

Index

A

ABS. *See* American Brachytherapy Society

Adenocarcinoma. *See* Endocervical adenocarcinoma; Endometrial adenocarcinoma; Endometrioid adenocarcinoma; Villoglandular adenocarcinoma

Adnexal involvement, 118–119

Adriamycin, 206

Age, ECs and, 117

American Brachytherapy Society (ABS), 186

Androgens, estrogens converted from, 4

Angiogenesis inhibitors, 273

as targeted therapy, 273–274

Anovulation

BMI increasing and, 4

causes of, 14

cycles of, 14

Anthracyclines, single agent, 223

B

Bcl-2, 124

Bevacizumab, 230, 273

Bilateral salpingo-oophorectomy (BSO), 147

Biology

cancer, 229

of endometrial cancer, 260

tumor, 278

of uterine cancer, 267

Biopsy

endometrial, 22

commercial devices for, 18–19

positive findings on, 22

Biotechnology, 229–230

Bleeding

postmenopausal

Color Doppler for, 31–33

as papillary serous carcinoma

presenting symptom, 194

sonohysterography and, 47

TVUS and, 26–27

ultrasound in evaluation of, 25–26

uterine, 18

as early warning sign of EC, 161

evaluation of abnormal, 25

vaginal

abnormal, 15, 175

diagnosing, 22

preventing, 13, 16

Bloating, 188

BMI. *See* Body mass index

Body mass index (BMI), 1, 144–145

anovular cycles and, 4

average, 7

increasing, 2

anovular cycles and, 4

endometrial cancer risk increased with, 4

SHBG levels decreasing with, 3

Bortezomib, 275

Brachytherapy (BT)

adjuvant, 184–185

colpostats for, 187

cylinders for application of, 186

high-dose rate, 184–185

applicators, 186–188

intracavitary, 175, 184

low-dose, 185

vaginal, 184, 189, 204

for clear cell carcinoma, 212

for UPSC, 198

Breast cancer, 15, 58

BSO. *See* Bilateral salpingo-oophorectomy

BT. *See* Brachytherapy

C

CAH. *See* Complex atypical hyperplasia
Caldesmon, 70

Cancer. *See also* Carcinoma; Endometrial cancer; Uterine cancer

- biology, 229
- breast, 15, 58
- cervical, 16, 38–39
- colon, 15
- detection, 28–29, 35–36
 - TVUS for, 26–27
- of ovaries, 22
- papillary, 275
- rectal, 16
- staging of, 20, 29–30
- TGF- β role in, 271

Carcinogenesis. *See also* Endometrial carcinogenesis
understanding, 272

Carcinoma(s). *See also* Clear cell carcinoma; Endometrial carcinoma; Papillary serous carcinoma

- adenosquamous, 113
 - adjuvant chemotherapy for, randomized trial of, 229
 - endometrial, 51–52
 - precursor lesions and, 52–57
 - subtypes of, 51–52
 - endometrioid, 110
 - gross features of, 52–53
 - immunophenotype of, 58
 - poorly differentiated, 111
 - well-differentiated, 113
 - mixed, 62
 - mucinous, 57
 - serous, 94
 - endometrial polyps and, 58
 - gross features of, 58–59
 - histologic features of, 58–60
 - immunophenotype of, 60–61
 - uterine, 58
 - small cell, 63
 - squamous cell, 62, 114
 - transitional cell, 62
 - type II, 114
 - undifferentiated, 63
 - uterine, 118
 - single modality therapy in, 204
- Carcinosarcomas (CS), 52, 127–128, 193
as biologically aggressive, 201, 209
chemotherapy for, 258–259
 responsiveness of, 268
 single agent, 229
clinical behavior of, 202

clinical features of, 202
epidemiology/natural history of, 201–203
gross features of, 74
histologic features of, 74–75
immunophenotype of, 75
molecular basis of, 206
occurrence of, 75
recurrence rates of, 203, 206, 208
uterine

- adjuvant treatment of, 203
- chemoradiation for, 209
- chemotherapeutic regimen for, 209–210, 229
- chemotherapeutic treatment of, 224
- chemotherapy for, 203, 206–208
 - as classified, 229
 - initial evaluation of, 203
 - molecular abnormalities and, 96
 - multimodality therapy for, 208–209
 - occurrence of, 202
 - radiation for, 203–204, 205
 - surgical staging of, 207
 - treatment of, 203–209

