

INDEX

- abscess. *See also* subareolar abscess (SBA)
 - acute mastitis, 44
 - lactational/puerperal mastitis, 55
 - mammary tuberculosis, 42
 - tuberculous, 43
- adenocarcinoma
 - gastric, 198, 200
 - invasive, 157
 - lung, 197, 200
 - prostatic, 199–200
 - with spindle cell metaplasia, 128
- adenoid cystic carcinoma, 106–7
 - clinical features, 106
 - cytologic features, 106
 - differential diagnosis, 62, 107, 153
 - biphasic tumors, 107
 - collagenous spherulosis, 107
 - invasive cribriform carcinoma, 106
 - special types of ductal carcinoma, 107
 - histologic features, 106–7
 - radiographic features, 106
- adenolipoma, 174
 - cytologic features, 174
 - histologic features, 174
- adenomyoepithelioma, 150–3
 - clinical features, 150
 - cytologic features, 150–2
 - differential diagnosis, 62, 68, 74, 153, 157
 - histologic features, 152–3
 - immunohistochemistry, 153
 - malignant changes, 152
 - malignant myoepithelioma association, 154
 - radiographic features, 150
 - recurrence, 150
- adenosis, 66
 - microglandular, 66
 - nodular. *See* adenosis tumor
 - sclerosing. *See* sclerosing adenosis
- adenosis tumor, 66–8
 - clinical features, 66–7
 - cytologic features, 67
 - differential diagnosis, 66, 68
 - histologic features, 67
 - radiographic features, 67
- adenosquamous carcinoma, 127
 - low-grade, 128
- amyloid, 61
- amyloidosis, 48, 61
- angiosarcoma, 129, 165, 176–8
 - clinical features, 176
 - clinical vignette, 178
 - cytologic features, 176–7
 - differential diagnosis, 173, 177–8
 - histologic features, 177
 - immunohistochemistry, 178
 - radiographic features, 176
- apocrine adenosis, 63
- apocrine carcinoma, 123–4, 199
 - clinical features, 123
 - cytologic features, 123
 - differential diagnosis, 124, 153
 - apocrine metaplasia, 124
 - granular cell tumor, 124
 - reactive histiocytic inflammation, 124
 - histologic features, 123–4
 - radiographic features, 123
- apocrine cells, 199
- adenomyoepithelioma, 150
- collagenous spherulosis, 61
- cysts, 59–60
- fibroadenoma, 52
- fibrocystic change, 52
- granular cell tumor, 169
- apocrine metaplasia, 124
- atypia, 68
 - adenoid cystic carcinoma, 62
 - adenomyoepithelioma, 151–2
 - apocrine carcinoma, 123
 - cyst lining cells, 60
 - fibroadenoma, 139–41
 - hemangioma, 172
 - lobular carcinoma, 111
 - medullary carcinoma, 120
 - phyllodes tumor, 143
- atypical ductal hyperplasia (ADH), 85–7, 100
 - clinical features, 85
 - cytologic features, 86
 - histologic features, 86
 - immunohistochemistry, 87
- atypical lobular hyperplasia (ALH), 80–5
 - clinical features, 80
 - cytologic features, 80–1
 - differential diagnosis, 83–4
 - histologic features, 81–3
 - immunohistochemistry, 84
- axillary lymph node dissection (ALND), 30
 - recommendations, 32
- basal-like carcinoma of the breast, 197
- benign lesions, radiographic features, 27
- benign spindle cell tumors, 170
- Bowen’s disease, 93
- BRCA1 breast cancers, 120
- Breast Cancer Index, 209
- Breast Imaging Reporting and Data System (BI-RADS), 1–2
 - MRI descriptors, 10
 - breast-specific gamma imaging (BSGI), 13–15
 - Burkitt’s lymphoma, 184
- calcifications, 90, 199,
 - See also* microcalcifications
 - clinical vignette, 94
 - complex fibroadenoma, 142
 - fat necrosis, 50
 - invasive ductal carcinoma, 97
 - invasive micropapillary carcinoma, 118
 - mammary duct ectasia, 36
 - mucocoele-like lesion, 56–7
 - silicone mastitis, 45
 - tubular adenoma, 73
 - tubular carcinoma, 101
- carcinoid, 198
- carcinoma. *See specific types of carcinoma*
- cell polarity reversal, 118
- cholesterol crystals, mammary duct ectasia, 36
- chondrolipoma, 174
 - cytologic features, 174
 - histologic features, 174
- circulating tumor cells (CTC), 209
- clear cell carcinoma, 153
- collagenous spherulosis, 61–2
 - clinical features, 61
 - cytologic features, 61–2
 - differential diagnosis, 62, 91, 107
 - histologic features, 62
 - lobular neoplasia and, 82
 - radiographic features, 61
- colloid carcinoma, 58, *See also* mucinous carcinoma
- colorectal carcinoma, 198, 200
- complex fibroadenoma, 142–3
 - clinical features, 142
 - differential diagnosis, 143
 - histologic features, 142
 - radiographic features, 142
- complex sclerosing lesion, 64, *See also* radial scar
- core needle biopsy (CNB), 8, 29–30
 - advantages, 19–20, 23–4, 29
 - complications, 30
 - diagnostic accuracy, 22–3
 - disadvantages, 23, 29–30
 - sentinel lymph nodes, 31
 - versus fine needle aspiration, 20–1
- cribriform carcinoma
 - cytologic features, 104

INDEX

- cribriform carcinoma (cont.)
