

Contents

1	Introduction	1
	References	7
 Part I Basics: The Paradigm of Ontogenetic Cancer Fields		
2	Ontogenetic Anatomy and the Cancer Field Model of Local Tumor Progression	11
	References	22
3	Ontogenetic Anatomy of the Female Genital Ducts: Local Progression of Cervix Carcinoma	25
3.1	Cell Type Differentiation Trajectories Related to the Female Genital Tract	26
3.2	Mesonephric Morphogenetic Field	30
3.3	Primordial Genital Tract Morphogenetic Field	32
3.4	Genital Duct Morphogenetic Field	36
3.5	Müllerian Compartment	42
3.6	Primordial Gonad Morphogenetic Field and Ovarian Compartment	43
3.7	Ontogenetic Anatomy of the Subperitoneum	44
3.8	Mature Derivatives of Morphogenetic Fields Forming the Female Genital Tract	46
3.9	Local Cancer Fields of Carcinomas of the Suprasinus Vagina, Uterine Cervix, and the Endometrium	50
3.10	Landscape of Local Cervical Carcinoma Progression	54
3.11	Local Cancer Fields of Ovarian Carcinoma	54
	References	54
4	Ontogenetic Anatomy of the Female External Genitalia: Local Progression of Vulvar Carcinoma	57
4.1	Cell Type Differentiation Trajectory Related to the Female External Genitalia	57
4.2	Cloacal Membrane/Plate Morphogenetic Field	60
4.3	Urogenital and Glans Plate Morphogenetic Field	61
4.4	Phallic Urogenital Sinus Morphogenetic Field	62
4.5	Vulvar Compartment	68

4.6 Mature Derivatives from the Morphogenetic Fields Forming the Female External Genitalia 69

4.7 Landscapes of Vulvar Carcinoma Progression. 73

References. 74

5 The Ontogenetic Cancer Field Model for the Regional Spread of Carcinomas 75

5.1 Locoregional Links in Immune Surveillance: Basic Aspects 75

5.2 Regional Cancer Field Model 77

5.3 Development and Ontogenetic Anatomy of the Lymphatic System 80

5.4 Patterns of Lymph Node Metastasis 81

References. 83

6 Ontogenetic Anatomy of the Lower Human Body’s Lymphatic System: Lymphatic Network of the Female Genital Tract—Regional Progression of Gynecologic Carcinomas 85

6.1 Lymph Sac-Derived Lymph Territories 85

6.2 Hierarchy of Lymphatic Defense Lines 90

6.3 Surgical Anatomy of the Lymphatic Drainage of the Uterine Corpus and Cervix Derived from Indocyanine Green (ICG) Visualization 90

6.4 Regional Progression of Cervix Carcinoma 96

6.5 Regional Progression of Endometrial Carcinoma 99

6.6 Regional Progression of Vaginal Carcinoma 99

6.7 Regional Progression of Vulvar Carcinoma. 99

References. 101

Part II Clinics: Cancer Field Surgery

7 Ontogenetic Staging of Gynecologic Cancer: Diagnostic Management and Findings 105

7.1 Cervix Carcinoma 105

7.1.1 Histopathological Assessment 106

7.1.2 Stage oT1 Cancer Field 106

7.1.3 Stage oT2 Cancer Field 107

7.1.4 Stage oT3a Cancer Field 109

7.1.5 Stage oT3b Cancer Field 110

7.1.6 Stage oT4 Cancer Field 112

7.1.7 Ontogenetic Regional Staging 118

7.2 Vaginal Carcinoma. 124

7.2.1 Stage oT1 Cancer Field 124

7.2.2 Stages oT2–oT4 124

7.2.3 Ontogenetic Regional Staging 124

7.3	Endometrial Carcinoma	128
7.3.1	Histopathological Diagnostics	129
7.3.2	oT1 Cancer Field	129
7.3.3	oT2 Cancer Field	129
7.3.4	oT3a Cancer Field	130
7.3.5	oT3b Cancer Field	130
7.3.6	oT4 Cancer Field	130
7.3.7	Ontogenetic Nodal Staging	131
7.4	Vulvar Carcinoma	131
7.4.1	Stage oT1 Cancer Field	132
7.4.2	Stage oT2 Cancer Field	133
7.4.3	Stage oT3a Cancer Field	133
7.4.4	Stage oT3b Cancer Field	134
7.4.5	Stage oT4 Cancer Field	134
7.4.6	Ontogenetic Regional Staging	136
8	Total and Extended Mesometrial Resections with Defense Line- Directed Lymph Node Dissection	137
8.1	Total and Extended Mesometrial Resections and Peripheral Immune Network-Directed Lymph Node Dissection.	138
8.2	Equipment	141
8.3	Patient Preparation and Positioning	142
8.4	Abdominal TMMR and iLND: Step-By-Step Procedure.	144
8.5	TMMR on the Gravid Uterus.	159
8.6	TMMR After Supracervical Hysterectomy	160
8.7	TMMR After Total Hysterectomy	160
8.8	Abdominal EMMR	161
8.9	Anterior EMMR.	161
8.9.1	Modification of TMMR Step 6	161
8.10	Modification of TMMR Steps 7 and 8: Unilateral.	161
8.11	Urologic Repair and Reconstruction	162
8.12	Posterior EMMR	163
8.12.1	Modification of TMMR Steps 9–11.	163
8.13	Rectal Reconstruction	164
8.14	Abdominal Mesometrial Resections for Carcinomas Infiltrating the Suprasinus Vagina	164
8.15	Abdominoperineal Mesometrial Resections	165
8.16	Postoperative Management	165
8.17	Management of Complications	166
8.17.1	Urinary.	166
8.17.2	Intestinal.	167
8.17.3	Laparotomy and Colpotomy Healing.	167
8.17.4	Vascular	167
8.17.5	Neuronal.	168