β -catenin, mutations, 92–93, 125

CE. *See* Conjugated estrogens

Cell(s)

- endometrial, 271
 - growth, 275
 - malignant stroma effects on endometrial, 272
- endothelial, 273
- epithelial, 271
 - mutations in, 89–90
- necrosis tumor, 64
- primary cultures of, 271
- stromal, 271–272
 - conditioned media from, 272
- tumor, 92, 267
- type, 112–113

Cervical cancer, 16, 38–39

Cervix, tumors extending into, 38

Chemohormonal therapy, combination, 245

Chemoprevention, of endometrial cancer, 9

Chemoradiation, for uterine CS, 209

Chemotherapy

- adjuvant, 184
 - as administered, 228
 - agents, 225
 - benefit of, 227–228
 - for leiomyosarcoma, 255
 - randomized trial for CS with, 229
 - for uterine sarcomas, 254–255
- for carcinosarcomas, 258–259
- response rates for, 229

- clear cell carcinoma and, 211
- combination, 207, 223, 226–227, 257
- cytotoxic, radiation combined with, 242
- in early stages, 268–269
- for EC, 268
- in endometrial cancer treatment, 223–230
- hormonal therapy as maintenance after, 220
- improved outcomes from, 268
- integration of, 267
- with limited field radiation, 268–269
- platinum-based, 199
- progestins added to, 218
- randomized trials of, 226–227
- recent studies in, 193
- single agent, trials, 224–225
- systemic, 223
 - role of, 267
 - timing of, 243
 - toxicity inhibiting use of, 277
- for UPSC, 198–199
- for uterine carcinosarcoma, 203, 206–208
- VEGF and, 273
- Cisplatin, 225, 245
 - antitumor activity of, 223
- Cisplatinum, 199
- Clear cell carcinoma, 51, 78, 129, 193
 - chemotherapy for, 211
 - as commonly seen, 209
 - as described, 210
 - epidemiology/natural history of, 210–211
 - histologic appearance of, 209
 - histologic features of, 61
 - immunophenotype of, 61–62
 - intensity-modulated radiation therapy for, 212
 - survival estimates and, 209–210
 - treatment for, 211–212
 - trials on, 211
 - as type II carcinoma, 114
 - vaginal brachytherapy for, 212
- Clinical history, 47
- Colon cancer, 15
- Comparative genomic hybridization study, 95
- Complex atypical hyperplasia (CAH), in women under 40 years, 146
- Computed tomography (CT), 25, 162
 - abdomino-pelvic, 203
 - detection with, 40–42, 47
 - of endometrial cancer, 44
 - extrauterine disease identified by, 148
- Conjugated estrogens (CE), 4
- Cowden's disease, 91
- Cryotherapy, 15
- CS. *See* Carcinosarcomas
- CT. *See* Computed tomography
- Cystitis, 188
- Cytology
 - cervical, 18–19
 - peritoneal, 127, 168
 - positive, 241
 - positive peritoneal, 119
 - vaginal, 47
- Cytometry, flow/image, DNA analysis with, 121
- D**
- Death, from uterine cancer, 251
- Depo-medroxyprogesterone, 152
- Desmin, 70
- Diabetes, as risk factor for EC surgery, 162
- Diagnosis
 - differential
 - of endometrioid adenocarcinoma, 55–57
 - of leiomyosarcoma, 68
 - of low-grade endometrial stromal sarcoma, 71
 - of endometrial cancer, 22, 27–28, 51
 - of low-grade endometrial stromal sarcoma, 70
 - tests for uterine disease, 17
 - of tumor's malignancy, 64
 - of vaginal bleeding, 22
- Diarrhea, 190
- Disseminated peritoneal leiomyomatosis (DPL), 97
- DNA
 - flow/image cytometry analysis of, 121
 - ploidy, 122, 126
 - tumors and, 121
- Docetaxel, 259
- Doppler ultrasound
 - cancer detection with, 31–33
 - color, 31–32
 - TVUS with, 47
 - effectiveness of, 33
- Doxorubicin, 223, 245, 253, 268
 - antitumor activity of, 223
- DPL. *See* Disseminated peritoneal leiomyomatosis
- Drugs
 - malignancy beyond tumor cells targeted by, 267
 - for sarcomas, 257