 - differential diagnosis, 62
 - histologic features, 105
- cystic apocrine metaplasia, 59
- cystic carcinoma, 60, *See also* adenoid cystic carcinoma
- cysts, 59–60
 - clinical features, 59
 - complicated, 5, 59
 - cytologic features, 59–60
 - differential diagnosis, 60
 - fat necrosis, 49
 - histologic features, 60
 - mucocoele-like lesion, 57
 - radiographic features, 59
 - simple, 5, 59
 - intervention, 5
- diabetic mastopathy, 46–9
 - clinical features, 47
 - cytologic features, 47–8
 - differential diagnosis, 48–9
 - histologic features, 48
 - radiographic features, 47
- diffuse large B cell lymphoma (DLBCL), 183, 195
- ductal carcinoma in situ (DCIS), 87–92
 - clinical features, 87
 - clinical vignette, 94
 - cribriform type, 105–6
 - cytologic features, 88–9
 - differential diagnosis, 64, 80, 90–2
 - invasive cribriform carcinoma, 105–6
 - invasive ductal carcinoma, 100
 - invasive micropapillary carcinoma, 119
 - high grade, 89–90
 - histologic features, 86, 88–90
 - low grade, 87–9
 - metaplastic carcinoma association, 125
 - mucinous carcinoma association, 112
 - papillary carcinoma association, 114
 - papillary DCIS, 88
 - radiographic features, 87
 - versus atypical ductal hyperplasia, 86
- ductal enhancement, 10
- ductoscopy with ductal lavage, 75
- E-cadherin stain, 83–4, 111
- encysted papillary carcinoma. *See* papillary carcinoma
- enhancement, 10
 - kinetics, 10
 - persistent, 10
- epidermal inclusion cyst (EIC)
 - differential diagnosis, 39–40
- estrogen receptor (ER), 204
 - reporting results, 205
 - specimen rejection, 205
 - testing in cytology specimens, 206
 - tissue processing for testing, 205
- extranodal marginal zone B cell lymphoma, 184
- false negative (FN) rate, 10
- fat necrosis, 40, 49–50
 - clinical features, 49
 - cytologic features, 49–50
 - differential diagnosis, 49–50, 53, 111
 - histologic features, 50
 - pseudolymphoma, 192
 - radiographic features, 49
 - silicone mastitis, 45–6
- fibroadenoma, 137–43
 - carcinoma mimicking, 140
 - cellular, 138
 - cellular atypia leading to falsely positive diagnosis, 139–40
 - clinical features, 137
 - clinical vignette, 148
 - complex. *See* complex fibroadenoma
 - cytologic features, 54, 137–8
 - overlapping features, 139
 - differential diagnosis, 54, 139–43
 - adenoid cystic carcinoma, 107
 - adenomyoepithelioma, 153
 - adenosis tumor, 68
 - fibrocystic change, 64
 - fibromatosis, 163
 - gynecomastia, 52
 - invasive ductal carcinoma, 100
 - lactating adenoma, 55
 - mucinous carcinoma, 114, 141
 - mucocoele-like lesion, 58
 - papillary carcinoma, 117
 - papilloma, 79
 - phyllodes tumor, 141–2
 - subareolar abscess, 40
 - tubular carcinoma, 103
 - histologic features, 138–9
 - myxoid, 58, 139, 141
 - radiographic features, 137
- fibrocystic change (FCC), 58–9
 - clinical features, 58
 - cytologic features, 39, 58
 - differential diagnosis, 38–40, 50, 52, 58
 - histologic features, 40
 - immunohistochemistry, 64
 - non-proliferative, 59–62
 - collagenous spherulosis, 61–2
 - cysts, 59–60
 - fibrosis, 60–1
 - proliferative, 62–4
 - cytologic features, 63
 - differential diagnosis, 64
 - histologic features, 63–4
 - radiographic features, 58
