



**The Arab League
Council of the Health Ministers
The Arab Board of Health Specializations
General Secretariat**

The Arab Board of Anatomic Pathology & Cytopathology

Anatomic Pathology & Cytopathology

Examination Core Content Guide Book

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Introduction:

The purpose of the Arab Board of Anatomic Pathology & Cytopathology Examinations is to evaluate a candidate's **knowledge base, interpretive judgment, and practical diagnostic competence** in recognizing disease entities and applying the investigative methods of **anatomic pathology**. The examination emphasizes the integration of **clinical data, morphologic, immunohistochemical, and molecular findings** in formulating accurate and **clinically relevant diagnoses**.

This guide provides an overview of the **content domains** that may be assessed in the **Arab Board of Pathology Part I and Part II Certification Examinations**.

Expected Level of Competence

Entities in this guidebook are identified under 2 levels: **P, A**. Residents at both levels are expected to achieve proficiency **appropriate to their stage of training** across the following tiers:

P = Primary	Core knowledge and fundamental concepts expected for Part I Examination
A = Advanced	Core knowledge and fundamental concepts expected for Part II Certification Examination

Guidance for Exam Preparation:

The diseases and diagnostic entities included in this manual represent the **core knowledge areas** that form the foundation of training in pathology. However, this list is **not comprehensive** and should not be interpreted as **restricting the potential scope of examination questions**. The guide is intended to serve as a **curricular framework** to direct learning and preparation, emphasizing essential competencies and promoting readiness for safe and effective professional practice in anatomic pathology.

Content:	Page
1. General Pathology (Chapters 1-10 from Robbins & Kumar Basic Pathology ed 10/11)	3
2. Autopsy & Forensics Pathology	4
3. Cytopathology	5
4. Laboratory Management	6
5. Informatics, Digital & Computational	7
6. Infectious Diseases for Anatomic Pathology Residents	8
7. Breast	10
8. Skin	11
a. Skin non-neoplastic lesions	
b. Skin nonmelanocytic tumor	
c. Skin melanocytic tumor	
9. Endocrine System	16
a. Pituitary gland	
b. Endocrine Pancreas	
c. Thyroid & parathyroid glands	
d. Adrenal gland & paraganglia	
10. GI System	21
a. Esophagus	
b. Stomach	
c. Gallbladder & Extrahep bile ducts	
d. Small intestine & Ampulla	
e. Colon	
f. Appendix	
g. Anus & perianal region	
11. Liver & Intrahepatic Bile Ducts	31
12. Urinary System	33
a. Bladder & Urothelial Tract	

b. Kidney tumors	
c. Kidney nontumors	
13. Medical Renal Disease	36
14. Female Genital Tract	38
a. Vulva & vagina	
b. Cervix	
c. Uterus	
d. Fallopian tubes & broad ligament	
e. Ovary	
f. Placenta	
15. Male Genital Tract	46
a. Prostate gland & Seminal Vesicles	
b. Testis & paratestis	
c. Penis & scrotum	
16. Head and Neck	49
a. Oral cavity & Oropharynx	
b. Nasal cavity & nasopharynx and paranasal sinuses	
c. Larynx, Hypopharynx & Trachea	
d. Mandible & Maxilla	
e. Salivary glands	
17. Lung, Mediastinum, Pleura	56
a. Lung	
b. Mediastinum	
c. Pleura & Peritoneum	
18. Bone & joints	60
19. Soft tissue	62
20. Hematopathology	64
a. Bone marrow	
b. Hematologic disorders: Neoplastic, Non-neoplastic & Immune disorders	
c. Lymph nodes & Spleen	
d. Lymphoma & related disorders	
21. Nervous System and Muscle	72
a. CNS Non-tumor	
b. CNS Tumor	
c. Muscle & nerve nontumor	
22. Heart & Vascular Pathology	77
23. Molecular Pathology	78

1. General Pathology (Chapters 1-10 from Robbins Basic Pathology ed 10)

Topic	Level
Cellular adaptation patterns and their microscopic correlates	P
Oxidative stress and antioxidant defense mechanisms	P
Cellular aging, telomere attrition, and senescence relevance	P
Intracellular accumulations in tissue sections	P
Pathways of cell death (intrinsic/extrinsic), apoptosis, cell necrosis.	P
Chemical and hypoxic injury: patterns and mechanisms	P
Clinical–pathologic correlation in ischemic and toxic organ injury	P
Laboratory markers of cell injury (enzymatic leakage patterns)	P
Granulomatous inflammation: types, causes, and diagnostic approach	P
Angiogenesis and remodeling mechanisms in repair	P
Recognition of hemorrhage, thrombosis, and embolism on gross/histo	P
Pulmonary and systemic embolism: clinical path correlation	P
Morphology and pathogenesis of infarction	P
Basic cytogenetic and molecular diagnostic methods	P
Mendelian vs multifactorial inheritance patterns	P
Structural chromosomal abnormalities and key syndromes	P
Mechanisms of mutation and functional consequences	P
Inborn errors of metabolism—diagnostic examples	P
Prenatal and postnatal diagnostic principles	P
Overview of innate and adaptive immune mechanisms	P
Hypersensitivity reactions (I–IV) with examples	P
Autoimmune diseases—pathogenesis and diagnostic criteria	P
Immunodeficiency disorders—Primary and secondary	P
Amyloidosis: types, stains, and diagnostic approach	P
Mechanisms of carcinogenesis (chemical, viral, radiation)	P
Paraneoplastic and systemic tumor effects	P
Host–pathogen interactions and immune evasion	P
Mechanisms of chemical and drug toxicity	P
Effects of alcohol, tobacco, and industrial toxins	P
Radiation injury – gross and microscopic features	P
Malnutrition and obesity: systemic pathologic effects	P
Vitamin and trace element deficiencies	P
Iatrogenic, environmental and occupational injury mechanisms	P
Perinatal and neonatal pathology: asphyxia, prematurity	P
Congenital malformations and their classifications	P
Inborn errors of metabolism (screening and morphology)	P
Perinatal infections (TORCH complex)	P
Sudden infant death syndrome and perinatal autopsy approach	P

2. Autopsy & Forensics Pathology

Topic	Level
Ancillary investigations	A
Asphyxia: Postmortem Findings	A
Autopsy report - general	P
Blunt force injuries, Brain Contusion	P
Child abuse	A
Postmortem chemistry	A
Postmortem microbiology & infections	A
Sudden cardiac death	P
Sudden unexpected deaths in infants and children	A
Therapy related deaths	A
Traumatic axonal injury	A
High-Risk Autopsy and Biosafety	A
Medicolegal autopsy	A
Chain of custody (hospital autopsies)	A
Chain of custody (medicolegal autopsies)	A
Ancillary studies	A
Ethical and Professional Responsibilities	A
Consent and legal authority	P
Types of autopsy (clinical, medicolegal, limited, virtual)	P
Indications for autopsy (hospital & medicolegal autopsies)	P
Contraindications for autopsy	P
High-risk cases (HIV, CJD, TB, COVID-19, viral hemorrhagic fevers)	A
Biosafety levels and PPE requirements	A
Pre-autopsy review of clinical data, imaging, consent verification	P
External body examination	P
Tissue sampling and fixation	P
Brain removal and handling (CJD precautions)	A
Toxicology, microbiology, and ancillary studies	A
Fetal and perinatal autopsy indications	A
Placental examination	P
Postmortem changes (livor, rigor, algor mortis)	P
Postmortem artifacts	P
Estimation of time since death	A
Cause of death hierarchy (immediate, underlying, contributory)	P
Manner of death classification	P
Correlation of clinical and pathologic findings	P
Clinicopathologic conference (CPC) and audit	A
Autopsy report turnaround time and documentation	P
Tissue retention and disposal policies	A
Communication with family and clinicians	P
Cultural and religious considerations	P
Quality assurance in autopsy service	A

3. Cytopathology

Lesion	Level
Quality assurance in cytopathology	A
Cytology: Fixation and common stains	P
FNA: Indications, Limitations, Contraindications, and Complications	P
FNA: Rapid on-site evaluation (ROSE)	A
FNA: Sample triage (IHC, molecular, microbiology)	A
Ultrasound-guided FNA and EUS-FNA	A
Liquid-based cytology: Principles, advantages, disadvantages	A
Effusion cytology: Sample collection and processing	P
Effusion cytology: Normal findings	P
Effusion cytology: Common malignancies and metastatic patterns	A
Effusion cytology: Sample triage and storage	P
Effusion cytology: IHC panel selection	A
Effusion cytology: Ancillary molecular tests	A
Effusion cytology: Flow cytometry and immunophenotyping	A
Paraffin block preparation and advantages	P
Cervix: Bethesda System categories	P
Cervix: Screening policy (start, end, interval modification)	P
Cervix: HPV DNA co-testing and reflex testing policy	P
Cervix: Normal and non-neoplastic findings	P
Cervix: ASC-US and management	P
Cervix: ASC-H (atypical squamous cells—cannot exclude HSIL)	A
Cervix: LSIL (low-grade squamous intraepithelial lesion)	P
Cervix: HSIL (high-grade squamous intraepithelial lesion)	A
Cervix: Atypical glandular cells and differential diagnosis	A
Cervix: Cytologic-histologic correlation and QA programs	A
Lung cytology: WHO reporting system	A
Lung cytology: FNA, BAL, and brush cytology	A
Lung cytology: Normal and non-neoplastic findings	A
Lung cytology: Primary vs. metastatic malignancies	A
Lung cytology: Ancillary studies (IHC, molecular, PD-L1)	A
Pancreas: EUS methodology and sample adequacy	P
Pancreas: EUS sample triage	P
Pancreas: Cystic lesion morphology in EUS cytology	P
Pancreas: EUS ancillary studies (chemistry, molecular)	P
Salivary gland cytology: Milan reporting system	P
Salivary gland: Nondiagnostic category	P
Salivary gland: Non-neoplastic lesions	P
Salivary gland: AUS (atypia of undetermined significance)	A
Salivary gland: Neoplasm—benign	P
Salivary gland: SUMP (salivary gland neoplasm of uncertain malignant potential)	A
Salivary gland: Suspicious for malignancy	A
Salivary gland: Malignant	A
Thyroid FNA: Adequacy criteria	P
Thyroid FNA: Bethesda diagnostic categories	P

Thyroid FNA: Bethesda-based patient management	P
Thyroid FNA: Molecular testing and risk stratification	A
Urine cytology: Specimen types and collection methods	P
Urine cytology: Paris system for reporting	A
Urine cytology: Low-grade urothelial lesions and challenges	A
Ancillary molecular tests in cytopathology (NGS, FISH, PCR)	A
Digital cytology and AI-based image screening	A
Cytology laboratory quality control and CAP checklists	A
Cytopathology quality assurance program	A
Breast FNA: Benign Lesions	P
Breast FNA: Malignant Lesions: Carcinoma, Sarcoma, Lymphoma	A
Lymph Node FNA: Specimen Triage: Cell block, Flowcytometry, PCR	P
Lymph Node: Reactive, Inflammatory changes	P
Lymph Node: Malignant: Primary, Metastatic	P
Hepatobiliary FNA: Benign, Malignant	A

4. Laboratory Management

Topic / Lesion	Level
Laboratory Accreditation standards and Inspection principles	A
Document and procedure management	P
Competency assessment and maintenance	P
Laboratory and professional leadership	A
Onboarding, training, and employee retention	P
External quality assessment testing	A
Lean Process / Six Sigma	A
Peer (case) review in anatomic pathology	A
Principles of laboratory quality improvement	A
Quality assurance for surgical pathology & cytopathology	A
Reducing analytic nonanalytic and laboratory errors	A
Laboratory Safety	P
Critical Value Diagnosis: Categories, Communication	P
Laboratory Ergonomics	P
Patient safety Issues	P
Medicolegal overview and terminology	A
Quality systems (QA, QC, QI, TQM, PDCA, Six Sigma)	P
Pre-analytic, analytic, and post-analytic error control	P
Standard Operating Procedures (SOPs) and documentation	P
Competency assessment and corrective actions	P
CAP Laboratory Accreditation Program (LAP) and CLIA '88 requirements	P
Regulatory compliance (OSHA, HIPAA, Safe Medical Devices Act)	P
Key Performance Indicators (KPIs) and audit systems	A
Root-cause analysis and sentinel events	A
Incident reporting, near-miss tracking, and error classification	A
Risk management and patient safety initiatives	A
Continuous Quality Improvement (CQI) and benchmarking	A