E

- EBRT. *See* External beam radiotherapy
- EC. *See* Endometrial carcinoma
- EGFR. *See* Epidermal growth factor receptor
- EMT. *See* Epithelial to mesenchymal transition
- Endocervical adenocarcinoma, 116
- Endocrine therapy, endometrial adenocarcinomas and, 217
- Endogenous Hormones Breast Cancer Collaborative Group, 3
- Endometrial adenocarcinoma
endocrine therapy and, 217
lymph node sampling of patients with, 164
subtypes of, 87
systemic chemotherapy for, 267
- Endometrial cancer
advanced stage, 240–243
age-specific incidence rates for, 7
biology of, 260
Bokhman's type II, 58
brachytherapy for, low-dose v. high-dose rate, 185
care of, surgical treatment as standard of, 143
chemoprevention of, 9
chemotherapy in treatment of, 223–230
 combination, 226–227
 single agent, 224–225
classification of, 161–162
clinical management guidelines for, 164
as common, 143, 161, 193
CT of, 44
detection
 diagnostic modalities for, 27–28
 early, 46–47
development of, 275
diagnosis of, 22, 51
 imaging in, 25–47
 recommendations for, 19
early-stage type I, 169
 surgical therapy for, 161–170
early warning signs of, 161
EBRT treatment of, 186
epidemiology of, 1–10
EPT and, 1
ER expressed by, 269
estrogen production with development of, 243–244
ET and, 1, 3, 5
evaluation of, 25
fertility of patients with, 144, 151, 155
future directions for treatment of, 155, 277
genetic disorders of patients presenting with, 145–146
good prognosis associated with, 237
high-risk subtypes of, 193
hormonal agents in disseminated, studies of, 218–219
hormonal therapy treatment for, 219
 follow up after, 153
 method of, 152–153
 studies on, 218–219
hormonal v. cytotoxic therapy
 responsiveness of, 218
hormone receptor action in, mechanisms of, 153–154
imaging patients with, protocols for, 35
increased risk of developing
 BMI increasing associated with, 2, 4
 factors associated with, 14–15
 obesity and, 1, 14–15, 144–146, 162, 169
 tamoxifen and, 15
 women and, 14
infertility of presenting patients with, 145
intraoperative management of, 163
laparoscopic surgery and, 165–168
 vaginal hysterectomy combined with, 166
management of, conservative, 176–177
menopausal ET and increased risk of, 1, 3
 lowering, 6
menstrual irregularity and, 145
MRI of, 36
obesity as epidemiologic risk factor for, 1, 14–15, 144–146, 169
parity increasing causing decreasing risk of, 8
PET of, 45
postmenopausal women affected by, 144
postoperative radiation therapy for, 241–242
primary hormonal therapy of, 143–156
progestins in systemic therapy of, 217
PR's presence in, 153–154
PTEN gene and, 92
quality of life of patients with, 167–168
radiation therapy for locally recurrent, 237
recurrent, 46–47
 factors associated with improved survival in, 238
 isolated to central pelvis, 230
 risk of, 176
 surgery for stage IV, 239–240
 vaginal, 239
RT adjuvant therapy for, 175, 178–182