- fibroepithelial lesions, 137, *See also specific lesions*
- fibromatosis, 129, 155, 160–3
 - clinical features, 160
 - cytologic features, 160–1
 - differential diagnosis, 162–3, 171, 173
 - histologic features, 161–2
 - radiographic features, 160
- fibrosis, 60–1
 - diabetic mastopathy, 47
 - fat necrosis, 50
 - mammary duct ectasia, 37
 - mastitis, 44
 - silicone mastitis, 46
 - stromal, 48
- fine needle aspiration (FNA), 7–8, 16
 - adequacy assessment, 20
 - advantages, 19, 28
 - complications, 30
 - decline in use, 19–20
 - diagnostic accuracy, 20
 - limitations, 19, 21–2, 28–9
 - multidisciplinary approach, 20
 - sentinel lymph nodes, 31
 - specimen adequacy, 27–8
 - versus core biopsy, 20–1
- foci, 10
- follicular center cell lymphoma (FCL), 183
- foreign body giant cell reaction, 39, 48–9
- foreign body granulomatous mastitis (FBGM), 41–2, *See also* silicone mastitis
- galactocoele, 52–3
 - cytologic features, 53–4
 - differential diagnosis, 53–4
 - histologic features, 53
 - radiographic features, 52
- gamma-guided biopsy, 13–15
- gastrointestinal tract tumors, 198
- giant cells, 129
 - foreign body, 39, 43, 45, 49, *See also* foreign body giant cell reaction
 - Langhans-type, 41
 - osteoclast-like, 131
- glycogen-rich carcinomas, 132, 156
 - clinical vignette, 132
- granular cell tumor (GCT), 167–9
 - clinical features, 167
 - cytologic features, 167–8
 - differential diagnosis, 124, 168–9
 - histologic features, 168
 - malignant, 168
 - radiographic features, 167
- granuloma, 43
 - carcinoma-related, 44
 - fat necrosis, 50
 - mammary duct ectasia, 37
 - mammary tuberculosis, 43–4
 - silicone mastitis, 45
- granulomatous lobular mastitis (GLM), 40–2
 - cytologic features, 41, 54
 - differential diagnosis, 41–2
 - histologic features, 41–2
 - radiographic features, 41
- gynecomastia, 50–2
 - clinical features, 50
 - cytologic features, 51
 - differential diagnosis, 40, 52
 - histologic features, 52
 - radiographic features, 50
- gynecomastoid hyperplasia, 91
- hamartoma, 173–5
 - clinical features, 173–4
 - cytologic features, 174
 - differential diagnosis, 174
 - histologic features, 174
 - radiographic features, 174
- hemangioma, 171–4
 - capillary, 172
 - cavernous, 172
 - clinical features, 171
 - complex, 173
 - cytologic features, 171–2

INDEX

- differential diagnosis, 173, 178
- histologic features, 172–3
- radiographic features, 171
- venous, 173
- hemangiopericytoma, 175–6
 - clinical features, 175
 - cytologic features, 175
 - differential diagnosis, 176
 - histologic features, 175
 - radiographic features, 175
- hematopoietic lesions, 181, *See also specific lesions*
- HER2, 206
 - FISH, 207
 - gene expression profile, 208
 - immunohistochemistry, 206
 - specimen rejection, 206
- Hodgkin’s lymphoma, 182, 190–1
 - clinical features, 190
 - cytologic features, 190
 - differential diagnosis, 191
 - histologic features, 190–1
 - radiographic features, 190
- hyperplasia. *See also* atypical ductal hyperplasia (ADH); atypical lobular hyperplasia (ALH); pseudoangiomatous stromal hyperplasia (PASH); usual duct hyperplasia
 - epithelial, 37, 51
 - gynecomastia, 51
 - stromal, 46
- idiopathic granulomatous mastitis.