Quality management in histology laboratory	P
Quality management in anatomic pathology	A
Quality management in autopsy pathology	A
Lean and Six Sigma applications in pathology workflow	A
Internal and external proficiency testing programs	P
Quality management metrics and data interpretation	A
Integration of QA/QC with laboratory information systems (LIS)	A

5. Informatics, Digital & Computational

Topic / Lesion	Level
APLIS (Anatomic Pathology Laboratory Information System)	P
Application of graph neural networks to whole slide images	A
Artificial intelligence	A
Augmented reality microscopy (ARM)	P
Automated assessment of cytology specimens	P
Autoverification in the core clinical laboratory	P
Barcoding and tracking	P
Cognition and human-computer interaction in pathology	A
Computational methods for molecular pathology	A
Computational pathology fundamentals & applications	P
Computer aided detection	P
Computer aided diagnosis	P
Convolutional neural networks	A
Cybersecurity	P
Data repositories	P
Data representation and communication standards	A
Database fundamentals	P
Digital imaging fundamentals & standards	P
Digitization and precision oncology	A
Education (digital pathology education)	P
Ethical use of AI	A
Fluorescent microscopy fundamentals & applications	P
Foundation Artificial intelligence (AI) models	A
Hematopathology (applications of AI)	A
Image analysis applications	P
Image analysis fundamentals	P
Intraoperative consultation telepathology	P
LIS fundamentals	P
Machine learning fundamentals	A
Multiplex immunofluorescence	P
Natural language processing (NLP)	A
Quality control for digital pathology	P
Structured query language (SQL)	P
Surgical pathology informatics	A

Synthetic whole slide images	A
Telecytology	P
Whole Slide Image (WSI) applications, fundamentals	P

6. Infectious Diseases for Anatomic Pathology Residents

Topic	Level
Specimen fixation and use of biosafety cabinets during infectious case handling	P
Universal precautions and laboratory biosafety cabinets levels (BSL-1 to BSL-3)	P
Decontamination and disinfection of infectious materials	P
Handling of formalin-fixed versus unfixed infectious specimens	P
Tissue fixation and containment of suspected prion disease	A
Specimen triage for culture, histology, and molecular testing	P
Specimen labeling and documentation in infectious cases	P
Formalin penetration and fixation adequacy for infected tissues	P
Autopsy safety and infection control procedures	A
Handling and processing of suspected tuberculosis cases	P
Safety procedures for HIV, HBV, and HCV in histopathology	P
Airborne, droplet, and contact precautions in the gross room	P
Waste disposal and sharps safety for infected material	P
Cryostat and frozen section safety in suspected infections	A
Fixation requirements for molecular and special studies in infection	A
Special stains for pathogens (Gram, Ziehl-Neelsen, Fite, GMS, PAS)	P
Histologic patterns of infection (suppurative, granulomatous, necrotizing, viral cytopathic)	P
Tissue changes in mycobacterial infections	P
Recognition of fungal elements in tissue sections	P
Recognition of parasitic forms in tissue sections	P
Recognition of viral inclusions and cytopathic effects	P
Use of immunohistochemistry in infectious disease diagnosis	A
Use of in-situ hybridization for microbial identification	A
Molecular diagnostics for infectious agents in tissue (PCR, NGS)	A
Correlation of histologic, culture, and molecular findings	A
Differential diagnosis of infection/inflammation versus neoplasm	A
Infections in immunocompromised patients and transplant recipients	A
Granulomatous diseases and their infectious causes	A
Patterns of necrosis and inflammation suggestive of infection	P
Artifact recognition in infectious lesions	P
Autolysis and its impact on microbial interpretation	P
Reporting format for infectious disease diagnosis in tissue	P
Mandatory reporting of certain infectious diseases to public health authorities	A
Role of the pathologist in outbreak investigation	A
Communication with infection control and public health units	A
Retention, storage, and transport of infectious tissue blocks and slides	A
Legal and ethical considerations in reporting communicable diseases	A

Documentation of occupational exposure in the histopathology laboratory	A
Post-exposure management and vaccination policy (HBV, rabies, etc.)	A
Participation in hospital infection control committees	A
Quality control and assurance for infectious disease testing in anatomic pathology	A
Internal and external proficiency testing for infectious pathology	A

7. Breast

Lesion	Level
Anatomy, Histology, & Embryology – Breast	P
Normal histology & variants	P
Developmental anomalies	P
Accessory breast tissue	P
Nipple & areola lesions	P
Galactocele	P
Mastitis (acute, chronic, plasma cell, periductal)	P
Fat necrosis	P
Duct ectasia	P
Granulomatous lobular mastitis	P
Diabetic mastopathy	A
Radiation changes	P
Fibrocystic changes	P
Columnar cell change / hyperplasia	P
Usual ductal hyperplasia	P
Atypical ductal hyperplasia	P
Atypical lobular hyperplasia	P
Lobular carcinoma in situ (classic, pleomorphic)	P
Ductal carcinoma in situ (DCIS)	P
Microinvasive carcinoma	P
Invasive ductal carcinoma NST	P
Invasive lobular carcinoma	P
Tubular carcinoma	P
Mucinous carcinoma	P
Cribriform carcinoma	A
Medullary carcinoma	P
Micropapillary carcinoma	A
Apocrine carcinoma	A
Metaplastic carcinoma	A
Paget disease of the nipple	P
Encapsulated papillary carcinoma	A
Solid papillary carcinoma	A
Intraductal papilloma	P
Multiple papillomas (Papillomatosis)	AA
Papillary DCIS	A
Adenomyoepithelioma	A

Adenoid cystic carcinoma	P
Secretory carcinoma	A
Low-grade adenosquamous carcinoma	A
Basal-like carcinoma	A
Neuroendocrine carcinoma	A
Myoepithelial carcinoma	A
Fibroadenoma	P
Phyllodes tumor (benign / borderline / malignant)	P
Pseudoangiomatous stromal hyperplasia (PASH)	P
Myofibroblastoma	P
Nodular fasciitis	P
Lipoma	P
Angiolipoma	P
Hemangioma	P
Angiosarcoma	A
Hemangioendothelioma	A
Lymphoma involving breast	A
Metastases to breast	P
Gynecomastia	P
Male breast carcinoma	A
Breast biomarkers (ER, PR, HER2)	P
Staging – breast carcinoma	P

8. Skin: Non-tumor Disease Lesion

	Level
Anatomy, histology & embryology	P
Grossing & features to report	P
WHO classification	A
Amyloidosis (cutaneous)	A
Acanthosis nigricans	P
Acantholytic disorders (Hailey-Hailey, Darier disease)	P
Acne (acne vulgaris, rosacea)	P
Actinic keratosis	P
Alopecia areata	P
Angioedema	P
Apoptotic dermatitis	P
Blistering diseases (pemphigus, bullous pemphigoid)	P
Bullous pemphigoid	P
Cicatricial pemphigoid	P
Pemphigus vulgaris	P
Pemphigus foliaceus	P
Pemphigus vegetans	A
Paraneoplastic pemphigus	A
Epidermolysis bullosa	A

Collagen vascular diseases (SLE, dermatomyositis, scleroderma)	A
Chronic cutaneous lupus erythematosus	A
Discoid lupus erythematosus	A
Subacute cutaneous lupus erythematosus	A
Dermatomyositis	A
Morphea (localized scleroderma)	P
Systemic sclerosis	A
Cutaneous vasculitis	A
Leukocytoclastic vasculitis	A
Erythema multiforme	P
Erythema nodosum	P
Erythema elevatum diutinum	A
Drug eruption	P
Fixed drug eruption	P
Lichen planus	P
Lichenoid dermatitis	P
Lichen sclerosus	P
Psoriasis vulgaris	P
Pustular psoriasis	A
Guttate psoriasis	P
Seborrheic dermatitis	P
Spongiotic dermatitis (eczema, contact dermatitis)	P
Atopic dermatitis	P
Contact dermatitis	P
Stasis dermatitis	P
Interface dermatitis	A
Granulomatous dermatitis	A
Necrobiosis lipoidica	A
Granuloma annulare	P
Sarcoidosis (cutaneous)	A
Infectious granulomas (mycobacterial, fungal, parasitic)	A
Mycobacterial skin infections	A
Tuberculoid granulomas	A
Fungal infections (dermatophytosis, blastomycosis, histoplasmosis)	P
Viral infections (molluscum contagiosum, herpes simplex, verruca)	P
Parasitic infections (leishmaniasis, scabies)	P
Bacterial infections (impetigo, erysipelas, cellulitis)	P
Syphilis (cutaneous)	A
Hansen disease (leprosy)	A
Eosinophilic cellulitis (Wells syndrome)	A
Panniculitis (lobular, septal)	A
Erythema induratum	A
Lupus panniculitis	A
Subcutaneous panniculitis-like T cell lymphoma	A

Neutrophilic dermatoses (Sweet syndrome, pyoderma gangrenosum)	A
Xanthomas	P
Calcinosis cutis	P
Cutaneous mucinoses	A
Pigmentary disorders (vitiligo, melasma)	P
Vitiligo	P
Melasma	P
Postinflammatory hyperpigmentation	P
Hypopigmentation disorders (albinism, pityriasis alba)	P
Cutaneous metastasis	A
Radiation dermatitis	P
Chronic ulcer	P
Graft versus host disease	A
Cutaneous T cell lymphoma (Mycosis fungoides / Sezary syndrome)	A

8. Skin: Non-Melanocytic Tumors Lesion

	Level
Anatomy & histology – skin	P
Grossing & features to report	P
WHO classification	A
Apocrine carcinoma	A
Apocrine hidrocystoma	P
Apocrine mixed tumor (chondroid syringoma)	A
Apocrine poroma	P
Apocrine tubular adenoma	A
Eccrine adenocarcinoma	A
Eccrine cylindroma	P
Eccrine hidradenoma	P
Eccrine spiradenoma	P
Eccrine poroma	P
Eccrine carcinoma (malignant eccrine poroma)	A
Hidradenocarcinoma	A
Hidradenoma papilliferum	P
Microcystic adnexal carcinoma	A
Porocarcinoma	A
Sebaceous adenoma	P
Sebaceous carcinoma	A
Sebaceous hyperplasia	P
Syringocystadenoma papilliferum	P
Syringoma	P
Trichilemmoma	P
Trichoblastoma	A
Trichoepithelioma	P
Trichofolliculoma	P

Trichilemmal carcinoma	A
Trichilemmal cyst (pilar cyst)	P
Trichoadenoma	P
Angiofibroma (fibrous papule)	P
Angiolipoma	P
Angiokeratoma	P
Angiolymphoid hyperplasia with eosinophilia	P
Angiosarcoma	A
Epithelioid hemangioendothelioma	A
Kaposi sarcoma	A
Lymphangioma circumscriptum	P
Pyogenic granuloma	P
Spindle cell hemangioma	P
Tufted angioma	A
Atypical fibroxanthoma	A
Dermatofibroma (benign fibrous histiocytoma)	P
Dermatofibrosarcoma protuberans	A
Fibrous papule	P
Myxoid dermatofibrosarcoma	A
Pleomorphic dermal sarcoma	A
Granular cell tumor	P
Schwannoma	P
Neurofibroma	P
Malignant peripheral nerve sheath tumor	A
Pacinian neurofibroma	P
Lipoma	P
Angiolipoma	P
Hibernoma	A
Atypical lipomatous tumor / well differentiated liposarcoma	A
Cutaneous carcinosarcoma	A
Merkel cell carcinoma	A
Ccutaneous adnexal tumor, NOS	A
Cutaneous lymphoid proliferations and lymphomas	A

8. Skin: Melanocytic Tumors

Lesion	Level
Staging	A
WHO classification	A
WHO classification for pediatric melanocytic neoplasms	A
Melanotic macule	P
Melanocytic hyperplasia	P
Lentigo	P
Café-au-lait spot	P