- locoregional relapse rate for, 176–177
 - after surgical treatment, 177, 183
- RT for, alone, 241
- screening for, 13–16
 - recommendations for, 19
- as staged surgically, 20
- stage III of, 242
- staging of, 29–30, 146–147, 166
 - routine surgical, 165–166
- surgery for, 161–170
 - recurrent, 237
 - risk factors of, 162–163
 - standard approach for, 162
 - vaginal hysterectomy, 165
 - women treated only with, 177
- systemic therapy in treatment of, 277
- treatment of, 237, 246
 - imaging in, 25–47
- Endometrial carcinogenesis, proteins lost/
 - decreased in, 270
- Endometrial carcinoma (EC). *See also*
 - Endometrioid adenocarcinoma
 - adnexal involvement in patients with, 118–119
 - age and, 117
 - cell type as prognostic factor in, 112–113
 - cervical involvement in, 116
 - chemotherapeutic regimens against, 268
 - clinicopathologic prognostic factors in, 106
 - as common, 105
 - cytogenetic studies of, 95–96
 - endometrioid, 87, 112
 - FIGO stage as prognostic parameter in, 106
 - grading of, 112
 - HER-2/neu role in, 123–124
 - histologic grade as prognostic parameter in, 111–112
 - lymphovascular permeation of ovary shown by, 118
 - Lynch syndrome and, 90
 - malignant progression of, preventing, 273–274
 - molecular alterations and, 87–88
 - nonendometrioid, 87
 - poor outcome of, 105–106
 - precursor lesions and, 52–57
 - relapses occurring in, 114
 - sentinel lymph node detection's role in, 121
 - sporadic, 125
 - stage IIIA, 118
 - subtypes of, 51–52
 - survival rate of, 116
 - TNM/FIGO staging systems as correlated in, 107
- Endometrial cells, primary cultures of, 271
- Endometrial hyperplasia, 9, 93–94, 270
- Endometrial stromal neoplasms, 260. *See also*
 - Low-grade endometrial stromal sarcoma
 - endometrial stromal nodule group of, 69
 - as immunoreactive, 70
- Endometrial stromal nodule, 71
- Endometrial stromal sarcoma. *See also*
 - Low-grade endometrial stromal sarcoma
 - high-grade, 260
 - hormonal therapy for, 260
 - treatment of, 259–260
- Endometrioid adenocarcinoma, 51–51, 78
 - features of
 - gross, 52–53
 - histologic, 53–54
 - PR expressed by, 154
 - treatment of
 - alternative, 144
 - with hormone therapy, 143–156
 - uterine, differential diagnosis of, 55–57
- Endometrium
 - exposure to estrogen unopposed by progesterone of, 2
 - proliferation of, 9
 - thickness of, 26–27
- Endostatin, 273
- Epidermal growth factor receptor (EGFR),
 - inhibitors, 274
- Epirubicin, 199, 223
- Epithelial to mesenchymal transition (EMT), 269
- EPT. *See* Estrogen-progestin therapy
- ER. *See* Estrogen receptors
- Erlotinib, 229–230
- Estradiol, 2
 - bioavailable, 3, 9
 - low ceiling of effect of, 3
 - plasma concentrations of, 2–3
- Estrogen. *See also* Conjugated estrogens;
 - Estrogen-progestin therapy;
 - Menopausal estrogen therapy;
 - Unopposed estrogen hypothesis
 - androgens converted to, 4
 - dose of, 2–3
 - endometrial cancer and excess production of, 243–244
 - exogenous, 15
 - ovarian tumors secreting, 14, 145–146
 - proteins downregulated by, 270
 - as unopposed by progesterone, 2, 14

Estrogen-progestin therapy (EPT)
 cancer of endometrium and, 1
 continuous-combined, 7

Estrogen receptors (ER)
 in EC treatment, 122
 endometrial carcinomas expressing, 269
 as expressed in leiomyosarcoma, 126
 genes regulated by, 269
 as limited therapeutic target, 269
 low-grade endometrial stromal sarcoma
 expressed in, 128
 negative tumors and, 122

Estrogen therapy (ET). *See also* Menopausal
 estrogen therapy
 effective doses of, 4–5
 endometrial cancer and, 1–3, 5

ET. *See* Estrogen therapy

Etoposide, 245

Evaluation. *See also* Sonohysterography;
 Ultrasound
 of bleeding
 postmenopausal, 25–26
 uterine, 25
 of endometrial cancer, 25
 of lymph nodes, 164–165
 periaortic, 120
 transabdominal endometrial, 26
 with TVUS of cancer, 26
 of uterine CS, 203
 of uterus, 17

Examination(s), pelvic, 47

External beam radiotherapy (EBRT), 175
 adjuvant pelvic, 177, 184, 188–189
 after hysterectomy, 188
 for EC treatment, 186

Extrauterine disease, 195

F

Fertility
 of endometrial cancer patients, 144, 151, 155
 preserving, 144, 151, 155

FIGO. *See* International Federation of
 Gynecology and Obstetrics

5-fluorouracil, 245

G

Gadolinium, 35

Gemcitabine, 259

Gene(s). *See also* Human epidermal growth
 factor receptor-2
 ER regulated, 269
 p53, 123–124, 195

