

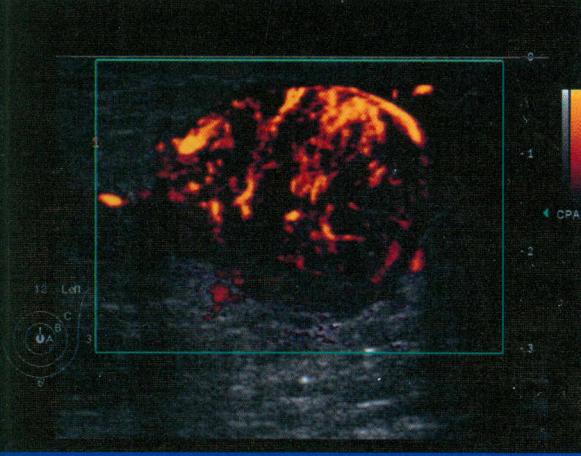
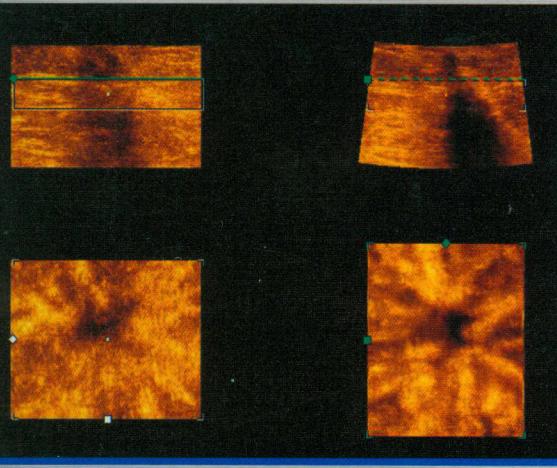
152156

The Practice of Breast Ultrasound

Techniques · Findings · Differential Diagnosis

Helmut Madjar
Ellen B. Mendelson

2nd edition



5 Standard Protocol for Breast Ultrasound Examinations

Patient History	71
Clinical Examination	71
Prior Mammograms	72

Other Studies.....	72
Ultrasound Findings	72
Benign–Malignant Differentiation	75
Final Evaluation and Recommendation	76
Documentation.....	77

INTERMEDIATE COURSE

6 Fibrocystic Change

Clinical Significance	81
Diagnosis with Ultrasound	82
Common Findings.....	82
Less Common Findings	86
Diagnosis and Management, Pitfalls, and When to Biopsy.....	92
Further Diagnostic Procedures	96
MRI and Color Doppler	96
Aspiration and Core Biopsy	97
Ductography.....	97
Role of Ultrasound	98
Documentation	98

Implant Abnormalities: Fibrous Encapsulation, Capsular Contracture, Extra- and Intracapsular Implant Rupture.....	122
Extra- and Intracapsular Implant Rupture, Silicone Migration, Granulomas, Siliconomas	123
Primary and Recurrent Tumors.....	126
Differential Diagnosis, Pitfalls	128
Further Diagnostic Procedures	128
Role of Ultrasound	128
Documentation	129

7 Cysts and Intracystic Tumors

Clinical Significance	99
Diagnostic Criteria.....	99
Simple Cysts	99
Complicated Cysts	100
Differential Diagnosis, Pitfalls	108
Echogenic Cysts Versus Solid Tumors	108
Fluid Levels	108
Reverberations	109
Malignant Tumors	109
Interventional Procedures	114
Aspiration	114
Pneumocystography.....	114
Role of Ultrasound	115
Documentation	115

9 Abscesses

Clinical Significance	131
Lactational Abscesses.....	131
Nonpuerperal Abscesses.....	131
Diagnostic Criteria.....	132
Edema	132
Mass	132
Additional Diagnostic Considerations.....	135
Management Procedures	138
Role of Imaging	138
Documentation	139

10 Benign Solid Tumors

Clinical Significance	141
Diagnostic Criteria.....	141
Typical Findings of Fibroadenomas	141
Less Common Findings of Fibroadenomas	145
Other Benign Tumors.....	145
Differential Diagnosis, Considerations, and Pitfalls	150
Further Diagnostic Procedures	153
Ultrasound	153
Mammography	153
MRI.....	153
Documentation	156

8 Breast Implants

Clinical Significance	117
Sonographic Findings	119
Testing Ultrasound Properties of Different Implant Types	121

11 Scars—The Treated Breast	157	Differential Diagnosis	176
Clinical Significance, Diagnostic Problems.....	157	Further Diagnostic Procedures	188
Diagnostic Criteria, Postoperative Follow-Up	159	Role of Ultrasound	189
Typical Findings.....	159	Documentation	190
Less Common Findings	160		
Differential Diagnosis	164		
Diagnostic Procedures.....	164		
Role of Ultrasound	166		
Documentation.....	166		
12 Carcinoma	167		
Clinical Significance.....	167	13 Lymph Nodes	191
Diagnostic Criteria.....	168	Clinical Significance.....	191
Typical Findings.....	168	Diagnostic Criteria.....	191
Less Common Findings	175	Findings for Normal and Benign Lymph Nodes	191
		Findings for Malignant Lymph Nodes	192
		Differential Diagnosis	196
		Further Diagnostic Procedures	197
		Role of Ultrasound	197
		Documentation	198
			
14 Interventional Ultrasound	201	Prerequisites for Extended Screening.....	223
Clinical Significance.....	201	Studies on Ultrasound Screening	226
Needle Insertion Technique	201	Results of the Freiburg Screening Study	226
Fine-Needle Aspiration Cytology	205	Conclusions of the Freiburg Screening Study	227
Solid Lesions	205		
Fluid-filled Lesions	207		
Large Needle Biopsy:			
Core, Vacuum-assisted, and Other Technologies	208		
Ultrasound-Guided Localization	210		
Specimen Ultrasonography	212		
Summary	213		
15 Preoperative Staging	215		
Clinical Significance	215	17 Follow-Up and Recurrence	229
Tumor Size	215	Clinical Significance	229
Intraductal Carcinomas and		Detection of Locoregional Recurrences	229
Intraductal Components	216	Role of Ultrasound Compared with	
Multifocality and Multicentricity	218	Other Modalities	234
Surgical Planning	220		
16 Screening	223		
Clinical Significance	223	18 Three-dimensional, Extended	235
Target Group for Extended Screening	223	Field-of-View Ultrasound, and	
		Real-time Compound Scanning	235
		Technical Principles	235
		Extended Field-of-View-Ultrasound	236
		Real-time Compound Scanning	237
		Sample Applications of Three-dimensional	
		Ultrasound	238
		Sample Applications of Extended	
		Field-of-View Imaging	239

Sample Applications of Compound Scanning.....	241
Discussion and Outlook.....	243
19 Doppler Ultrasound	245
Clinical Principles	245
Historical Development.....	245
Examination Technique	246
Interpretive Criteria.....	247
Vascularity and Hemodynamic Parameters	248
Possible Applications.....	250
Smoothly Marginated Carcinomas.....	250
Proliferative Fibroadenomas	250
Multifocal and Multicentric Tumors	250
Scars.....	250
Lymph Node Evaluation.....	251
Prognostic Evaluation	251
Chemotherapy and Follow-Up.....	252
Use of Ultrasound Contrast Agents to Increase Doppler Signal	252
Practical Application.....	253
20 Breast Ultrasound Review Questions	255
Appendix: IBUS Guidelines	259
Further Reading	261
Index	264