Ephelis (freckle)	P
Nevi – general	P
Combined nevi (clonal, blue, PEM, DPN, BAP1, Spitz)	A
Common acquired nevus	P
Dysplastic nevus	A
Halo nevus	P
Meyerson nevus	P
Nevus spilus	P
Nevus with recurrence / traumatized nevus	P
Recurrent nevus	P
Special site nevus	A
Blue nevus / cellular blue nevus	P
Cutaneous neurocristic hamartoma	A
Dermal melanocytosis	P
BAP1 inactivated nevus / melanocytoma	A
Pigmented epithelioid melanocytoma	A
WNT activated deep penetrating / plexiform melanocytoma (nevus)	A
Spitz nevus	P
Reed nevus	P
Atypical Spitz tumor (Spitz melanocytoma)	A
Malignant Spitz tumor (Spitz melanoma)	A
Invasive melanoma	A
Desmoplastic melanoma	A
Lentigo maligna melanoma	A
Melanomas with unusual features (balloon cell, verrucous, signet ring cell, small cell, etc.)	A
Metastatic melanoma	A
Nevoid melanoma	A
Nodular melanoma	A
Pediatric melanoma	A
Regressed melanoma (tumoral melanosis)	A
Sentinel node biopsy (melanoma)	A
Superficial spreading melanoma (low CSD melanoma)	A
Acral melanoma	A
Acral nevus	P
Nevi on the nail apparatus	P
Subungual melanoma	A
Congenital nevus	P
Melanoma arising in giant congenital nevus	A
Proliferative nodule in congenital nevus	P
Atypical melanocytic nevi of genital type	A
Mucosal melanoma (genital, oral, sinonasal)	A
Other pigmented lesions & disorders of pigmentation – general	P
Conjunctival intraepithelial neoplasia	A
Conjunctival melanoma	A

Conjunctival nevi	P
Eyelid melanoma	A
Uveal melanoma	A

9. Endocrine: Pituitary Gland

Topic	Level
Normal pituitary anatomy, histology & embryology	P
Reticulin pattern in normal adenohypophysis	P
Hormone-producing cell types and correlating transcription factor differentiation pathways	P
Classification of pituitary neuroendocrine tumors (PitNETs)	P
Nomenclature: Pituitary adenoma vs PitNET	P
Common functional subtypes (GH, PRL, ACTH, TSH, FSH/LH)	P
Non-functioning (null cell, gonadotroph) tumors	P
Clinical features of pituitary hormone excess (acromegaly, Cushing disease, hyperprolactinemia, hyperthyroidism)	P
Pituitary apoplexy (histologic appearance, pathophysiology)	P
Gross features of pituitary lesions and fragmented specimens	P
Histologic architecture (solid, trabecular, rosettes, fibrovascular stroma)	P
Cytologic features of pituitary tumors ('small round blue cell' appearance)	P
Crooke hyaline change and significance	P
Oncocytic change and acidophil stem cell tumor	A
Immature Pit1 lineage tumors and their behavior	A
Reticulin stain for hyperplasia vs neoplasia	P
Distinction of hyperplasia from adenoma by architecture	P
Hormone immunostains (GH, PRL, ACTH, TSH, FSH, LH, α -subunit)	P
Transcription factor immunostains (Pit1, Tpit, SF1, ER, GATA3)	A
Neuroendocrine markers (synaptophysin, chromogranin, INSM1)	P
Cytokeratin patterns (CAM 5.2 perinuclear, ring-like, fibrous body)	A
Ki-67 labeling index and mitotic activity assessment	A
Aggressive and invasive pituitary tumors criteria	A
ATRX loss and molecular markers of aggressive behavior	A
GNAS and USP8 mutations in somatotroph and corticotroph tumors	A
MEN1, MEN4, AIP, Carney complex, SDHx syndromes	A
Differential diagnosis with non-pituitary lesions (metastasis, pituicytoma, ependymoma)	A
Negative markers for differentiation (GFAP, CK7, CK20, TTF1)	A
Frozen section policy and diagnostic limitations	P
Handling and fixation of pituitary specimens (formalin, frozen avoidance)	P
Correlation with endocrine laboratory results (PRL, GH, ACTH, TSH, IGF-1)	P
Tumor size criteria (microadenoma vs macroadenoma)	P
Assessment of invasion (cavernous sinus, bone, dura)	A
Evaluation of proliferation and Ki-67 index thresholds	A
Histologic predictors of response to somatostatin analogues	A
Sample pathology report and synoptic format	A

Diagnostic pitfalls and mimics of PitNETs	A
Quality and safety in pituitary specimen processing	P
Communication with clinical team regarding hormone correlation	P
Reporting terminology and standardized nomenclature	P
Documentation of aggressive behavior and follow-up recommendations	A

9. Endocrine: Pancreas

Lesion	Level
Anatomy, histology and embryology	P
Cytology	P
Acute pancreatitis	P
Autoimmune pancreatitis type 1 & 2	A
Chronic pancreatitis	P
PRSS1 hereditary pancreatitis	A
Diabetes mellitus	P
Allograft rejection	A
Cystic fibrosis	P
Heterotopic pancreas	P
Nesidioblastosis	A
Intraductal oncocytic papillary neoplasm (IOPN)	A
Intraductal papillary mucinous neoplasm (IPMN)	A
Intraductal tubulopapillary neoplasm (ITPN)	A
Lymphoepithelial cyst	P
Mucinous cystic neoplasm (MCN)	A
PanIN (Pancreatic intraepithelial neoplasia)	A
Pseudocyst	P
Serous cystadenoma	P
Simple mucinous cyst	P
True cyst	P
Ductal adenocarcinoma, NOS	A
Medullary carcinoma	A
Undifferentiated carcinoma	A
Undifferentiated carcinoma with osteoclast-like giant cells	A
Acinar cell carcinoma	A
Neuroendocrine tumors (PanNET), functional and nonfunctional and the grading system	P
Poorly differentiated neuroendocrine carcinoma	A
Mixed neuroendocrine non-neuroendocrine neoplasm (MiNEN)	A
ACTH secreting tumor	A
Gastrinoma	A
Glucagonoma	A
Insulinoma	P
Somatostatinoma	A
VIPoma	A
MEN1 syndrome	A
Pancreatoblastoma	A

Solid pseudopapillary neoplasm (SPN)	A
Sclerosing epithelioid mesenchymal neoplasm	A
Familial pancreatic neoplasms	A
Risk stratification of IPMN	A
Molecular genetics of pancreatic neoplasms	A

9. Endocrine: Thyroid & Parathyroid Glands

Lesion	Level
Acute / infectious thyroiditis	P
Adequacy (Cytology)	P
AJCC / TNM Staging	A
Amiodarone induced hyperthyroidism	P
Amyloid goiter	A
Anaplastic thyroid carcinoma	A
Anatomy, histology and embryology (thyroid gland)	P
Anatomy, histology and embryology (parathyroid glands))	P
Angiosarcoma	A
Aplasia / hypoplasia	P
Autoimmune thyroiditis	P
Benign thyroid neoplasms	P
Black / pigmented thyroid	A
Branchial pouch / cleft anomalies	P
C cell hyperplasia	A
Children (thyroid cancer)	A
PTC Clear cell variant	A
PTC Columnar cell variant	A
Congenital hypothyroidism	P
Cribiform-morular thyroid carcinoma	A
Differentiated high grade thyroid carcinoma (HGDTTC)	A
PTC Diffuse follicular variant	A
PTC Diffuse sclerosing variant	A
DiGeorge syndrome	P
Dyshormonogenetic goiter	A
Ectopic parathyroid / thyroid tissue	P
PTC Encapsulated follicular variant	P
Follicular adenoma	P
Follicular carcinoma	A
Follicular neoplasm (Oncocytic variant)	A
Graves disease	P
Hashimoto thyroiditis	P
Hashimoto-fibrous variant	A
Hyalinizing trabecular tumor	A
Hyperparathyroidism	P
Hyperthyroidism	P
Hypothyroidism	P

Intrathyroidal thymic carcinoma	A
Invasive EFVPTC	A
Langerhans cell histiocytosis	A
Lateral aberrant thyroid	P
Lymphoepithelial cyst	P
Thyroid Lymphoma	A
Malakoplakia	P
Medullary thyroid carcinoma	A
Mixed medullary-follicular tumors	A
Mucoepidermoid carcinoma	A
Non-invasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP)	P
Oncocytic (Hürthle cell) tumors	A
Palpation thyroiditis	P
Papillary carcinoma- Classic type	P
Papillary carcinoma- Special type	A
Parathyroid adenoma	P
Parathyroid carcinoma	A
Parathyroid gland hyperplasia	P
Plasma cell granuloma	A
Plasmacytoma	A
Poorly differentiated thyroid carcinoma	A
Postoperative spindle cell nodule	A
Radiation thyroiditis	A
Riedel thyroiditis	A
Rosai-Dorfman disease	A
Sarcoidosis	A
Sarcoma	A
Sclerosing mucoepidermoid carcinoma with eosinophilia	A
Secretory carcinoma	A
Spindle epithelial tumor with thymus-like elements (SETTLE)	A
PTC Solid / trabecular variant	A
Solitary fibrous tumor	A
Solitary thyroid nodule	P
Squamous cell carcinoma	A
Subacute thyroiditis	P
Teratoma	A
Thyroblastoma	A
Thyroglossal duct carcinoma	P
Thyroglossal duct cyst	P
Thyroid metastases	A
PTC Warthin-like variant	A
Well differentiated tumor-uncertain malignant potential (WDT-UMP)	A
	A

9. Endocrine: Adrenal Gland & Paraganglia

Lesion / Topic	Level
Adenomatoid tumor	A
Adrenal cortical adenoma	P
Adrenal cortical carcinoma	A
Adrenal hyperplasia	P
Adrenal rests	P
Anatomy, histology & embryology – adrenal cortex, medulla & paraganglia	P
Beckwith-Wiedemann syndrome	A
Composite pheochromocytoma and paraganglioma	A
Adrenal Cysts	P
Focal adrenalitis	P
Ganglioneuroblastoma (intermixed and nodular)	A
Ganglioneuroma	A
Hyperplasia – medulla	P
Hyperplasia – paraganglia	A
Metastases	A
Myelolipoma	P
Myxoid adrenal cortical carcinoma	A
Neuroblastoma and its histologic types and grading	A
Oncocytic adrenal cortical carcinoma	A
Paraganglioma	A
Pheochromocytoma	A
Sarcomatoid adrenal cortical carcinoma	A
Staging – adrenal cortical carcinoma	A
Staging – neuroblastic tumors	A
Staging – pheochromocytoma & paraganglioma	A
Waterhouse-Friderichsen syndrome	A
WHO classification	A
Adrenal Stains	A
Grading systems for adrenal cortical tumors	A
Grading systems for pheochromocytoma and paragangliomas	A

10. GI System: Esophagus

Lesion / Topic	Level
Anatomy, embryology & histology	P
Grossing & features to report	P
Atresia and tracheoesophageal fistula	P
Esophageal cysts and duplications	P
Heterotopic / ectopic sebaceous glands	P
Heterotopic gastric mucosa	P
Pancreatic acinar metaplasia	A
Esophagitis – overview	P
Candida esophagitis	P
Chemical (corrosive) esophagitis	P
CMV esophagitis	P
Crohn’s disease	P
Eosinophilic esophagitis	P
Graft versus host disease	A
HSV esophagitis	P
Lichenoid esophagitis	A
Lymphocytic esophagitis	P
Pill induced esophagitis	P
Radiation esophagitis	A
Reflux esophagitis / GERD	P
Diverticula	P
Epidermoid metaplasia	A
Esophageal manifestations of collagen vascular disease	A
Esophageal manifestations of dermatologic disease	A
Esophagitis dissecans superficialis / sloughing esophagitis	P
Glycogenic acanthosis	P
Melanocytosis	A
Varices	P
Granular cell tumor	P
Leiomyoma	P
Squamous papilloma	P
Barrett esophagus	P
Barrett related dysplasia	P
Squamous dysplasia	P
Adenocarcinoma of the esophagus and GE junction	P
Adenosquamous carcinoma	A
Basaloid squamous cell carcinoma	A
Mucoepidermoid carcinoma	A
Neuroendocrine carcinoma	A
Sarcomatoid carcinoma	A
Squamous cell carcinoma	P
Undifferentiated carcinoma	A
Verrucous squamous cell carcinoma	P