PTEN, 91–92, 124–125, 269–270
 tumor suppressor, 269–270

Genetic disorders, of endometrial cancer
 patients, 145–146

Genetics, 87

Gland poor adenomyosis, 71

GOG. *See* Gynecology Oncology Group

Gynecology Oncology Group (GOG),
 146–147, 151, 211, 218

H

Hereditary nonpolyposis colon cancer
 (HNPCC), 15

Histiocytes, 69–70

HNPCC. *See* Hereditary nonpolyposis colon
 cancer

Hormonal therapy. *See also* Chemohormonal
 therapy; Progestin(s)
 adjuvant, for uterine sarcomas, 255
 combined, 243–244
 continued, 221
 current status of, 218–220
 data supporting, 148–150, 220
 for endometrial cancer, 143–156, 218
 studies on, 218–219
 for endometrial stromal sarcoma, 260
 for endometrioid adenocarcinoma of
 endometrium, fertility preserved
 with, 144, 151, 155
 failure of initial, 219
 follow up after, 153
 future directions of, 220–221
 as maintenance after chemotherapy, 220
 maintenance treatment following, 153
 method of treatment with, 152–153
 pregnancy following, 153
 progestin based, 220–221
 progression of disease and, 150–151
 response to, 150
 risks of, 150–152
 metastases to ovary/synchronous
 ovarian primary tumors, 151–152
 surgery v., 151
 tumor recurrence risk during pregnancy
 and, 152

Hormone receptors, response and, 219

Human epidermal growth factor receptor-2
 (HER-2/neu), 95
 location of, 123
 overexpression of, 230
 role in EC of, 123–124

Hydroxyprogesterone caproate, 244

Hyperplasia

complex atypical, in women under 40 years, 146
 diffuse endometrial thickening due to, 28
 endometrial, 9, 93–94, 270
 Hyperprolactinemia, 15
 Hypertension, as risk factor for EC surgery, 162
 Hypoxia, VEGF secretion stimulated by, 273
 Hysterectomy, 19–20
 adjuvant EBRT to pelvis after, 188
 for endometrial cancer, 143
 radical, 168–169
 residual disease after, 188
 total abdominal, 146–147
 vaginal
 for EC management, 165
 laparoscopy use combined with, 166
 for multiple comorbidities, 22
 Hysteroscopy, 25

I

Imaging
 as employed, 25
 for endometrial cancer diagnosis/treatment, 25–27
 protocols for, endometrial cancer and, 35
 Immunohistochemistry, 90–91
 as utilized, 154
 Immunostaining, PTEN, 92
 IMRT. *See* Intensity-modulated radiation therapy
 Infertility, endometrial cancer presenting patients with, 145
 Intensity-modulated radiation therapy (IMRT), 212
 International Federation of Gynecology and Obstetrics (FIGO), 29–30
 staging, 128–129
 cervical involvement in, 116–117
 as EC prognostic parameter, 106
 myometrial invasion and, 115
 system of, 107, 112
 TNM, 107
 Intrauterine device (IUD), progesterone, 152–153
 Invasion. *See* Lymphovascular invasion; Myometrial invasion
 IUD. *See* Intrauterine device

K

Kinase inhibitors, 274
 cyclin dependent, 275–276
 K-ras, 125, 269

L

Laparoscopic surgery, 22
 benefits of, 166
 EC and, 165–168
 quality of life of patients with, 168
 obesity and, 169
 outcomes/survival of, 167
 restaging and, 167
 theoretical concerns with, 168
 vaginal hysterectomy combined use with, 166
 Laparotomy, 21
 Leiomyomas, 26, 37
 highly cellular, 71
 Leiomyomatosis
 cellular intravenous, 71
 intravenous, 97
 as characterized, 76
 gross features of, 78
 histologic features of, 78
 Leiomyosarcoma(s)
 adjuvant chemotherapy for, 255
 agents tested in, 260
 as classified, 64
 cytogenetic abnormalities and, 97–98
 differential diagnosis of, 68
 epithelioid, 66–68, 126
 ER/PR expression in, 126
 gross features of, 64
 histologic features of, 64–67
 immunophenotype of, 68
 molecular abnormalities and, 97
 myxoid, 66–68, 79, 126
 prognosis of, 126
 spindle cell, 64–66, 68
 uterine, as common, 63
 Liver disease, 15
 Low-grade endometrial stromal sarcoma
 abnormalities and
 cytogenetic, 98–99
 molecular, 98
 aromatase expression shown by, 70
 as characterized, 128
 as common, 128
 diagnosis of, 70
 differential diagnosis of, 71
 ER/PR expressed in, 128
 gross features of, 69
 histological features of, 69–70
 immunophenotype of, 70
 morphologic variations shown by, 70
 Low-grade müllerian adenosarcoma
 glandular component of, 73
 gross features of, 72