See granulomatous lobular mastitis (GLM)
- image-guided needle biopsy, 27, *See also* core biopsy; fine needle aspiration (FNA)
- inflammation, 182
 - acute mastitis, 44
 - amyloidosis, 48
 - diabetic mastopathy, 47
 - fat necrosis, 50
 - granulomatous lobular mastitis, 41
 - mammary duct ectasia, 37
 - mammary tuberculosis, 43
 - medullary carcinoma, 120
 - reactive histiocytic, 124
 - silicone mastitis, 45
 - subareolar abscess, 38–9
- inflammatory carcinoma, 129–30
 - clinical features, 129–30
 - cytologic features, 130
 - differential diagnosis, 130
 - histologic features, 130
 - radiographic features, 130
- intracystic papillary carcinoma. *See* papillary carcinoma
- intraductal papilloma. *See* papilloma
- intramammary lymph node, 181–2
 - clinical features, 181
 - cytologic features, 181–2
 - differential diagnosis, 182
 - histologic features, 182
 - immunohistochemistry, 182
 - radiographic features, 181
- invasive adenocarcinoma, 157
 - invasive carcinoma with osteoclast-like giant cells, 131
- invasive cribriform carcinoma, 106
 - clinical features, 104
 - cytologic features, 104
 - differential diagnosis, 105–6
 - adenoid cystic carcinoma, 106
 - ductal carcinoma in situ, 105–6
 - mixed type carcinoma, 106
 - proliferative breast disease, 105
 - histologic features, 105
 - radiographic features, 104
- invasive ductal carcinoma (IDC), 96–100
 - clinical features, 96–7
 - cytologic features, 97
 - differential diagnosis, 99–100
 - ductal carcinoma in situ, 100
 - fibroadenoma/phyllodes tumor, 100
 - invasive carcinoma of special types, 100
 - lactational changes/pregnancy, 100
 - lobular carcinoma, 111
 - proliferative breast disease, 100
 - tubular carcinoma, 104
 - histologic features, 97–9
 - radiographic features, 97
- invasive micropapillary carcinoma, 117–19
 - clinical features, 117
 - cytologic features, 118
 - differential diagnosis, 119
 - ductal carcinoma in situ, 119
 - metastatic micropapillary carcinoma, 119
 - lymphovascular invasion, 119
 - radiographic features, 118
- lactating adenoma, 53–5
 - clinical features, 53
 - cytologic features, 53–4
 - differential diagnosis, 54–5
 - histologic features, 54
 - radiographic features, 53
- lactational changes, 100
- leiomyoma, 169–71
 - clinical features, 170
 - cytologic features, 170
 - differential diagnosis, 171
 - histologic features, 171
 - radiographic features, 170
- lesion characterization, 5
 - benign sonographic lesions, 5
 - malignant sonographic lesions, 6
- lesion confirmation, 9–10
- lipid-rich carcinomas, 132, 156
- lobular carcinoma, 108–11
 - clinical features, 108–9
 - cytologic features, 109
 - differential diagnosis, 111
 - fat necrosis, 111
 - invasive ductal carcinoma, 111
 - lymphoid/plasmacytic proliferations, 111
 - well-differentiated endocrine carcinoma, 111
 - histologic features, 109–10
 - radiographic features, 109
- lobular carcinoma in situ (LCIS), 80–5, 109
 - clinical features, 80
 - cytologic features, 80–1
 - differential diagnosis, 83–4, 91
 - histologic features, 81–3
- lobular neoplasia (LN), 80–5
 - clinical features, 80
 - cytologic features, 80–1
 - differential diagnosis, 83–4
 - histologic features, 81–3
- lung primaries, 197, 200
- lupus mastitis, 48
- lymph nodes. *See also* sentinel lymph nodes
 - radiographic features, 31
- lymphocytes, 48
- lymphoepithelial carcinoma, 122
- lymphoma, 182–3, 188, *See also* Hodgkin’s lymphoma; non-Hodgkin’s lymphoma
 - differential diagnosis, 48
 - medullary carcinoma, 122
 - metastatic, 196