Well differentiated neuroendocrine tumor	P
Esophageal sarcoma	A
Gastrointestinal stromal tumor (GIST)	P
Giant fibrovascular polyp / well differentiated liposarcoma	A
Lymphoma	A
Melanoma	A

10. GI System: Stomach

Lesion	Level
Anatomy & histology	P
Features to report & grossing	P
Gastritis – features to report	P
Acute gastritis	P
Atrophic gastritis (environmental and autoimmune)	A
Autoimmune gastritis	A
Chronic gastritis	P
Collagenous gastritis	A
Eosinophilic gastroenterocolitis	A
Erosive gastritis	P
Granulomatous gastritis	A
Graft versus host disease	A
Lymphocytic gastritis	P
CMV gastritis	A
Helicobacter heilmannii gastritis	P
Helicobacter pylori gastritis	P
Acute gastric ulcer	P
Peptic ulcer disease	P
Menetrier disease	A
Zollinger-Ellison syndrome	A
Amyloid (gastric)	A
Arteriovenous malformation	A
Bezoars	P
Doxycycline gastritis	P
Gastric antral vascular ectasia (GAVE)	A
Heterotopic pancreas / pancreatic acinar metaplasia	P
Iron pill gastritis / pill gastritis	P
Lanthanum carbonate deposition	A
Mucosal calcinosis	A
Portal hypertensive gastropathy	A
Proton pump inhibitors (associated changes)	P
Pyloric stenosis	P
Reactive (chemical) gastropathy	P
Xanthoma	P
Adenomas	A

Cowden syndrome polyps	A
Cronkhite-Canada syndrome	A
Fundic gland polyp	P
Gastritis cystica polyposa	P
Hyperplastic polyp	P
Inflammatory fibroid polyp	P
Juvenile polyp	P
Oxyntic gland adenoma	A
Peutz-Jeghers syndrome	A
Pyloric gland adenoma	A
Dysplasia	A
Intestinal metaplasia	A
Carcinoma – general	A
Diffuse type adenocarcinoma	A
Gastric adenosquamous carcinoma	A
Gastric carcinoma with lymphoid stroma	A
Gastric squamous cell carcinoma	A
Gastric undifferentiated carcinoma	A
Hepatoid adenocarcinoma	A
Hereditary diffuse gastric cancer	A
Intestinal type adenocarcinoma	A
Molecular pathology of carcinoma	A
Neuroendocrine tumor classification	A
Mixed neuroendocrine–nonneuroendocrine tumor	A
Poorly differentiated neuroendocrine carcinoma	A
Well differentiated neuroendocrine tumor	A
Diffuse large B cell lymphoma	A
Extranodal marginal zone lymphoma (MALT)	A
Gastroblastoma	A
GIST	A
Glomus tumor	P
Leiomyoma	P
Leiomyosarcoma	A
Plexiform fibromyxoma	A
Schwannoma	P

10. GI System: Gallbladder & Extrahep bile ducts

Lesion / Topic	Level
Anatomy, histology & embryology	P
Grossing, frozen section & features to report	P
Staging – gallbladder and cystic duct carcinoma	A
Staging – perihilar and distal bile duct carcinomas	A
WHO classification	P
Acute cholecystitis	P

Chronic cholecystitis	P
Emphysematous cholecystitis	P
Follicular cholecystitis	P
Gangrenous cholecystitis	P
Granulomatous cholecystitis	A
Hyalinizing / porcelain gallbladder	A
Xanthogranulomatous cholecystitis	P
Adenomyomatous hyperplasia	P
Angiodysplasia	P
Cholelithiasis	P
Cholesterol polyp	P
Cholesterolosis	P
Cystoisospora-like inclusions	A
Hydrops / mucocele	P
Inflammatory polyp	P
Metaplasia	P
Papillary hyperplasia	P
Intracholecystic papillary neoplasm	A
Intracholecystic tubular nonmucinous neoplasm (ICTN)	A
Pyloric gland adenoma	P
Dysplasia	P
Gallbladder carcinoma	P
Neuroendocrine tumor	A
Biliary intraepithelial neoplasia	A
Carcinoma of extrahepatic bile ducts	A
Choledochal cyst	P
Intraductal papillary neoplasm of biliary tract	A
Traumatic neuroma	P

10. GI System: Small Intestine and Ampulla Lesion

	Level
Anatomy & embryology	P
Grossing & features to report	P
Histology – ampulla	P
Histology – small intestine	P
Staging – ampulla carcinoma	A
Staging – duodenal & ampullary neuroendocrine tumors	A
Staging – jejunal & ileal neuroendocrine tumors	A
Staging – small intestine carcinoma	A
WHO classification	A
Atresia / stenosis	P
Common variable immunodeficiency syndrome	A
Diverticula (other than Meckel)	P

Duplication / enterogenous cysts	P
Heterotopic gastric mucosa	P
Heterotopic pancreas	P
Meckel diverticulum	P
Meconium peritonitis	P
Malabsorption – general	P
Celiac sprue	A
Autoimmune enteropathy	A
Behçet disease	A
Crohn's disease	A
Diaphragm disease	A
Duodenal peptic ulcer	P
Eosinophilic gastroenterocolitis	A
Ileal pouch / pouchitis	A
Lymphocytic enterocolitis	A
Necrotizing enterocolitis	A
Olmesartan enteropathy	A
Peptic duodenitis	P
Radiation enterocolitis	A
Ulcerative colitis (secondary small bowel involvement)	A
Infectious disorders – general	P
Giardia lamblia	P
Whipple disease	A
Brunner gland lesions	P
Enteritis cystica profunda	P
Hyperplastic polyp	P
Inflammatory fibroid polyp	P
Inflammatory myofibroblastic tumor	A
Inflammatory polyp	P
Intussusception	P
Ischemia	P
Juvenile polyposis	P
Leiomyoma	P
Lipoma	P
Lipomatosis of ileocecal valve	P
Lymphangiectasia	P
Lymphangioma	P
Lymphoid hyperplasia	P
Nonampullary adenoma	A
Peutz-Jeghers polyp	A
Pneumatosis cystoides intestinalis	A
Pseudomelanosis duodeni	P
Reactive nodular fibrous pseudotumor	A
Retroperitoneal fibrosis / sclerosing mesenteritis	A

Adenocarcinoma – small intestine	A
Neuroendocrine carcinoma	A
Immunoproliferative small intestinal disease (ISID)	A
Lymphoma	A
Gastrointestinal Stromal Tumor (GIST)	A
Malignant gastrointestinal neuroectodermal tumor	A
Neuroendocrine tumor (carcinoid)	A
Rejection (post-transplant)	A
Adenocarcinoma – ampulla	A
Adenoma	P
Adenomyoma	P
Composite gangliocytoma / neuroma and neuroendocrine tumor	A
Intra-ampullary papillary tubular neoplasm (IAPN)	A

10. GI System: Colon Lesion / Topic

	Level
Aberrant crypt foci	P
Actinomycosis	P
Adenocarcinoma and its subtypes	P
Adenoma overview	P
Adenoma with invasive carcinoma	P
Adenoma-like adenocarcinoma	A
Adenosquamous carcinoma	A
Adenovirus colitis	P
Adhesions	P
Amebic colitis	P
Amyloidosis	P
Anatomy & histology	P
Angiosarcoma	A
Anti-PD-L1 associated colitis	A
APC gene	A
Atresia	P
Balantidiasis	P
Basidiobolomycosis	A
Behcet's syndrome	P
Brown bowel syndrome	A
Campylobacter jejuni	P
Carcinoma overview	P
Chagas disease	P
Chemotherapy induced colitis	P
Chronic granulomatous disease	A
Chronic intestinal pseudo-obstruction	A
Colitis cystica profunda	P
Collagenous colitis	P

Common variable immunodeficiency (CVID)	P
Congenital absence of muscularis propria	A
COVID-19 associated colitis	P
Cowden syndrome	P
Crohn's disease	P
Cronkhite–Canada syndrome	A
Cryptosporidium parvum	P
Cytomegalovirus (CMV)	P
Diverticulosis	P
Drug induced colitis (overview)	P
Duplication	P
Dysplasia (IBD related)	P
Ehlers–Danlos syndrome	A
Endometriosis	P
Eosinophilic gastroenterocolitis	P
Familial adenomatous polyposis (attenuated/classic)	A
Focal active colitis	P
Foreign materials / food	P
Ganglioneuroma	P
Ganglioneuromatosis	A
Gardner syndrome	A
Gastric heterotopia	P
Gastrointestinal stromal tumor (GIST)	P
Graft versus host disease	A
Grossing & features to report	P
Hepatoid carcinoma	A
Hereditary mixed polyposis syndrome	A
Hirschsprung disease	P
HIV/AIDS associated colitis	P
Hyperplastic polyp	P
IBD associated carcinoma	A
Idelalisib associated colitis	A
Idiopathic retroperitoneal fibrosis	A
Infarct/Gangrene	P
Infarcted epiploic appendages	P
Inflammatory bowel disease (indeterminate type)	A
Inflammatory cap polyp	P
Inflammatory fibroid polyp	P
Inflammatory myofibroblastic tumor	A
Inflammatory polyp	P
Intestinal neuronal dysplasia	A
Intestinal spirochetosis	P
Intramucosal carcinoma	A
Ipilimumab associated colitis	A

Ischemic colitis	P
Juvenile (retention) polyp	P
Juvenile polyposis syndrome	A
Kaposi sarcoma	A
Leiomyoma	P
Leiomyosarcoma	A
Lifting agent granuloma	P
Lipoma	P
Low grade tubuloglandular adenocarcinoma	A
Lymphocytic colitis	P
Lymphoglandular complex-like carcinoma	A
Lymphoid polyp	P
Lynch syndrome	A
Malakoplakia	A
Mantle cell lymphoma	A
Mast cell disorders	P
Mastocytosis	A
Medullary carcinoma	A
Melanosis coli	P
Metastases	A
Micropapillary carcinoma	A
Microsatellite instability pathway	A
Mixed neuroendocrine nonneuroendocrine neoplasm	A
Mucinous adenocarcinoma	A
Mucosal prolapse polyp	P
Mucosal Schwann cell hamartoma	P
Muir–Torre syndrome	A
MUTYH associated polyposis	A
Mycobacterium avium intracellulare	P
Mycophenolate mofetil associated colitis	A
Necrotizing enterocolitis	P
NSAID associated colitis	P
Perineurioma	P
Peutz–Jeghers syndrome	A
Pill fragment associated colitis	P
Pneumatosis cystoides intestinalis	A
Poorly differentiated neuroendocrine carcinoma	A
Portal hypertensive colopathy	A
Posttreatment changes	P
Pseudomembranous colitis	P
Radiation enterocolitis	A
Reactive nodular fibrous pseudotumor	A
Salmonella (typhoid/nontyphoidal)	P
Schistosomiasis	P

Schwannoma	P
Scleroderma	A
Sclerosing mesenteritis	A
Segmental colitis associated with diverticula (SCAD)	P
Serrated adenocarcinoma (SAC)	A
Serrated lesions (general)	P
Serrated polyposis	A
Sessile serrated adenoma	P
Sexually transmitted infectious colitis / proctitis	P
Infective colitis including Tuberculosis	P
Signet ring cell carcinoma	A
Solitary rectal ulcer syndrome	P
Squamous cell carcinoma	A
Staging – carcinoma	P
Staging – neuroendocrine	A
Traditional serrated adenoma	P
Tubular adenoma	P
Tubulovillous / villous adenoma	P
Turcot syndrome	A
Typhlitis	P
Ulcerative colitis	P
Vascular ectasia	P
Vasculitis	A
Volvulus	P
Well differentiated neuroendocrine tumor	P
Xanthoma	P

10. GI System: Appendix

Lesion / Topic	Level
Anatomy	P
Features to report & grossing	P
Staging – carcinoma / mucinous neoplasms	A
Staging – neuroendocrine tumors	A
WHO classification	P
Cystic fibrosis	P
Acute appendicitis	P
Adenovirus & measles	P
CMV appendicitis	P
Enterobius vermicularis	P
Granulomatous appendicitis	A
Interval appendicitis	P
Periappendicitis	P
Xanthogranulomatous inflammation	A
Diverticulosis	P