- Low-grade müllerian adenocarcinoma (*cont.*)
 histologic features of, 72–73
 immunophenotype of, 74
 sarcomatous overgrowth and, 74, 127
- Lymphadenectomy, 37, 156, 207
 complete, 209
 CS and, 202
 therapeutic benefit of, 121, 164–165
- Lymphadenopathy
 criteria for, 40
 retroperitoneal, detection of, 40
- Lymph node(s)
 assessment, 119
 dissection, 120–121, 167
 EC and detection of sentinel, 121
 evaluation, 164–165
 inadequate, 165
 extrauterine disease and positive, 126
 metastases, 119–120
 pelvic, 120
 MRI and, 40
 pelvic, metastases, 176
 periaortic, surgical evaluation of, 120
 sampling, 162, 164
 uterine sarcomas and status of, 252
- Lymphovascular invasion, 195
 mimics of, 117
 occurrence of, 117
 perivascular lymphocytic infiltrates
 associated with, 117–118
- Lynch syndrome, 90, 99, 155
- M**
- Magnetic resonance imaging (MRI), 25
 accuracy of, 37
 in cancer staging, 33–34, 37
 capabilities of, 33
 of endometrial cancer, 36, 47
 lymph nodes and, 40
 myometrial invasion as assessed with,
 37–38, 148
 TVUS v., 30
- Malignant smooth muscle tumor. *See*
 Leiomyosarcoma(s)
- Medroxyprogesterone acetate, 153, 244, 245
- Megestrol acetate, 152, 244, 245
- Melphalan, 245
- Menopausal estrogen therapy
 dose of, 4–5
 endometrial cancer increased risk
 with, 1, 3
 reducing, 6
- Menorrhagia, 145
- Menstrual cycle, 2–3
- Microsatellite instability, 125
 detection of, 90
 as first reported, 90
 mutations in cells represented
 by, 89–90
- Molecular pathology, 87
- MRI. *See* Magnetic resonance
 imaging
- Multimodality therapy, for uterine CS,
 208–209
- Mutations
 β -catenin, 92–93, 125
 KRAS, 93–94
- Myometomy, 252
- Myometrial invasion, 148, 195, 211
 assessment
 of deep v. superficial, 148
 with MRI, 37–38, 148
 depth of, 114, 163
 measuring, 116
 extent of, 37
 FIGO staging system and presence
 of, 115
 intraoperative assessment of, 163
 occurrence, 113–114
- N**
- National Comprehensive Cancer Network
 (NCCN), 253
- NCCN. *See* National Comprehensive Cancer
 Network
- Neoplastic stroma, 72
- O**
- Obesity
 as epidemiologic risk factor for
 endometrial cancer, 1, 144–146
 morbid, 15
 as risk factor for EC, 1, 14–15, 144–146,
 162, 169
 surgery on patients with morbid, 169
- Oral contraceptives (OCs)
 composition of, 8
 endometrial cancer risk decreased with use
 of, 1–2, 8
- Ovarian cancer, 22
- Ovaries
 metastases to, hormonal therapy risk
 of, 151–152
 removal of, 22
- Ovoids, vaginal, 188

P

- P53 tumor suppressor gene, 94–95. 195
 mutations in, 269–270
- Paclitaxel, 223, 259
 antitumor activity of, 223
- Panniculectomy, 169
- Papanicolaou smears, 17, 252
- Papillary serous carcinoma. *See also* Uterine
 papillary serous carcinoma
 epidemiology of, 194–196
 natural history of, 194–196
 postmenopausal bleeding as presenting
 symptom of, 194
- Parity, endometrial cancer risk decreasing with
 increasing, 8
- Pathology. *See* Molecular pathology
- PEComa. *See* Perivascular epithelioid cell
 tumor
- Perivascular epithelioid cell tumor
 (PEComa), 79
 gross features of, 76
 histologic features of, 76
 immunophenotype of, 76
 as rare, 75
- PET. *See* Positron emission tomography
- Phosphatase, mutations in, 269
- Plasma, concentrations of estradiol/
 progesterone, 2–3
- Platinum compounds, 225, 268
- Polycystic ovarian syndrome, 14
- PORTEC. *See* Post Operative Radiation
 Therapy in Endometrial Carcinoma
- Positron emission tomography (PET), 25
 of endometrial cancer, 45
 nodal involvement detection with, 42–45
- Post Operative Radiation Therapy in
 Endometrial Carcinoma
 (PORTEC), 177
- PR. *See* Progesterone receptors
- Pregnancy, 15
 following hormonal treatment, 153
 tumor recurrence risk during, 152
- Prevention. *See also* Chemoprevention
 of vaginal bleeding, 13, 16
- Progesterone
 endometrial neoplasias prior to surgery
 and, 220
 endometrium's exposure to estrogen
 unopposed by, 2
 IUD, 152–253
 plasma concentrations of, 2–3
 as poorly tolerated, 152
 proteins upregulated by, 270
 response to, 153–154

