cancer with Radiation Therapy 208

ALLEN S. LICHTER, M.D.

Radiation Therapy for the Intact Breast	208
Techniques of Irradiation of the Intact Breast	210
Treatment Planning and Dosimetry in Primary Breast Cancer Therapy	219
Treatment of the Postmastectomy Chest Wall	225

8

Radiation Therapy as an Adjuvant to Surgery in the Treatment of Operable Breast Cancer 228

ALLEN S. LICHTER, M.D., and PEGGIE A. FINDLAY, M.D.

Historical Background	228
The Era of Clinical Trials—Postoperative Irradiation	232
Preoperative Irradiation	254
Nonrandomized Studies of Adjuvant Postoperative Irradiation	255
Adjuvant Postoperative Irradiation in Combination with Systemic Chemotherapy	259

9

Locally Advanced Breast Cancer 272

RICHARD A. SORACE, M.D., Ph.D., and MARC E. LIPPMAN, M.D.

Definitions and Staging Classifications	272
Frequency of Locally Advanced Breast Cancer and Distribution of Patient Subsets	275
Local Therapeutic Modalities	278
Systemic Chemotherapy Plus Local Therapy	285
Future Directions	292

10**Intraepithelial Carcinoma of the Breast: LCIS and DCIS** 296

SANDRA M. SWAIN, M.D., and MARC E. LIPPMAN, M.D.

Detection	297
Precursor Lesions of Intraepithelial Cancer	299
The Concept of Minimal Breast Cancer	300
Pathology of Intraepithelial Cancer	301
Lobular Carcinoma In Situ	302
Ductal Carcinoma In Situ	312

11**Steroid Hormone Receptors and Mechanisms of Growth Regulation of Human Breast Cancer** 326

MARC E. LIPPMAN, M.D.

Steroid Hormone Action	326
ER in Breast Cancer: Distribution	333
ER and Response to Endocrine Therapy	335
ER, Disease-Free Interval and Adjuvant Therapy	336
Other Measures of Hormone Dependency, Including PR	337
ER and Responses to Specific Endocrine Therapy	338
Estrogen Receptors and Chemotherapy	339
Interpretation of Assay Results	339

12**Adjuvant Therapy for Breast Cancer** 348

NANCY E. DAVIDSON, M.D., and MARC E. LIPPMAN, M.D.

Scientific Principles Underlying Adjuvant Therapy Trials	348
Problems of Trial Design and Assessment of Outcome	349
Early Trials of Postoperative Chemotherapy	349
Trials of Chemotherapy with Concurrent Surgically Treated Control Subjects	350
Studies Comparing Adjuvant Chemotherapy Regimens	351
Timing and Duration of Chemotherapy	353
Intensity of Therapy	354
Radiation Therapy and Adjuvant Chemotherapy	355
Toxicity of Adjuvant Chemotherapy	356
Prognostic Factors for Outcome with Adjuvant Chemotherapy	357
Adjuvant Endocrine Therapy	364
Recommendations of the Consensus Development Committee on Adjuvant Chemotherapy for Breast Cancer	368

13**Treatment of Metastatic Breast Cancer** 375

NANCY E. DAVIDSON, M.D., and MARC E. LIPPMAN, M.D.

Endocrine Therapy	375
Treatment of Solitary Recurrences	396
Pregnancy and Breast Cancer	397
New Approaches	398

14**Special Situations in the Treatment of Breast Cancer** 407

ALLEN S. LICHTER, M.D., and MARC E. LIPPMAN, M.D.

Nonepithelial Tumors of the Breast	407
Breast Cancer Occurring During Pregnancy	414

Breast Cancer Presenting as Axillary Adenopathy	419
Paget's Disease of the Breast	422
Male Breast Cancer	425

15

Psychologic Response to Breast Cancer: Direct and Indirect Contributors to Treatment Outcome	439
---	-----

SANDRA M. LEVY, Ph.D., and WENDY S. SCHAIN, Ed.D.

Psychosocial Adaptation to Breast Cancer	440
Behavior as a Biologic Response Modifier in Breast Cancer Progression	446

16

Rehabilitation of the Patient with Breast Cancer	457
---	-----

CAROL WOOD, B.S., R.P.T., and LYNN H. GERBER, M.D.

Management of Metastatic Disease	462
Rehabilitation Treatment	462

17

Reconstruction of the Breast	468
---	-----

HAROLD D. McDONALD, M.D., F.A.C.S.

History	468
Psychologic Benefits of Breast Reconstruction	469
Timing of Breast Reconstruction	470
Silicone Prosthesis	471
Reconstruction with Available Tissue	472
Breast Reconstruction with the Use of Tissue Expanders	473
Local Flaps in Breast Reconstruction	474
Breast Reconstruction with the Latissimus Dorsi Flap	476
Breast Reconstruction Using the Rectus Abdominis Flap	478
Breast Reconstruction Using Microsurgical Free Flaps	480
Reconstruction After Lumpectomy and Radiation Therapy	480
The Contralateral Breast	481
Prophylactic Mastectomy	481
Nipple-Areola Reconstruction	482
Methods of Reconstructing the Nipple	483

18

Nursing Care of the Patient with Breast Cancer	486
---	-----

CATHERINE RICE GORRELL, R.N., M.S.N., TERESA M. D'ANGELO, R.N., B.S.N.,
and CAROLINE STOKES BAGLEY, R.N., M.S.N.

Detection and Diagnosis	487
Surgery	493
Radiation Therapy	499
Chemotherapy	505
Recurrence	507
Pain	512
Family	514
Nutrition	514
Community Resources and Educational Material	518
Appendix	519

19***Statistical Considerations in the Design and Interpretation of Clinical Trials* 525**

MARGARET N. WESLEY, Ph.D., and BRENDA K. EDWARDS, Ph.D.

Designs and Implementation 525*Statistical Analysis* 534*Interpreting the Results of a Clinical Trial* 546**20*****Future Prospects in Breast Cancer Research and Management* 549**

JEFFREY SCHLOM, Ph.D.

Monoclonal Antibodies 550*Oncogenes, Proto-oncogenes, and Growth Factors* 554*Tumor Growth Factors* 555***Index* 557**