Inverted appendix	P
Lymphoid hyperplasia	P
Mucocele	P
Myxoglobulosis	A
Fibrous obliteration	P
Hyperplastic polyp	P
Serrated polyp	P
Tubular adenoma	P
Adenocarcinoma	P
Goblet cell adenocarcinoma	A
Mucinous neoplasms – general	P
Low grade and high grade appendiceal mucinous neoplasm (LAMN & HAMN)	A
Pseudomyxoma peritonei / mucinous carcinoma peritonei	A
Gastrointestinal stromal tumor (GIST)	P
Neuroendocrine tumor	P

10. GI System: Anus & Perianal

Lesion / Topic	Level
Anatomy & histology	P
Grossing & features to report	P
Staging	A
WHO classification of hepatic neoplasms	P
Anogenital hypertrophic herpes	A
Cytomegalovirus	P
Granuloma inguinale	P
Lymphogranuloma venereum	P
Syphilis	P
Crohn's disease	P
Fissure	P
Fistula	P
Hemorrhoids	P
Hypertrophied papillae	P
Inflammatory cloacogenic polyp	P
Tailgut cyst	A
Buschke-Löwenstein tumor	A
Condyloma acuminatum	P
Squamous dysplasia	A
Carcinoma overview	P
Adenocarcinoma	P
Apocrine carcinoma	A
Basal cell carcinoma	P
Mixed neuroendocrine nonneuroendocrine neoplasms	A
Paget disease	A
Neuroendocrine carcinoma	A

Neuroendocrine tumor	A
Squamous cell carcinoma	P
Verrucous carcinoma	P
Granular cell tumor	P
Hidradenoma papilliferum	P
Intradermal nevus	P
Melanoma	A

11. Liver & Intrahepatic Bile Ducts Lesion

Lesion	Level
Anatomy & histology – liver & biliary tree	P
Biopsy & features to report	P
WHO classification	A
Congenital hepatic fibrosis	A
Biliary atresia	P
Caroli disease / syndrome	A
Choledochal cyst	P
Ductal plate malformation	A
Polycystic liver disease	P
Hemochromatosis	A
Wilson disease	A
Alpha-1 antitrypsin deficiency	A
Nonalcoholic fatty liver disease (NAFLD)	P
Nonalcoholic steatohepatitis (NASH)	P
Alcoholic liver disease	P
Viral hepatitis (A, B, C, D, E)	P
Autoimmune hepatitis	A
Primary biliary cholangitis	A
Primary sclerosing cholangitis	A
Drug-induced liver injury (DILI)	A
Budd-Chiari syndrome	A
Sinusoidal obstruction syndrome	A
Ischemic hepatitis	A
Congestive hepatopathy	P
Granulomatous hepatitis	A
Hepatic abscess	P
Hydatid cyst	P
Tuberculosis (hepatic)	A
Syphilitic hepatitis	A
Fungal hepatitis	A
Parasitic infections (amebiasis, schistosomiasis)	P
Amyloidosis – liver	A
Sarcoidosis	P
Neonatal hepatitis	P

Reye syndrome	A
Massive hepatic necrosis / acute liver failure	A
Cirrhosis (micronodular / macronodular)	P
Regenerative nodules	P
Focal nodular hyperplasia (FNH)	P
Hepatocellular adenoma (HCA)	A
HCA subtypes (HNF1A-inactivated, inflammatory, β -catenin activated, etc.)	A
Hepatocellular carcinoma (HCC)	P
Fibrolamellar carcinoma	A
Combined hepatocellular-cholangiocarcinoma	A
Cholangiocarcinoma (intrahepatic)	A
Biliary intraepithelial neoplasia (BilIN)	A
Large duct type cholangiocarcinoma	A
Small duct type cholangiocarcinoma	A
Cystic biliary tumors (biliary cystadenoma / cystadenocarcinoma)	A
Hepatoblastoma	A
Undifferentiated embryonal sarcoma of liver	A
Angiosarcoma of liver	A
Epithelioid hemangioendothelioma	A
Mesenchymal hamartoma	P
Metastatic carcinoma to liver	P
Benign vascular lesions (hemangioma, peliosis)	P
Lymphoma involving liver	A
Secondary amyloidosis	A
Iron overload due to transfusion	P
Wilson-like changes due to copper	A
Steatosis – general	P
Steatohepatitis – general	P
Hepatic small vessel neoplasms	A
Tumor staging – liver	P
Features to report (CAP protocol)	P

12. Urinary System: Urinary Bladder, Ureter & Urethra

	Level
Anatomy and histology of the urinary system	P
Features to report, grossing & frozen section	P
Grading	P
Histology	P
Staging	P
WHO classification	P
Arteriovenous malformation	A
Duplication anomaly	A
Exstrophy	A
Persistent cloaca	A

Prune belly syndrome	A
Urachal remnants / cyst	P
Urethral congenital anomalies	P
Acute cystitis	P
Chronic cystitis	P
Follicular cystitis	P
Granulomatous cystitis	P
Eosinophilic cystitis	A
Bullous cystitis	P
Hemorrhagic cystitis	P
Radiation cystitis	A
Schistosomal cystitis	A
Interstitial cystitis (Hunner type)	A
Cystitis cystica	P
Cystitis glandularis	P
Emphysematous cystitis	A
Encrusted cystitis	A
Xanthogranulomatous cystitis	A
Amyloidosis	A
Malakoplakia	P
Fibroepithelial polyp	P
Intestinal metaplasia	P
Nephrogenic metaplasia / adenoma	P
Postoperative spindle cell nodule	A
Prostatic-type polyp	P
Squamous metaplasia	P
Treatment effect	A
Urothelial papilloma	P
Papillary urothelial neoplasm of low malignant potential (PUNLMP)	P
Noninvasive papillary urothelial carcinoma, low grade	P
Noninvasive papillary urothelial carcinoma, high grade	P
Carcinoma in situ (CIS)	P
Urothelial dysplasia	P
Flat hyperplasia	P
Flat atypia of unknown significance	A
Inverted urothelial papilloma	P
Nested variant of urothelial carcinoma	A
Microcystic variant	A
Micropapillary variant	A
Plasmacytoid variant	A
Sarcomatoid variant	A
Lymphoepithelioma-like variant	A
Lipid-rich variant	A
Poorly differentiated urothelial carcinoma	A

Osteoclast-rich variant	A
With squamous differentiation	P
With glandular differentiation	P
With trophoblastic differentiation	A
Condyloma acuminatum	P
Squamous papilloma	P
Verrucous carcinoma	A
Squamous cell carcinoma	P
Adenocarcinoma, P bladder type	P
Adenocarcinoma in situ	A
Urachal adenocarcinoma	A
Clear cell adenocarcinoma	A
Villous adenoma	P
Small cell neuroendocrine carcinoma	A
Large cell neuroendocrine carcinoma	A
Well-differentiated neuroendocrine tumor (carcinoid)	A
Paraganglioma	P
Angiosarcoma	A
Inflammatory myofibroblastic tumor	P
Rhabdomyosarcoma	A
Metastatic tumors to bladder	P

12. Urinary System: Kidney Tumor

Lesion	Level
Anatomy & histology – renal cortex / medulla	P
Biopsy interpretation & grossing	P
WHO Classification (2022)	A
Adenoma – papillary / metanephric / oncocytic	P
Angiomyolipoma (classic and epithelioid types)	P
Angiomyolipoma with TFE3 rearrangement	A
Cystic nephroma / mixed epithelial & stromal tumor	P
Clear cell renal cell carcinoma (ccRCC)	P
Clear cell papillary renal cell tumor	P
Chromophobe renal cell carcinoma	P
Hybrid oncocytic chromophobe tumor	P
Papillary renal cell carcinoma (Type 1 / Type 2)	P
Hereditary papillary renal cell carcinoma (MET mutation)	A
Mucinous tubular & spindle cell carcinoma	P
SDH-deficient renal cell carcinoma	A
FH-deficient renal cell carcinoma (HLRCC)	A
MiT family translocation RCC (TFE3 / TFEB)	A
ELOC-mutated RCC (ELONGIN C complex)	A
ALK-rearranged renal cell carcinoma	A
SMARCB1-deficient renal cell carcinoma	A

Tubulocystic renal cell carcinoma	A
Acquired cystic disease-associated RCC	A
Collecting duct carcinoma	A
Medullary carcinoma	A
Unclassified RCC	A
Oncocytoma	P
Metanephric adenoma / adenofibroma / stromal tumor	P
Pediatric renal tumors (Wilms, CMN, RTK, CCSK, etc.)	A
Cystic partially differentiated nephroblastoma	A
Clear cell sarcoma of the kidney	A
Malignant rhabdoid tumor of the kidney	A
Renal sarcoma (leiomyosarcoma / angiosarcoma)	A
P renal synovial sarcoma	A
Mixed epithelial / stromal tumors	P
MEST / Adult cystic nephroma	P
Secondary tumors / Metastases to kidney	P
Lymphoma involving kidney	P
Plasmacytoma / myeloma in kidney	A
Renal neuroendocrine tumors / paraganglioma	A
Sarcomatoid transformation (any type of RCC)	A
Tumor staging (TNM 2022 AJCC 8th ed.)	P
Features to report / CAP protocol elements	P

12. Urinary System: Kidney Non-Tumor (Excluding Medical Kidney Disease) Lesion

	Level
Anatomy & histology – renal cortex / medulla / paraganglia	P
Congenital anomalies – general	P
Benign renal cysts	P
Acquired cystic kidney disease	A
Autosomal dominant polycystic kidney disease	A
Autosomal recessive polycystic kidney disease	P
Dysplasia / hypoplasia / agenesis	P
Medullary sponge kidney	P
Nephronophthisis	A
Arterionephrosclerosis	P
Diffuse cortical necrosis	A
Renal Infarct	P
Palillary Necrosis	P
Urate nephropathy	P
Obstructive uropathy	P
Tamm-Horsfall protein abnormalities	P
Chronic pyelonephritis	P
Malakoplakia	P
Renal tuberculosis	P

Xanthogranulomatous pyelonephritis	P
Urolithiasis (stones)	P

13. Medical Kidney Disease

Lesion	Level
Anatomy & histology – renal cortex / medulla / paraganglia	P
Minimal change glomerulopathy	P
Focal segmental glomerulosclerosis (FSGS)	A
Collapsing FSGS variant	A
Genetic FSGS (hereditary forms)	A
Membranous nephropathy	A
MPGN pattern of injury / C3 glomerulonephritis / dense deposit disease	A
Acute postinfectious glomerulonephritis	P
Bacterial infection–related GN	P
Henoch–Schönlein purpura / IgA vasculitis	P
IgA nephropathy	P
Systemic lupus erythematosus glomerulonephritis	A
Anti-GBM nephritis	A
Renal amyloidosis	A
Fibrillary glomerulonephritis	A
Diabetic kidney disease	P
Obesity-related glomerulopathy	P
Alport syndrome / thin basement membrane lesion	P
Congenital nephrotic syndrome	A
Diffuse mesangial sclerosis	A
Fabry disease	A
Collagen type III glomerulopathy	A
Fibronectin glomerulopathy	A
Crescentic glomerulonephritis (overview)	A
Cryoglobulinemia	A
Idiopathic nodular glomerulosclerosis	A
Eosinophilic granulomatosis with polyangiitis (EGPA)	A
Granulomatosis with polyangiitis (Wegener)	A
Pauci-immune crescentic GN / ANCA vasculitis	A
Hemolytic uremic syndrome / TTP	A
Scleroderma renal crisis	A
Malignant hypertension / accelerated nephrosclerosis	P
Acute tubular necrosis	P
Analgesic nephropathy	P
Bile cast nephropathy	A
Calcineurin inhibitor toxicity	A
Checkpoint inhibitor–associated tubulointerstitial nephritis	A
Indinavir nephropathy	A
Rhabdomyolysis-related renal injury	A