- Progesterone receptors (PR)
 complexity of, 154
 in EC treatment/pathogenesis, 122
 endometrial cancer and presence
 of, 153–154
 endometrial carcinomas
 expressing, 269
 as expressed in leiomyosarcoma, 126
 increased, 244
 low-grade endometrial stromal sarcoma
 expressed in, 128
 negative tumors and, 122
 progestins effect on, 244
- Progestin(s), 246
 based hormonal therapy, 220–221
 dose of, 218
 effectiveness of, 244
 megestrol acetate, 221
 mitotic activity reduced by, 2
 PR as effected by, 244
 in systemic therapy of endometrial
 cancer, 217
 as targeted therapy, 273
 therapy, 218
 weight gain and, 219
- Proteasome inhibitors, 275–277
- Proteins
 estrogen downregulating, 270
 lost/decreased in endometrial
 carcinogenesis, 270
 progesterone upregulating, 270
 proteasome degradation of, 277
 retinoblastoma, phosphorylation
 of, 275
- PTEN gene, 91–92, 124–125,
 269–270

R

- Radiation therapy
 adjuvant, for uterine carcinosarcoma,
 203–204
 as curative, 238
 cytotoxic chemotherapy combined
 with, 242
 for locally recurrent endometrial cancer,
 237–239
- pelvic
 adjuvant, 253–254
 whole, 196
 postoperative, 241–242, 277
 radical, 238
 role of, 175
 for uterine carcinosarcoma, 203

Radiotherapy (RT). *See also* External beam radiotherapy
 adjuvant
 for early-stage EC, 175, 178–182
 role of, 175–176
 after surgical treatment of early-stage EC, 177, 183
 for endometrial cancer, primary treatment, 241
 local disease controlled by, as controversial, 196
 pelvic, 184
 sequelae of, 188–189
 for UPSC, 196–197
 for uterine sarcomas, 256–257
 whole abdominal, 196–197
 Recombinant tissues, 272
 Rectal cancer, 16
 RT. *See* Radiotherapy

S

SARC. *See* Sarcoma Alliance for Research through Collaboration
 Sarcoma Alliance for Research through Collaboration (SARC), 255
 Sarcomas. *See also* Leiomyosarcoma(s); Low-grade endometrial stromal sarcoma; Uterine sarcomas
 alterations in, 87
 drugs for, 257
 gynecologic, randomized trials in, 257
 high-grade endometrial stromal, 71, 79
 undifferentiated endometrial, 128
 undifferentiated stromal, 69, 79
 Screening, for endometrial cancer, 13–16
 Serosal involvement, 119
 Sex hormone-binding globulin (SHBG), 3
 SHBG. *See* Sex hormone-binding globulin
 SHG. *See* Sonohysterography
 Sonohysterography (SHG)
 as hysteroscopy alternative, 25
 for postmenopausal bleeding patients, 47
 procedure of, 31
 Staging
 as assigned, 106
 of cancer, 20
 endometrial, 29–30, 146–147, 165–166
 MRI in, 33–34, 37
 surgery and, 29–30
 cervical involvement in EC detected by, inaccuracy in, 116
 clinical, 147
 FIGO and, 106–107, 112, 115–117

operative techniques for, 21–22
 pathologic, 105
 surgico-pathologic, 109
 tumor, utility of TVUS for, 30
 UPSC procedure of surgical, 195
 of uterine carcinosarcoma, 207
 of uterine sarcomas, 126, 252
 Stromal cell compartment, malignant progression promoted by, 271–272
 Surgery. *See also* Laparoscopic surgery
 cytoreductive, 239
 for EC, 143
 early-stage, 161–170
 recurrent/stage IV, 239–240
 risk factors with, 162–163
 staging and, 29–30
 hormonal therapy v., 151
 on morbidly obese patients, 169
 periaortic lymph nodes and, 120
 for uterine sarcomas, early-stage, 252