9	Peritoneal Mesometrial Resection, Lymph-Collector-Guided First-Line Lymph Node Dissection and Extended Procedures	169
9.1	Equipment	170
9.2	Patient Preparation and Positioning	170
9.3	Peritoneal Mesometrial Resection and Lymph Collector-Guided Pelvic First-Line Lymph Node Dissection	171
9.3.1	Standard Procedure Step-by-Step	171
9.4	Lymph Collector-Guided Periaortic First-Line Lymph Node Dissection	179
9.5	Second- and Third-Line Lymph Node Dissection	183
9.6	Closures	183
9.7	Extended Peritoneal Mesometrial Resection: Type A	183
9.8	Extended Peritoneal Mesometrial Resection: Type B	183
9.9	Extended Peritoneal Mesometrial Resection: Type AB	183
9.10	Secondary PMMR and Lymph Collector-Guided Pelvic and Periaortic Lymph Node Dissection	183
9.11	Postoperative Management	183
9.12	Management of Complications	183
9.13	Cancer Field Surgery for Early-Stage Tubal Carcinoma	184
9.14	Cancer Field Surgery for Early-Stage Ovarian Carcinoma	184
	References	185
10	Laterally Extended Endopelvic Resections	187
10.1	Equipment	194
10.2	Patient Preparation and Positioning	194
10.3	Anterior LEER: Step-by-Step Procedure Illustrated in a Patient	194
10.4	Total LEER: Step-by-Step Procedure Demonstrated Post-mortem	201
10.5	Postoperative Management	209
10.6	Management of Complications	209
10.6.1	Laparotomy Healing	209
10.6.2	Perineal Wound Healing	209
10.6.3	Urinary	210
10.6.4	Intestinal	210
	References	210
11	Vulvar Field Resection and Immunologic Defense Line-Directed Lymph Node Dissection	211
11.1	Equipment	214
11.2	Patient Preparation and Positioning	215
11.3	iLND: Step-by-Step Procedures	215
11.4	Superomedial Quadrantectomy and First-Line Lymph Node Dissection	216
11.5	First- and Second-Line Lymph Node Dissection	218
11.6	First-, Second-, and Third-Line Lymph Node Dissection	219

11.7	Extended Inguinopubic Surgery.....	220
11.8	Total VFR: Step-by-Step	221
11.9	Anterior VFR: Step-by-Step	224
11.10	Lateral VFR: Step-by-Step.....	227
11.11	Posterior VFR: Step-by-Step	228
11.12	Focal VFR	229
11.13	Extended VFR	230
11.14	Resection of the Sinus Vagina	232
11.15	Postoperative Management	233
11.16	Management of Complications	233
12	Surgical Reconstruction of the Vulva Following	
	Vulvar Field Resection and Extended Regional Treatment	235
12.1	Equipment	237
12.2	Patient Preparation and Positioning.....	237
12.3	Surgical Techniques.....	237
12.4	“Open Book” Limberg Biflaps.....	238
	12.4.1 Flap Planning	238
	12.4.2 Flap Elevation	238
	12.4.3 Flap Transposition	238
	12.4.4 Flap Fixation and Donor Site Closure	239
12.5	Pudendal Thigh Flaps.....	239
12.6	Paralabial Island Flap.....	239
	12.6.1 Flap Planning	239
	12.6.2 Flap Elevation	240
	12.6.3 Flap Transposition	241
	12.6.4 Flap Fixation, Refinement, and Donor Site Closure	241
12.7	Paralabial Peninsular Flap	242
	12.7.1 Flap Planning	242
	12.7.2 Flap Elevation	242
	12.7.3 Flap Transposition	243
	12.7.4 Flap Fixation, Refinement, and Donor Site Closure	243
12.8	Gluteopudendal Flap	243
	12.8.1 Flap Planning	244
	12.8.2 Flap Elevation	245
	12.8.3 Flap Transposition, Fixation, and Donor Site Closure	246
12.9	Reconstruction Following Extended Regional Treatment	246
12.10	Postoperative Management	246
12.11	Management of Complications	246
	References.....	247

