

## CONTENTS

1.	Evaluation of Esophageal and Gastric Cytology and Tissue Specimens . . . . .	1
	Cytologic Specimens . . . . .	1
	Fine-Needle Aspirations . . . . .	1
	Endoscopic Brushings . . . . .	1
	Nonendoscopic Cytologic Specimens . . . . .	1
	Immunohistochemical and Molecular Studies on Cytologic Specimens . . . . .	2
	Reporting . . . . .	2
	Endoscopic Mucosal Specimens . . . . .	2
	Endoscopic Biopsy Specimens . . . . .	2
	Endoscopic Abrasive Transepithelial Brush Biopsy Specimens . . . . .	3
	Endoscopic Mucosal Resection Specimens . . . . .	4
	Reporting . . . . .	4
	Surgically Resected Specimens . . . . .	4
	Gross Examination . . . . .	4
	Microscopic Examination . . . . .	5
	Synoptic Reporting . . . . .	6
	TNM Classification and Carcinoma Staging . . . . .	7
2.	The Normal Esophagus . . . . .	19
	Embryology . . . . .	19
	Anatomy . . . . .	19
	Topography . . . . .	21
	Normal Luminal Narrowings . . . . .	21
	Esophageal Musculature and Sphincters . . . . .	21
	Blood Supply . . . . .	22
	Arterial . . . . .	22
	Venous . . . . .	22
	Lymphatic Drainage . . . . .	25
	Nerves . . . . .	25
	Histology . . . . .	25
	Mucosa . . . . .	25
	Submucosa . . . . .	28
	Muscularis Propria . . . . .	28
3.	Benign Epithelial Neoplasms and Non-Neoplastic Tumor-Like Conditions of Esophagus	31
	Glycogenic Acanthosis . . . . .	31
	Heterotopia . . . . .	32
	Squamous Papilloma . . . . .	35
	Pseudoepitheliomatous Hyperplasia . . . . .	38

*Tumors of the Esophagus and Stomach*

Adenomas . . . . .	39
Pseudodiverticulosis . . . . .	41
Developmental Cysts and Duplications . . . . .	44
4. Barrett Esophagus and Esophageal Adenocarcinoma . . . . .	51
Dysplasia . . . . .	52
Adenocarcinoma . . . . .	64
5. Esophageal Squamous Cell Carcinoma . . . . .	93
Squamous Intraepithelial Neoplasia/Dysplasia and Other Precursor Lesions . . . . .	93
Squamous Cell Carcinoma . . . . .	103
6. Miscellaneous Tumors of the Esophagus . . . . .	121
Neuroendocrine Tumors . . . . .	121
Esophageal Melanoma . . . . .	127
Hematopoietic Tumors . . . . .	127
Other Neoplasms that Involve the Esophagus . . . . .	128
7. The Normal Stomach . . . . .	133
Embryology . . . . .	133
Anatomy . . . . .	133
Histology . . . . .	133
Mucosa . . . . .	135
Lamina Propria . . . . .	138
Muscularis Mucosae . . . . .	138
Submucosa . . . . .	138
Muscularis Propria . . . . .	140
Subserosa and Serosa . . . . .	140
Blood Supply . . . . .	140
Lymphatic Drainage . . . . .	140
Nerves . . . . .	140
8. Gastric Precursor Lesions and Polyps . . . . .	143
Gastric Dysplasia (and Adenomas) . . . . .	143
Gastric Polyps . . . . .	156
Classification of Gastric Polyps . . . . .	156
Pyloric Gland Adenoma . . . . .	157
Oxyntic Gland Adenoma . . . . .	161
Fundic Gland Polyps . . . . .	162
Hyperplastic Polyps . . . . .	167
Gastritis Cystica Profunda-Polyposa . . . . .	172
Juvenile Polyps and Polyposis . . . . .	175
Peutz-Jeghers Polyps and Syndrome . . . . .	177
Cowden Syndrome-Associated Polyps . . . . .	179
Cronkhite-Canada Syndrome-Associated Polyps . . . . .	181

Differential Diagnosis of Hyperplastic and Hamartomatous Polyps . . . . .	183
Xanthoma . . . . .	183
Pancreatic Heterotopia . . . . .	185
9. Gastric Carcinomas . . . . .	199
General Features . . . . .	199
Esophagogastric Junction Adenocarcinoma . . . . .	199
Gastric Carcinoma in Young Patients (Early-Onset Gastric Cancer) . . . . .	199
Early Gastric Cancer . . . . .	200
Etiology and Pathogenesis . . . . .	200
Precancerous Conditions . . . . .	201
Risk Factors . . . . .	202
Genetic Predisposition and Hereditary Syndromes . . . . .	204
Clinical Features . . . . .	204
Gross Findings . . . . .	205
Early Gastric Cancer . . . . .	205
Advanced Gastric Cancer . . . . .	205
Microscopic Findings and Histologic Classification . . . . .	208
World Health Organization (WHO) Classification . . . . .	208
Laurén Classification . . . . .	212
Other Classifications . . . . .	215
Phenotypic Classification . . . . .	215
Merits of the Various Classifications of Gastric Cancer . . . . .	218
Early Gastric Cancer . . . . .	218
Histologic Grading . . . . .	221
Cytologic Findings . . . . .	221
Well-/Moderately Differentiated Gastric Adenocarcinomas . . . . .	221
Poorly Cohesive Gastric Adenocarcinomas . . . . .	221
Poorly Differentiated Gastric Adenocarcinomas . . . . .	222
Molecular Genetic Findings . . . . .	222
Molecular Subtypes . . . . .	224
Tumor Suppressor Genes . . . . .	226
Oncogenes . . . . .	226
Spread and Metastases . . . . .	227
Staging . . . . .	230
Treatment . . . . .	230
Early Gastric Cancer . . . . .	230
Advanced Gastric Cancer . . . . .	232
Prognosis . . . . .	232
Histologic Features and Prognosis . . . . .	233