- magnetic resonance imaging (MRI), 10–12
 - BI-RADS MRI descriptors, 10
 - MRI-guided biopsy, 11–12
- male breast carcinoma, 52
- malignant lesions, radiographic features, 27
- malignant melanoma, 93
- malignant myoepithelioma, 154–6
 - clinical features, 155
 - cytologic features, 155
 - differential diagnosis, 155–6
 - histologic features, 155
 - radiographic features, 155
- malignant phyllodes tumor, 129
- Mammaprint assay, 208
- mammary duct ectasia (MDE), 36–8
 - clinical features, 36
 - cytologic features, 36–7, 39
 - differential diagnosis, 37–40
 - histologic features, 37, 40
 - radiographic features, 36
- mammary duct fistula. *See* subareolar abscess (SBA)
- mammary tuberculosis, 42–4
 - clinical features, 42–3
 - cytologic features, 41, 43
 - differential diagnosis, 41–4
 - histologic features, 42–3
 - radiographic features, 43
- marker placement, 3, 9
- mastitis. *See also* granulomatous lobular mastitis (GLM)
 - acute, 44–5, 50
 - differential diagnosis, 40–2
 - chronic, 44, 50
 - clinical features, 44
 - cytologic features, 44
 - differential diagnosis, 45
 - foreign-body granulomatous (FBGM), 41–2
 - histologic features, 44
 - lupus, 48
 - periductal. *See* subareolar abscess (SBA)
 - plasma cell, 38
 - puerperal, 44
 - radiographic features, 44
 - sclerosing, 42
 - tubercular, 42

INDEX

- medullary carcinoma, 119–23
 - clinical features, 119–20
 - cytologic features, 120
 - differential diagnosis, 121, 182, 191
 - ductal carcinoma, 122
 - lymphoepithelial carcinoma, 122
 - lymphoma, 122
 - metastatic carcinoma, 122
 - histologic features, 120–2
 - radiographic features, 120
- melanoma, 93, 199
 - differential diagnosis, 189
 - metastatic, 196
- mesenchymal lesions, 160, *See also specific lesions*
- metaplastic carcinoma
 - clinical features, 124–5
 - cytologic features, 125
 - differential diagnosis, 129, 155, 199
 - angiosarcoma, 129
 - fibromatosis, 129
 - malignant phyllodes tumor, 129
 - pleomorphic adenoma, 129
 - pleomorphic carcinoma, 129
 - sarcoma, 129
 - histologic features, 125–8
 - radiographic features, 125
- metastases, 132, 195, 201
 - clinically relevant metastases, 30
 - cytologic features, 195
 - differential diagnosis, 200
 - histologic features, 199–200
 - intramammary lymph node, 181
 - invasive micropapillary carcinoma, 117
 - macrometastases, 32
 - malignant myoepithelioma, 155
 - medullary carcinoma, 120
 - metaplastic carcinoma, 125
 - metastatic carcinoma, 122
 - micrometastases, 32
 - prognostic significance, 33
 - radiographic features, 195
- metastatic carcinoma
 - in an intramammary lymph node, 122
 - myoepithelial carcinoma, 129
- microcalcifications, 2
 - clinical vignette, 94
 - cysts, 60
 - lesion confirmation, 9
 - lobular neoplasia, 80
 - Paget disease of the nipple, 92
- microcysts, secretory carcinoma, 130
- microglandular adenosis, 102–3
- microinvasive carcinoma, 92
- micropapillary carcinoma
 - cytologic features, 118
 - histologic features, 119
- mixed epithelial/mesenchymal carcinoma, 128
- molecular tests, 208
- mucin. *See also* mucinous carcinoma; mucocoele-like lesion (MLL)
 - lobular neoplasia, 81, 109
 - mucinous carcinoma, 112
 - mucocoele-like lesion, 56
 - papillary carcinoma, 116
- mucinous carcinoma, 57–8, 112–14
 - clinical features, 112
 - cytologic features, 112
 - differential diagnosis, 74, 113
 - cystadenocarcinoma, 114
 - fibroadenoma, 114, 141
 - mucocoele-like lesion, 114
 - histologic features, 112–13
 - radiographic features, 112
- mucinous cystadenocarcinoma, 114