Anti-brush border antibody disease / anti-LRP2 nephropathy	A
IgG4-related tubulointerstitial disease	A
Sarcoidosis (kidney)	P
Sjögren syndrome (renal manifestations)	A
Nephrocalcinosis	P
Oxalosis	A
Urate nephropathy	P
Tubulointerstitial nephritis – general	P
Adenovirus infection (kidney)	A
BK virus / polyomavirus nephropathy	A
COVID-19–associated kidney injury	A
HIV-associated renal disease	A
Monoclonal gammopathy of renal significance (MGRS)	A
Crystal storing histiocytosis	A
Heavy chain deposition disease	A
Immunotactoid glomerulopathy	A
Light chain cast nephropathy	A
Light chain deposition disease	A
Light chain proximal tubulopathy	A
Hyperacute rejection	A
Acute / chronic active T cell mediated rejection	A
Active / chronic active antibody mediated rejection	A
Recurrent and de novo renal allograft diseases	A
Donor evaluation / Banff classification	A
Hematopoietic Stem Cell Transplantation (HSCT) -associated thrombotic microangiopathy	A
Chronic kidney disease of unknown etiology (CKDu)	P

14. Female Genital Tract: Vulva & Vagina

Lesion	Level
Adenosis	P
Fibroepithelial (stromal) polyp	P
Infection	P
Lichen planus	P
Lichen simplex chronicus	P
Lichen sclerosus	P
Mammary/mammary-like tissue and associated lesions	P
Spongiotic dermatitis	P
Vulvovaginal cysts	P
Condyloma	P
HPV associated squamous intraepithelial lesion (SIL)	P
HPV associated squamous cell carcinoma (vulva)	A
HPV independent squamous cell carcinoma (vulva)	A
HPV independent vulvar intraepithelial neoplasia (VIN)	A
Squamous cell carcinoma (vagina)	A

Vaginal intraepithelial neoplasia (VAIN)	P
Bartholin gland carcinoma (vulva)	A
Basal cell carcinoma (vulva)	A
Clear cell carcinoma (vagina)	A
Endometrioid carcinoma (vagina)	A
Merkel cell carcinoma	A
Mesonephric adenocarcinoma	A
Paget disease	A
Aggressive angiomyxoma (vulva)	A
Alveolar soft part sarcoma	A
Angiomyofibroblastoma	A
Cellular angiofibroma	P
Epithelioid sarcoma (vulva)	A
Liposarcoma-like tumor of vulva	A
Rhabdomyosarcoma	A
Smooth muscle tumors	P
Atypical melanocytic nevi of genital type (vulva)	P
Dysplastic melanocytic nevus	P
Melanoma	A
Pigmented lesions (vulva)	P
Emerging or novel neoplastic entities	A
Mixed tumor of vagina	A

14. Female Genital Tract: Cervix Lesion / Topic

	Level
Anatomy and histology – cervix	P
Transformation zone and squamocolumnar junction	P
Normal squamous and glandular epithelium	P
Reactive and reparative changes	P
Chronic cervicitis	P
Follicular cervicitis	P
Tuberculosis of cervix	A
Fungal and viral infections (Candida, HSV, HPV)	P
Nabothian cyst	P
Endocervical polyp	P
Tunnel cluster	P
Mesonephric (Wolffian) remnants and hyperplasia	A
Microglandular hyperplasia	P
Arias-Stella reaction	A
Squamous metaplasia	P
Immature squamous metaplasia	P
Endometriosis involving cervix	A
Cervical intraepithelial neoplasia (CIN I–III / HSIL, LSIL)	P
Squamous cell carcinoma (keratinizing, non-keratinizing, basaloid, verrucous)	P

Adenocarcinoma, usual type (HPV-associated)	A
Adenocarcinoma, gastric type (HPV-independent)	A
Minimal deviation adenocarcinoma (adenoma malignum)	A
Clear cell adenocarcinoma	A
Serous adenocarcinoma	A
Endometrioid adenocarcinoma	A
Mesonephric adenocarcinoma	A
Adenosquamous carcinoma	A
Glassy cell carcinoma	A
Small cell neuroendocrine carcinoma	A
Large cell neuroendocrine carcinoma	A
Carcinoid tumor	A
Sarcomas (leiomyosarcoma, rhabdomyosarcoma)	A
Mixed Müllerian tumor (carcinosarcoma)	A
Malignant melanoma	A
Lymphoma	A
Metastatic tumors	A
Pregnancy-related changes	P
Post-radiation changes	A
Grading and staging of cervical carcinoma (FIGO, AJCC)	A
HPV biology and p16 immunostaining	P
Biomarkers and molecular testing (HPV DNA, RNA ISH, p53, PD-L1)	A
Reporting protocol – WHO / CAP	A

14. Female Genital Tract: Uterus

Lesion	Level
Anatomy & histology	P
Endometrial biopsy reporting (benign/metaplasia)	P
Endometrial biopsy reporting (precursor/hyperplasia)	P
Endometrial biopsy reporting (malignant)	A
Grossing & features to report	P
Staging – carcinoma and carcinosarcoma	A
Staging – sarcoma	A
WHO classification	A
Abnormal uterine bleeding	P
Adenomyosis / adenomyoma	P
Arias-Stella reaction	P
Atrophy	P
Disordered proliferative endometrium	P
Endometrial metaplasia	P
Endometrial polyp	P
Endometritis	P
Exogenous hormones	P
Endometrial hyperplasia	P

Progestin therapy related changes	P
Endometrial carcinoma – general	A
Endometrioid carcinoma	A
Serous carcinoma	A
Clear cell carcinoma	A
POLE ultramutated endometrial carcinoma	A
Mesonephric-like adenocarcinoma	A
Mixed carcinoma of the uterine corpus	A
Gastric (GI) type carcinoma	A
Carcinosarcoma (Malignant Mixed Mullerian Tumors-MMMT)	A
Undifferentiated / dedifferentiated carcinoma	A
Leiomyoma – general	P
Intravenous and diffuse leiomyomatosis	A
Smooth muscle tumors of uncertain malignant potential (STUMP)	A
Leiomyosarcoma	A
Endometrial stromal nodule	P
Low grade endometrial stromal sarcoma	A
High grade endometrial stromal sarcoma	A
Alveolar soft part sarcoma	A
Inflammatory myofibroblastic tumor	A
PEComa (Perivascular epithelioid cell tumor)	A
SMARCA4-deficient uterine sarcoma	A
Undifferentiated uterine sarcoma	A
Uterine tumors resembling ovarian sex cord tumors (UTROSCT)	A
Atypical polypoid adenomyoma	P
Müllerian adenosarcoma	A
Adenomatoid tumor	P
Germ cell tumors of the uterine corpus	A
Central primitive neuroectodermal tumor / CNS embryonal tumor	A
Histology of specimens from gender-affirming surgery	P

14. Female Genital Tract: Fallopian tubes & Broad ligament Ectopic / tubal pregnancy

Metaplastic changes	A
Prolapse	P
Endosalpingiosis	P
Metaplastic papillary lesion	P
Mucinous metaplasia	A
Paratubal cysts	P
Placental site nodule	A
Salpingitis isthmica nodosa	A
Tubal hyperplasia	P
Tubo-ovarian abscess	P
Carcinosarcoma	A

Endometrioid adenocarcinoma	A
High grade serous carcinoma	A
Serous adenofibroma and papilloma	P
Serous borderline tumor	A
Serous tubal intraepithelial carcinoma (STIC)	A
Adenosarcoma	A
Teratoma	P
Adenomyoma	P
Leiomyoma	P
Leiomyosarcoma	A
Papillary cystadenoma of mesosalpinx	P
STK11 adnexal tumor	A
Wolffian tumor / Female adnexal tumor of probable Wolffian origin	A
Adrenocortical remnants	A
Developmental cysts	P
Mesonephric duct remnants	P
Walthard cell nests	P

14. Female Genital Tract: Ovary

Lesion	Level
Anatomy & histology	P
Features to report	P
Olaparib	A
Staging	A
WHO classification	A
Disorders of Sex Development (DSDs) – general	A
46XX DSD	A
Ovotesticular DSD	A
Sex chromosome DSD	A
Autoimmune oophoritis	A
Granulomatous inflammation	A
Tubo-ovarian abscess	P
Xanthogranulomatous oophoritis	A
Calcification	P
Ectopic decidual reaction	P
Endometriosis	P
Endosalpingiosis	A
Cortical inclusion cyst	P
Polycystic ovary disease	P
Torsion	P
Corpus luteum cyst	P
Fibromatosis & massive edema	P
Follicle cyst	P
Hyperreactio luteinalis	P

Large solitary luteinized follicular cyst (pregnancy/puerperium)	P
Leydig cell hyperplasia	P
Pregnancy luteoma	P
Stromal hyperplasia & hyperthecosis	P
Epithelial tumors – molecular overview	A
Serous cystadenoma, adenofibroma, surface papilloma	P
Serous borderline tumor	P
Low-grade serous carcinoma	A
High-grade serous carcinoma	A
Mucinous cystadenoma & adenofibroma	P
Mucinous borderline tumor	A
Mucinous carcinoma	A
Mural nodules in mucinous cystic neoplasms	A
Seromucinous cystadenoma & adenofibroma	P
Seromucinous borderline tumor	A
Endometrioid cystadenoma & adenofibroma	P
Endometrioid borderline tumor	A
Endometrioid carcinoma	A
Clear cell cystadenoma & adenofibroma	P
Clear cell borderline tumor	A
Clear cell carcinoma	A
Benign, borderline, malignant Brenner tumors	A
Mesonephric-like adenocarcinoma	A
Carcinosarcoma	A
Mixed carcinoma	A
Undifferentiated / dedifferentiated carcinoma	A
Endometrial stromal sarcoma	A
Leiomyoma	P
Leiomyosarcoma	A
Müllerian adenosarcoma	A
Fibroma	P
Fibrosarcoma	A
Leydig cell tumor	P
Luteinized thecoma with sclerosing peritonitis	A
Microcystic stromal tumor	A
Ovarian myxoma	A
Sclerosing stromal tumor	P
Signet ring stromal tumor	A
Steroid cell tumor	A
Thecoma	P
Granulosa cell tumor – adult type	P
Granulosa cell tumor – juvenile type	P
Sertoli cell tumor	P
Sex cord tumor with annular tubules	A

Gynandroblastoma	A
Sertoli-Leydig cell tumor	A
Sex cord-stromal tumor NOS	A
Choriocarcinoma	A
Dysgerminoma	P
Embryonal carcinoma	A
Mixed germ cell tumor	A
Somatic neoplasms arising from teratomas	A
Teratoma – mature	P
Teratoma – immature	A
Carcinoid tumor	A
Monodermal cystic teratoma	A
Neuroectodermal type tumors	A
Struma ovarii	A
Gonadoblastoma	P
Mixed germ cell–sex cord stromal tumor, unclassified	A
Metastases – general	A
Appendiceal neoplasms	A
Breast carcinoma	A
Carcinoid tumor metastatic to ovary	A
Cervical carcinoma metastatic to ovary	A
Colorectal adenocarcinoma	A
Upper gastrointestinal tract	A
Rete cystadenoma / adenoma / adenocarcinoma	A
Solid pseudopapillary tumor	A
Small cell carcinoma of ovary, hypercalcemic type	A
Wilms tumor (nephroblastoma)	A
Yolk sac tumor	A

14. Female Genital Tract: Placenta	
Lesion	Level
Anatomy & histology – placenta & umbilical cord	P
Grossing	P
Grossing – products of conception	P
Placental development & hormones	P
Accessory lobe / bilobate placenta	P
Small / large for gestational age	P
Amnionic web and amniotic band syndrome	A
Chorionic cysts	P
Circummarginate placenta	P
Circumvallate placenta	P
Furcate insertion	A
Knots (true, false)	P
Long cord	P