Variants of Gastric Carcinoma . . . . .	233
Gastric Carcinoma with Lymphoid Stroma and Other Epstein-Barr Virus-Associated (EBVaGC) Variants . . . . .	233
Adenosquamous and Squamous Cell Carcinoma . . . . .	236
Micropapillary Carcinoma . . . . .	237
Hepatoid Adenocarcinoma and Other Alpha-Fetoprotein-Producing Gastric Carcinomas . . . . .	238
Choriocarcinoma . . . . .	241
Gastric Adenocarcinoma of Fundic Gland Type . . . . .	241
Parietal Cell Carcinoma . . . . .	241
Paneth Cell Carcinoma . . . . .	243
Mucoepidermoid Carcinoma . . . . .	243
Carcinosarcoma (Sarcomatoid Carcinoma) . . . . .	243
Gastroblastoma . . . . .	244
Malignant Rhabdoid Tumor . . . . .	244
Undifferentiated Carcinoma . . . . .	245
Small Cell Carcinoma . . . . .	245
Hereditary Gastric Cancer Syndromes and Inherited Cancer Predisposition	
Syndromes . . . . .	245
Inherited Cancer Predisposition Syndromes . . . . .	246
Hereditary Diffuse Gastric Cancer . . . . .	248
Gastric Adenocarcinoma and Proximal Polyposis of the Stomach . . . . .	254
10. Gastric Neuroendocrine Neoplasms . . . . .	281
Neuroendocrine Tumors . . . . .	281
General Features . . . . .	281
Gastric Neuroendocrine Cells . . . . .	281
Pathogenesis . . . . .	282
Clinical Features . . . . .	283
Subtypes of NET . . . . .	283
Gross Findings . . . . .	284
Microscopic Findings . . . . .	285
Neuroendocrine Hyperplasia and Dysplasia . . . . .	286
Grading . . . . .	291
Immunohistochemical Findings . . . . .	291
Molecular Genetic Findings . . . . .	291
Differential Diagnosis . . . . .	291
Spread and Metastasis . . . . .	291
TNM Staging . . . . .	292
Treatment . . . . .	293
Prognosis . . . . .	294

Neuroendocrine Carcinoma . . . . .	294
General Features . . . . .	294
Pathogenesis . . . . .	294
Clinical Features . . . . .	295
Gross Findings . . . . .	295
Microscopic Findings . . . . .	296
Composite Tumors . . . . .	299
Histologic Grading . . . . .	299
Immunohistochemical Findings . . . . .	299
Molecular Genetic Findings . . . . .	300
Differential Diagnosis . . . . .	301
Spread and Metastases . . . . .	301
Staging . . . . .	301
Treatment . . . . .	301
Prognosis . . . . .	302
11. Lymphoproliferative Disorders of the Stomach . . . . .	307
Extranodal Marginal Zone B-Cell Lymphoma of Mucosa-Associated Lymphoid Tissue (MALT Lymphoma) . . . . .	308
Diffuse Large B-Cell Lymphoma . . . . .	318
Burkitt Lymphoma . . . . .	324
Mantle Cell Lymphoma . . . . .	325
Follicular Lymphoma . . . . .	326
Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma . . . . .	327
12. Mesenchymal Tumors of the Esophagus and Stomach . . . . .	333
Gastrointestinal Stromal Tumor . . . . .	335
Leiomyoma . . . . .	354
Leiomyosarcoma . . . . .	358
Schwannoma . . . . .	362
Granular Cell Tumor . . . . .	363
Inflammatory Fibroid Polyp . . . . .	366
Plexiform Fibromyxoma . . . . .	369
Glomus Tumor . . . . .	372
Synovial Sarcoma . . . . .	373
Inflammatory Myofibroblastic Tumor . . . . .	375
Perivascular Epithelioid Cell Tumors . . . . .	378
GI Neuroectodermal Tumor . . . . .	380
Gastroblastoma . . . . .	382
Well-Differentiated Liposarcoma (Giant Fibrovascular Polyp) . . . . .	384
Vascular Lesions . . . . .	386
Index . . . . .	395