- mucinous lesions, differential diagnosis, 56–7
- mucocoele-like lesion (MLL), 55–8
 - clinical features, 56
 - cytologic features, 56–7
 - differential diagnosis, 56–7, 114
 - histologic features, 57
 - radiographic features, 56
- mucosa-associated lymphoid tissue type lymphoma (MALT), 184
- multiparameter gene expression profiles, 208
- myoepithelial carcinoma, 129, 152
- myoepithelial lesions, 150, *See also specific lesions*
- myoepithelioma, 153–4, *See also* malignant myoepithelioma
 - cytologic features, 154
 - differential diagnosis, 154
 - histologic features, 154
- myofibroblastoma, 153, 165–6
 - clinical features, 165
 - cytologic features, 165–6
 - differential diagnosis, 166, 171
 - histologic features, 166
 - subtypes, 166
 - immunohistochemistry, 166
 - radiographic features, 165
- necrosis. *See also* fat necrosis
 - acute mastitis, 45
 - angiosarcoma, 177
 - clinical vignette, 132
 - ductal carcinoma in situ, 90
 - granular cell tumor, 168
 - granulomatous lobular mastitis, 42
 - mammary tuberculosis, 43
 - papillary carcinoma, 117
- nipple discharge
 - clinical vignette, 93
 - cytology, 75
 - differential diagnosis, 37
 - mammary duct ectasia, 36
 - papillary carcinoma, 114
- nipple, epidermal lesions, 93, *See also* Paget disease of the nipple
- nodular fasciitis, 43
- non-Hodgkin’s lymphoma, 111, 182–8
 - clinical features, 182–3, 185–7
 - clinical vignette, 193
 - differential diagnosis, 188
 - radiographic features, 183, 185–7
- Nottingham grading system, 96
- OncotypeDX assay, 208
- osteoclast-like giant cells, 131
- ovarian carcinoma, 201
- Paget disease of the nipple, 87, 92–3
 - clinical features, 92
 - cytologic features, 92–3
 - differential diagnosis, 93
 - histologic features, 93
 - radiographic features, 92
- pagetoid spread, 81
- papillary carcinoma, 114–17
 - clinical features, 114–15
 - clinical vignette, 132
 - cytologic features, 115–16
 - differential diagnosis, 116
 - fibroadenoma, 117
 - papillary lesions, 117
 - proliferative disease, 117
 - histologic features, 116
 - radiographic features, 115
- papillary ductal carcinoma in-situ. *See* papillary carcinoma
- papillary intraductal carcinoma. *See* papillary carcinoma
- papilloma, 75–80
 - atypical, 78
 - clinical features, 75
 - clinical vignette, 94
 - cystic, 58
 - cytologic features, 75–7
 - differential diagnosis, 40, 52, 58, 78–80, 117
 - histologic features, 77–8
 - immunohistochemistry, 80
 - infarcted, 75, 77, 79
 - radiographic features, 75
 - sclerosing, 75, 79
- papillomatosis, 75
- peau d’orange, 129
- periductal mastitis. *See* subareolar abscess (SBA)
- perilobular hemangiomas, 171
- phyllodes tumor, 137, 143–7
 - benign, 143, 145
 - borderline/low grade, 143, 145
 - clinical features, 143
 - cytologic features, 143–5
 - differential diagnosis, 141–2, 147, 153, 163, 199
 - histologic features, 145–6
 - malignant, 143, 145–6
 - radiographic features, 143
- plasma cell mastitis, 38, 189
- plasma cell neoplasm, 188–9
 - clinical features, 188
 - cytologic features, 189
 - differential diagnosis, 189
 - histologic features, 189
 - radiographic features, 188
- plasma cell proliferations, 111
- plasma cells, 189
- plasmacytoid cells, 132
- plasmacytoma. *See* plasma cell neoplasm
- plasminogen activator inhibitor (PAI), 209
- pleomorphic adenoma, 129
- pleomorphic carcinoma, 129
- pregnancy-related lesions.
 - See also* fibroadenoma; galactocoele; lactating adenoma
 - differential diagnosis, 54

INDEX

- primary non-Hodgkin’s lymphoma (PNHL).