Marginal insertion	P
Nuchal cord	P
Prolapsed umbilical cord	P
Short cord	P
Thin cord	P
Torsion / hypercoiling	A
Velamentous insertion	A
Blighted ovum / anembryonic gestation	P
Ectopic pregnancy	P
Placenta accreta, increta, percreta	A
Placenta previa	P
Acute villitis and intervillitis	P
Acute chorioamnionitis	P
COVID-19 placentitis	A
Specific infectious organisms	A
Umbilical vasculitis and funisitis	P
Amnion nodosum	P
Chorangiomas	A
Chorangiosis	A
Chronic deciduitis	P
Chronic histiocytic intervillitis	A
Decidual arteriopathy	A
Distal villous hyperplasia / delayed villous maturation	A
Eosinophilic / T cell chorionic vasculitis	A
Erythroblastosis	A
Fetal thrombotic vasculopathy	A
Fetal vascular malperfusion	A
Hemorrhagic endovasculitis / vasculopathy	A
Infarct	P
Massive perivillous fibrin deposition / maternal floor infarction	A
Maternal vascular malperfusion	A
Meconium staining	P
Retroplacental hematoma / abruption	P
Villitis of unknown etiology	A
Early first trimester pregnancy loss	P
Fetus in fetu	A
Hydrops fetalis	A
Intrauterine fetal demise	P
Placental edema (hydrops)	P
Toxemia of pregnancy (preeclampsia, eclampsia)	A
Twins	P
Twin-twin transfusion	A
Hematoma (umbilical cord)	P
Single umbilical artery / supernumerary vessels	A

Embryonic remnants	P
Choriocarcinoma	A
Epithelioid trophoblastic tumor	A
Mixed trophoblastic tumor	A
Placental site trophoblastic tumor	A
Staging – gestational trophoblastic neoplasms	A
Exaggerated placental site	P
Placental site nodule	P
Complete hydatidiform mole	P
Partial hydatidiform mole	P
Invasive hydatidiform mole	A
Hydatidiform mole (unspecified)	P
Androgenetic / biparental mosaic / chimeric gestation	A
Mesenchymal dysplasia	A
Nonmolar aneuploidy	A
Chorangioma	P
Hepatocellular adenoma-like lesion of placenta	A

15. Male Genital Tract: Prostate gland & Seminal Vesicles Lesion

	Level
Anatomy & histology – prostate	P
Anatomy & histology – seminal vesicles	P
Grossing & features to report	P
Staging – prostate carcinoma	A
WHO classification	A
Congenital cysts	P
Corpora amylacea	P
Cystic atrophy	P
Fibromuscular stromal hyperplasia	P
Granulomatous prostatitis	P
Malakoplakia	A
Nonspecific (lymphocytic) prostatitis	P
Postatrophic hyperplasia	P
Prostatic infarct	P
Xanthogranulomatous prostatitis	A
Basal cell hyperplasia	P
Crowded glandular hyperplasia	P
Glandular and ductal metaplasia	P
Nephrogenic adenoma	A
Prostatic stromal hyperplasia	P
Stromal nodule (BPH nodule)	P
Atypical adenomatous hyperplasia (adenosis)	P
High grade prostatic intraepithelial neoplasia (HGPIN)	A
Low grade PIN	P

Acinar adenocarcinoma	A
Ductal adenocarcinoma	A
Intraductal carcinoma of the prostate (IDC-P)	A
Small cell carcinoma	A
Basal cell carcinoma	A
Squamous carcinoma	A
Mucinous (colloid) adenocarcinoma	A
Sarcomatoid carcinoma	A
Urothelial carcinoma involving the prostate	A
Stromal tumor of uncertain malignant potential (STUMP)	A
Prostatic stromal sarcoma	A
Leiomyoma / leiomyosarcoma	A
Rhabdomyosarcoma	A
Solitary fibrous tumor	A
Metastasis to prostate	A
Benign cyst (seminal vesicle)	P
Amyloidosis (seminal vesicle)	P
Adenocarcinoma of seminal vesicle	A
Secondary carcinoma invasion	A

15. Male Genital Tract: Testis & Paratestis

Lesion	Level
Anatomy & histology	P
Grossing and features to report	P
Staging	A
WHO classification	A
Adrenal cortical rests	P
Cryptorchidism	P
Disorders of sexual differentiation	A
Splenogonadal fusion	A
Testicular regression syndrome / Anorchia	A
Atrophy	P
Cysts	P
Epidermoid cyst	P
Epididymitis	P
Hernia sac with mesothelial entrapment	P
Hydrocele	P
Granulomatous inflammation	P
Infertility / Sertoli cell only	A
Pseudotumor / Funiculitis	P
Rete testis adenomatous hyperplasia	A
Sertoli cell nodule	A
Smooth muscle hyperplasia	P
Spermatocele	P

Testicular adrenal rest tumor / Tumor of adrenogenital syndrome	A
Torsion	P
Varicocele	P
Vasculitis	A
Vasitis nodosa	P
Choriocarcinoma	A
Cystic trophoblastic tumor	A
Embryonal carcinoma	A
Epithelioid trophoblastic tumor	A
Germ cell neoplasia in situ	A
Gonadoblastoma	A
Placental site trophoblastic tumor	A
Polyembryoma	A
Regressed germ cell tumor	A
Seminoma	P-A
Spermatocytic tumor	A
Teratoma	P
Teratoma-dermoid cyst	P
Teratoma-neuroendocrine tumor	A
Teratoma with somatic type malignancy	A
Yolk sac tumor	A
Sex cord stromal tumors-general	A
Adult granulosa cell tumor	A
Fibroma-thecoma group	A
Intratubular large cell hyalinizing Sertoli cell neoplasia (ITLCHSCN)	A
Juvenile granulosa cell tumor	A
Large cell calcifying Sertoli cell tumor	A
Leydig cell tumor	P-A
Mixed and other sex cord stromal tumors	A
Myoid gonadal stromal tumor	A
Sertoli cell tumor	A
Brenner tumor	A
Mucinous cystadenocarcinoma	A
Mucinous borderline tumor	A
Serous borderline tumor	A
Serous cystadenocarcinoma	A
Adenomatoid tumor	P
Mesothelioma	A
Well differentiated papillary mesothelial tumor	A
Adenocarcinoma	A
Adenocarcinoma of epididymis	A
Melanotic neuroectodermal tumor	A
Papillary cystadenoma	P
Leiomyosarcoma	A

Liposarcoma	A
Metastases	A
Primary lymphoma of testis	A

15. Male Genital Tract: Penis & Scrotum

Lesion	Level
Anatomy & histology – male urethra	P
Anatomy & histology – penis	P
Anatomy & histology – scrotum	P
Congenital anomalies	P
Grossing & features to report	P
Staging – male urethra	A
Staging – penis	A
WHO classification	A
Cellulitis	P
Chancroid	A
Condyloma acuminatum	P
Fournier gangrene	A
Granuloma inguinale	A
Herpes simplex virus	P
Lymphogranuloma venereum	A
Molluscum contagiosum	P
Syphilis	P
Balanitis / phimosis	P
Lichen sclerosus (balanitis xerotica obliterans)	P
Melanosis and lentiginosis	P
Mucoid cyst	P
Ossification	A
Pearly penile papules	P
Peyronie disease	P
Sclerosing lipogranuloma	A
Scrotal calcinosis	P
Squamous hyperplasia	P
Tancho nodules / paraffinomas / lipogranulomas	A
Verruciform xanthoma	P
Bowenoid papulosis	P
Extramammary Paget disease	A
Penile intraepithelial neoplasia (PeIN)	A
Squamous cell carcinoma – general	A
HPV-associated squamous cell carcinoma	A
HPV-independent squamous cell carcinoma (usual, verrucous, papillary, sarcomatoid)	A
Adenosquamous carcinoma	A
Basal cell carcinoma	A
Myointimoma	A

Urethral carcinoma

A

16. Head & Neck: Oral cavity & Oropharynx

Lesion	Level
Anatomy & histology	P
Grossing & features to report	P
Staging criteria	A
Staging - mucosal melanoma of head & neck	A
Staging - oral cavity	A
Staging - oropharynx & hypopharynx	A
WHO classification - oral cavity & oropharynx	A
Caliber persistent artery	P
Dermoid / epidermoid cyst	P
Duplication cyst	A
Fordyce granules	P
Hairy tongue	P
Leukoedema	P
Lingual thyroid	P
Lymphoepithelial cyst	P
Nasolabial cyst	P
Common oral infections	P
Oral hairy leukoplakia	P
Aphthous ulcers	P
Chronic ulcerative stomatitis	A
Geographic tongue	P
Erythema multiforme	P
Granulomatous inflammation	A
Inflammatory fibrous hyperplasia	P
Inflammatory papillary hyperplasia	P
Lichen planus	P
Median rhomboid glossitis	P
Melkersson-Rosenthal syndrome	A
Nicotine stomatitis	P
Paraneoplastic pemphigus	A
Pemphigoid	P
Pemphigus vulgaris	P
Plasma cell gingivitis	P
Pyostomatitis vegetans	A
Transient lingual papillitis	P
Traumatic ulceration with stromal eosinophilia (TUGSE)	A
Frictional keratosis	P
Hereditary benign intraepithelial dyskeratosis	A
Multifocal epithelial hyperplasia	P
Pleomorphic adenoma	P

Pseudoepitheliomatous hyperplasia	P
Spongiotic gingival hyperplasia	P
Squamous papilloma	P
Verruca vulgaris	P
Verruciform xanthoma	P
White sponge nevus	A
Amalgam tattoo	P
Lingual tonsil	P
Focal / multifocal melanin pigmentation	P
Actinic cheilitis	P
Dysplasia	P
Leukoplakia	P
Oral submucosal fibrosis	A
Smokeless tobacco keratosis	P
Proliferative verrucous leukoplakia (PVL)	A
Squamous cell carcinoma	A
Carcinoma cuniculatum	A
Verrucous carcinoma	A
Oropharyngeal carcinoma - HPV associated	A
Oropharyngeal carcinoma - HPV independent	A
Acinic cell carcinoma	A
Adenoid cystic carcinoma	A
Adenomatoid hyperplasia of minor glands	P
Canalicular adenoma	P
Mucocele	P
Mucoepidermoid carcinoma	A
Necrotizing sialometaplasia	P
Polymorphous adenocarcinoma	A
Salivary duct cyst	P
Adult type rhabdomyoma	A
Choristoma	P
Congenital epulis of newborn	P
Ectomesenchymal chondromyxoid tumor	A
Giant cell fibroma	P
Gingival hyperplasia	P
Irritation fibroma	P
Kaposi sarcoma	A
Low grade myofibroblastic sarcoma	A
Melanotic neuroectodermal tumor of infancy (A
Oral focal mucinosis	P
Mucosal neuroma	A
Parulis	P
Peripheral giant cell granuloma	P
Peripheral ossifying fibroma	P

Pyogenic granuloma	P
Schwannoma	P
Subgemmal neurogenous plaque	A
Varix / varicosities / varices	P
Malignant lymphoma	A
EBV positive mucocutaneous ulcer	A
Extranodal marginal zone lymphoma of MALT	A
Myeloid sarcoma	A
Plasmablastic lymphoma	A
Oral mucosal melanoma	A
Oropharyngeal neuroendocrine carcinoma	A

16. Head & Neck: Nasal cavity & nasopharynx Lesion

Lesion	Level
Adamantinomatous craniopharyngioma	A
Adenocarcinoma, general	A
Allergic fungal rhinosinusitis	P
Allergic rhinosinusitis	P
Anatomy	P
Biphenotypic sinonasal sarcoma	A
Chordoma	A
Chronic rhinosinusitis	P
Fungal ball	P
Glial heterotopia	A
Hairy polyp	P
High grade neuroendocrine carcinoma	A
HPV-related multiphenotypic sinonasal carcinoma	A
Inflammatory sinonasal polyp (including antrochoanal polyp)	P
Intestinal type adenocarcinoma	A
Invasive fungal rhinosinusitis	P
Low grade nasopharyngeal papillary adenocarcinoma	A
Nasal chondromesenchymal hamartoma	P
Nasopharyngeal angiofibroma	A
Nasopharyngeal carcinoma	A
Nonintestinal type adenocarcinoma	A
NUT carcinoma	A
Olfactory neuroblastoma	A
Psammomatoid ossifying fibroma	P
Respiratory epithelial adenomatoid hamartoma	P
Rhinosclerosis	P
Rhinosporidiosis	P
Salivary gland anlage tumor	P
Seromucinous hamartoma	P
Sinonasal carcinoma, general	A