T

Tamoxifen, 18, 219, 221, 244
 endometrial cancer risk increased by, 15
 Targeted therapies
 angiogenesis inhibitors as, 273–274
 exploration of current, 273–277
 progestins as, 273
 Taxanes, 223
 Temsirolimus, 230
 Tensin homolog, mutations in, 269
 TGF- β . *See* Transforming growth factor- β
 Thyroid disease, 14
 TLH. *See* Total laparoscopic hysterectomy
 Tomography. *See* Computed tomography; Positron emission tomography
 Total laparoscopic hysterectomy (TLH), 166
 Toxicity, of chemotherapy, 277
 Transforming growth factor- β (TGF- β)
 in cancer, 271
 pro-oncogenic effects of, 271
 signaling mechanism of, 271
 Transvaginal ultrasound (TVUS)
 cancer evaluation with, 26
 color Doppler with, 47
 endometrial morphology assessed by, 28–29
 endometrial thickness and, 26–27
 MRI v., 30
 technical factors limiting performance of, 30
 utility of, staging and, 30
 Trastuzumab, 230

Tumor(s). *See also* Carcinoma;
 Carcinosarcomas; P53 tumor
 suppressor gene; Perivascular
 epithelioid cell tumor
 angiogenesis, aggressive endometrial
 tumors and, 33
 biology, 278
 cell necrosis, 64
 cervical invasion of, 38–39
 characterization, preoperative, 25
 diploid, 121
 DNA and, 121
 endometrial, 33, 113–114
 ER and, 122
 grade, 147–148
 histology of, 277
 invasion, 40
 mesenchymal, 63, 97, 129
 deaths and, 251
 of mixed histology, 193, 209
 defining, 209
 müllerian
 low-grade, 71
 mixed, 63–68, 72, 74–75, 127–128
 in myometrium, 69
 ovarian
 estrogen secreting, 14, 145–146
 treatment of, 146
 ovarian sex cord, 71
 p53 tumor suppression gene and, 94
 PR and, 122
 smooth muscle, diagnosis of malignancy
 in, 64
 suppressor genes, 123–124
 synchronous ovarian primary, 151–152
 uterine, 71
 in vaginal tissue, 40
 TVUS. *See* Transvaginal ultrasound

U

Ultrasound, 25, 252. *See also* Doppler
 ultrasound; Transvaginal ultrasound
 endometrial pathology detected by, 25
 in postmenopausal bleeding evaluation,
 25–26
 Unopposed estrogen hypothesis, 2, 8
 UPSC. *See* Uterine papillary serous carcinoma
 Uterine cancer
 biology of, 267
 deaths of, 251
 pathology of, 51–78
 prognostic factors in, 105–129
 treatment of, changes in, 267

Uterine disease, diagnostic tests for, 17
 Uterine papillary serous carcinoma
 (UPSC), 193
 adjunct therapy for, 195, 196
 aggressive intrinsic biology of, 194, 196
 brachytherapy for, vaginal, 197
 chemotherapy for, 198–199
 clinical features of, 194
 combined modality therapy for, 199–200
 mutations in, 195
 overall survival of, 196
 pathological variables and, 195
 radiation treatment failures, 197
 radiotherapy for, 196–197
 recurrence of, 197–198
 retrospective studies on, 201
 stage 1, 197
 surgical staging procedure for, 195
 treatment for, 196, 201
 Uterine sarcomas, 97–98. *See also*
 Carcinosarcomas;
 Leiomyosarcoma(s)
 adjuvant therapies for, 253–255
 chemotherapy, 254–255
 pelvic radiation, 253
 advances in management of, 260
 hormonal therapy for, adjuvant, 255
 lymph node status and, 252
 management of, 251–261
 initial surgical management of, 252
 mixed müllerian tumors and, 63–68, 127
 recurrence of, 253
 recurrent, treatment of, 256–260
 RT for, 256–257
 staging of, 126, 252
 surgical resection and, 256
 systemic therapies for, 256–257
 Uterus
 evaluation of, 17
 malignant mesenchymal tumors of, 63
 mixed müllerian tumors of, 72

V
 Vaginal brachytherapy (VBT), 184, 189, 204,
 212, 1989
 Vaginal stenosis, 189
 Vascular endothelial growth factor (VEGF),
 230, 273
 secretion of, 273
 VBT. *See* Vaginal brachytherapy
 VEGF. *See* Vascular endothelial growth factor
 Villoglandular adenocarcinoma,
 as aggressive, 113

W

Weight, 1. *See also* Obesity
gain, 219

Wnt signaling pathway
as altered, 93
role in tumor cells, 92