 See non-Hodgkin’s lymphoma
progesterone receptor (PR), 204–5
 reporting results, 205
 specimen rejection, 205
 testing in cytology specimens, 206
 tissue processing for testing, 205
proliferation markers, 209
prostate carcinoma, 199
pseudoangiomatous stromal hyperplasia
 (PASH), 163–5
 clinical features, 163
 cytologic features, 164
 differential diagnosis, 165, 173
 histologic features, 164
 nodular, 163–4
 radiographic features, 164
pseudolymphoma, 182, 187, 192
 clinical features, 192
 cytologic features, 192
 differential diagnosis, 192
 histologic features, 192
radial scar, 64–6
 clinical features, 64–5
 cytologic features, 65
 differential diagnosis, 66
 tubular carcinoma, 103–4
 histologic features, 65–6
 malignancy association, 64
 radiographic features, 65
radiation-induced changes, 91–2
reactive histiocytic inflammation, 124
Reed-Sternberg cells, 190
renal clear cell carcinoma (RCC), 198, 200
rhabdomyosarcoma, 199
rheumatoid disease, 48
Rosai-Dorfman disease (RDD), 48
Rotterdam signature, 209
sarcoidosis, 48
 differential diagnosis, 44
sarcoma, 129, 146
 metastatic, 199–200
scar, radial. *See* radial scar
sclerosing adenosis, 63, 65, 67
 differential diagnosis, 64, 66, 102
 in complex fibroadenoma, 143
 lobular neoplasia and, 82
 sclerosing lymphocytic lobulitis. *See* diabetic
 mastopathy
secretory carcinoma, 130, 156
segmental enhancement, 10
sentinel lymph nodes, 30–4
 contraindications to biopsy, 30
 intraoperative evaluation, 31–2
 clinical vignette, 33
 postoperative evaluation, 32–3
 preoperative evaluation, 31
 core needle biopsy, 31
 fine needle aspiration, 31
 radiographic features, 31
signet ring morphology, 81, 109, 198, 200
silicone mastitis, 45–6
 clinical features, 45
 cytologic features, 45
 differential diagnosis, 46
 histologic features, 46
 radiographic features, 45
small lymphocytic lymphoma (SLL), 185
solitary fibrous tumor. *See* hemangiopericytoma
spindle cells
 adenocarcinoma, 128
 adenomyoepithelioma, 151
 angiosarcoma, 177
 fibromatosis, 160–1
 granular cell tumor, 168
 hemangioma, 172
 hemangiopericytoma, 176
 leiomyoma, 170
 mixed epithelial/mesenchymal carcinoma,
 128
 nodular fasciitis, 43
 PASH, 68
 phyllodes tumor, 129
 squamous cell carcinoma, 125
squamous cell carcinoma, 127, 197
 in situ, 93
squamous metaplasia of lactiferous ducts
 (SMOLD). *See* subareolar abscess
 (SBA)
Stavros criteria, 5
stereotactic interventions, 2–3
stereotactic needles, 9
stromal cells
 gynecomastia, 51
 phyllodes tumor, 143, 145, 153
subareolar abscess (SBA), 38–40
 cytologic features, 39
 differential diagnosis, 39–40, 55
 histologic features, 39–40
 radiographic features, 38
 recurrence, 38
thyroid transcription factor (TTF1), 197
Toker cells, 93
triple test, 20, 27, 100
tuberculosis. *See* mammary tuberculosis
tubular adenoma (TA), 73–4
 clinical features, 73
 cytologic features, 73–4
 differential diagnosis, 68, 74
 histologic features, 73–4
 radiographic features, 73
tubular carcinoma, 66, 68, 100–4
 clinical features, 100–1
 cytologic features, 102
 differential diagnosis, 102
 adenomyoepithelioma, 153
 adenosis tumor, 68
 fibroadenoma, 103
 invasive ductal carcinoma, 104
 microglandular adenosis, 102–3
 radial scar, 103–4
 sclerosing adenosis, 102
 tubular adenoma, 74
 histologic features, 102, 122
 radiographic features, 101
tubulolobular carcinoma, 110
ultrasound-guided biopsy, 5–9
urokinase-type plasminogen activator (uPA),
 209
usual duct hyperplasia, 63, 100
 differential diagnosis, 64, 78
vacuum-assisted biopsy (VAB), 2, 16
 US-guided, 8
vacuum-assisted gamma-guided biopsy
 (VAGGB), 13
vasculitis, diabetic mastopathy, 47
Zuska’s disease. *See* subareolar abscess
 (SBA)