Sinonasal glomangiopericytoma	A
Sinonasal lymphoepithelial carcinoma	A
Sinonasal meningioma	A
Sinonasal papilloma	P
Sinonasal undifferentiated carcinoma	A
Squamous cell carcinoma	A
Staging terminology	A
SWI/SNF complex-deficient sinonasal carcinoma	A
Teratocarcinosarcoma	A
WHO classification	A

16. Head & Neck: Larynx, Hypopharynx & Trachea

Lesion	Level
Anatomy & histology	P
Grossing & features to report	P
Staging-hypopharynx	A
Staging-larynx	A
WHO classification of Laryngeal tumors	A
Amyloidosis-larynx	A
Amyloidosis-trachea	A
Contact ulcer	P
Diphtheria	P
Laryngitis / Laryngoepiglottitis	P
Laryngeal cysts	P
Laryngocele	P
Papilloma	P
Vocal cord polyp	P
Dysplasia	P
Reactive epithelial hyperplasia	P
Verrucous hyperplasia	A
Squamous cell carcinoma of larynx	A
Verrucous carcinoma	A
Adenoid cystic carcinoma	A
Chondrosarcoma	A
Neuroendocrine neoplasm	A

16. Head & Neck: Mandible & Maxilla

Lesion	Level
Anatomy & histology	P
Grossing	P
WHO classification	A
Osteomyelitis overview	P
Acute suppurative osteomyelitis	P
Chronic recurrent multifocal osteomyelitis	A

Condensing osteitis	P
Diffuse sclerosing osteomyelitis	A
Medication-related osteonecrosis of jaw (MRONJ)	A
Osteoradionecrosis	A
Periapical (dental) granuloma	P
Secondary chronic osteomyelitis	P
Calcifying odontogenic cyst	P
Dentigerous cyst	P
Eruption cyst	P
Gingival cyst (newborn)	P
Gingival cyst (adult)	P
Glandular odontogenic cyst	A
Inflammatory collateral cyst	P
Lateral periodontal cyst and botryoid odontogenic cyst	P
Nasopalatine duct cyst	P
Odontogenic keratocyst	A
Orthokeratinized odontogenic cyst	A
Radicular (periapical) cyst	P
Residual cyst	P
Surgical ciliated cyst	A
Aneurysmal bone cyst	P
Central giant cell granuloma	P
Cherubism	A
Peripheral giant cell granuloma	P
Simple bone cyst	P
Stafne defect	P
Adenoid ameloblastoma	A
Adenomatoid odontogenic tumor	P
Ameloblastic fibroma	P
Ameloblastoma	P
Calcifying epithelial odontogenic tumor	A
Cementoblastoma	P
Cemento-ossifying fibroma / ossifying fibroma	P
Dentinogenic ghost cell tumor	A
Odontogenic fibroma	P
Odontogenic myxoma / fibromyxoma	P
Odontoma	P
Primordial odontogenic tumor	A
Squamous odontogenic tumor	P
Cemento-osseous dysplasia	P
Chondroblastoma	A
Chondromyxoid fibroma	P
Desmoplastic fibroma of bone	A
Fibrous dysplasia	P

Juvenile trabecular ossifying fibroma and psammomatoid ossifying fibroma	A
Osteoblastoma	P
Osteochondroma	P
Osteoma	P
Segmental odontomaxillary dysplasia	A
Calcium pyrophosphate crystal deposition disease	P
Melanotic neuroectodermal tumor of infancy	A
Odontoameloblastoma	A
Ameloblastic carcinoma	A
Clear cell odontogenic carcinoma	A
Ghost cell odontogenic carcinoma	A
Odontogenic carcinosarcoma	A
Odontogenic sarcoma / ameloblastic fibrosarcoma	A
Primary intraosseous carcinoma, NOS	A
Sclerosing odontogenic carcinoma	A
Chondrosarcoma	A
Langerhans cell histiocytosis	P
Lymphoma (jaw)	A
Mesenchymal chondrosarcoma	A
Metastases to jaw	A
Osteosarcoma	A
Rhabdomyosarcoma with TFCP2 rearrangement	A

16. Head & Neck: Salivary Glands

Lesion	Level
Anatomy & histology	P
Grossing, frozen section & features to report	P
Staging – major salivary glands	A
WHO classification	A
FNA – general	P
Milan reporting system for salivary gland cytopathology	A
Atypia of undetermined significance (AUS)	P
Salivary gland neoplasm of uncertain malignant potential (SUMP)	A
Nonneoplastic	P
Suspicious for malignancy	A
Malignant	A
Heterotopia	P
Oncocytosis	A
HIV salivary gland disease (HIV-SGD)	A
IgG4 related sialoadenitis	A
Lymphoepithelial sialadenitis	P
Necrotizing sialometaplasia	P
Sialadenitis – infectious	P
Chronic sialadenitis / sialolithiasis	P

Sjögren syndrome	A
Adenomatoïd hyperplasia and sialadenosis	P
Intercalated duct lesion	P
Lipomatosis	P
Lymphoepithelial cyst	P
Nodular oncocytic hyperplasia	A
Ranula	P
Salivary duct cyst	P
Basal cell adenoma	P
Canalicular adenoma	P
Cystadenoma	P
Ductal papilloma	P
Keratocystoma	A
Lymphadenoma	A
Myoepithelioma	A
Oncocytoma	P
Pleomorphic adenoma	P
Sclerosing polycystic adenoma	A
Sialadenoma papilliferum	A
Warthin tumor	P
Acinic cell carcinoma	A
Adenocarcinoma, NOS	A
Adenoid cystic carcinoma	A
Basal cell adenocarcinoma	A
Carcinoma ex pleomorphic adenoma	A
Carcinosarcoma	A
Clear cell carcinoma	A
Epithelial-myoepithelial carcinoma	A
Intraductal carcinoma	A
Lymphoepithelial carcinoma	A
Microsecretory adenocarcinoma	A
Mucinous adenocarcinoma	A
Mucoepidermoid carcinoma	P
Myoepithelial carcinoma	A
Neuroendocrine carcinoma	A
Polymorphous adenocarcinoma	A
Salivary duct carcinoma	A
Sclerosing microcystic adenocarcinoma	A
Sebaceous adenocarcinoma	A
Secretory carcinoma	A
Sialoblastoma	A
Squamous cell carcinoma	A
Extranodal marginal zone (MALT) lymphoma	A
Lipoma / sialolipoma	P

Metastases	A
Nodular fasciitis	A

17. Lung, Mediastinum, Pleura: Lung

Lesion	Level
Anatomy, histology, & embryology – lung	P
Biopsy interpretation & features to report	P
WHO classification (2021)	A
Developmental anomalies (sequestration, hypoplasia, congenital cysts)	P
Atelectasis	P
Pulmonary edema	P
Pulmonary embolism & infarction	P
Pulmonary hypertension	A
Diffuse alveolar damage / ARDS	A
Acute eosinophilic pneumonia	A
Organizing pneumonia (cryptogenic)	P
Chronic hypersensitivity pneumonitis	A
Sarcoidosis	P
Pneumoconiosis (silicosis, coal worker's, asbestosis)	P
Drug-induced interstitial lung disease	A
Radiation-induced lung injury	A
Usual interstitial pneumonia (UIP / IPF)	A
Nonspecific interstitial pneumonia (NSIP)	A
Acute fibrinous organizing pneumonia	A
Desquamative interstitial pneumonia (DIP)	A
Respiratory bronchiolitis-associated ILD	A
Lymphoid interstitial pneumonia (LIP)	A
Pulmonary alveolar proteinosis	A
Langerhans cell histiocytosis (pulmonary)	A
Lymphangioliomyomatosis (LAM)	A
Birt-Hogg-Dubé-associated cystic lung disease	A
Emphysema (centrilobular, panacinar, paraseptal)	P
Chronic bronchitis	P
Bronchiectasis	P
Bronchiolitis obliterans	A
Infectious pneumonia (bacterial, viral, fungal)	P
Tuberculosis	P
Nontuberculous mycobacterial infection	P
Fungal infections (Aspergillus, Mucor, Histoplasma, etc.)	A
Cytomegalovirus pneumonia	A
Pneumocystis jirovecii pneumonia	A
COVID-19 pneumonia	P
Diffuse alveolar hemorrhage syndromes	A
Goodpasture syndrome	A

Granulomatosis with polyangiitis (Wegener)	A
Eosinophilic granulomatosis with polyangiitis	A
Pulmonary capillaritis (microscopic polyangiitis)	A
Pulmonary infarct / hemorrhage	P
Pulmonary sequestration	P
Pulmonary hamartoma	P
Pulmonary sclerosing pneumocytoma	A
Carcinoid tumor (typical / atypical)	P
Large cell neuroendocrine carcinoma	A
Small cell lung carcinoma	A
Adenocarcinoma	P
Squamous cell carcinoma	P
Adenosquamous carcinoma	A
Sarcomatoid carcinoma	A
Pleomorphic carcinoma	A
Lymphoepithelioma-like carcinoma	A
Adenoid cystic carcinoma of lung	A
Mucoepidermoid carcinoma of lung	A
Salivary gland-type tumors (others)	A
Benign epithelial lesions (papilloma, adenoma)	P
Mucinous adenocarcinoma	A
Invasive mucinous adenocarcinoma	A
Minimally invasive adenocarcinoma	P
Adenocarcinoma in situ	P
Lepidic adenocarcinoma	P
Micropapillary / solid / acinar / papillary patterns	A
ALK-rearranged adenocarcinoma	A
EGFR-mutated adenocarcinoma	A
KRAS-mutated adenocarcinoma	A
ROS1 / RET / NTRK fusion-positive tumors	A
PD-L1 expression & molecular testing	A
Pulmonary metastases	P
Lymphoma involving lung	A
Inflammatory myofibroblastic tumor	A
Pulmonary sarcomas (angiosarcoma, synovial sarcoma, etc.)	A
Pulmonary blastoma	A
Staging – lung carcinoma (Latest TNM)	P
CAP reporting elements – lung resection	P

17. Lung, Mediastinum, Pleura: Mediastinum

Lesion	Level
Anatomy & Thymus Histology	P
Grossing & Features to Report	P

Staging – Thymic Tumors	A
Mediastinitis, Sclerosing	A
Myasthenia Gravis (associated)	P
Other Non-neoplastic	P
Thymic Follicular Hyperplasia	P
True Thymic Hyperplasia	P
Bronchogenic Cyst	P
Enteric (Esophageal) Duplication Cyst	P
Meningocele – Cystic	A
Müllerian (Hattori) Cyst	A
Pericardial Cyst	P
Teratoma – Cystic	A
Thymic Cyst	P
Thymoma (all types)	P
Thymolipoma	P
Thymic Squamous Cell Carcinoma	A
Thymic Carcinoma – Other Variants	A
Lymphoepithelial Carcinoma	A
Carcinoid Tumor (thymic)	P
Neuroendocrine Carcinoma (thymic)	A
Castleman Disease	A
Erdheim-Chester Disease	A
Germ Cell Tumors (Mediastinal)	A
Hodgkin Lymphoma (Mediastinal)	A
Metastases to Mediastinum	A
NUT Carcinoma	A
Primary Mediastinal Large B Cell Lymphoma and other lymphomas	A
Rosai-Dorfman Disease	A
Synovial Sarcoma (Mediastinal)	A
Thoracic SMARCA4-Deficient Undifferentiated Tumor	A
T Lymphoblastic Lymphoma / Leukemia	A

17. Lung, Mediastinum, Pleura: Pleura and Peritoneum Lesion

	Level
Anatomy, history, grossing & features to report	P
Staging	A
Pleural effusion	P
Pleural plaques	P
Pleuritis with pleural effusion	P
Pneumothorax	P
Adenomatoid tumor (pleura)	A
Benign mesothelial proliferations (pleura)	P
Diffuse mesothelioma (pleura)	A
Localized mesothelioma (pleura)	A

Mesothelioma (pleura) – biphasic	A
Mesothelioma (pleura) – desmoplastic	A
Mesothelioma in situ (pleura)	A
Mesothelioma (pleura) – epithelioid	A
Mesothelioma (pleura) – sarcomatoid	A
Mesothelioma versus adenocarcinoma (pleura)	A
Reactive pleuritis with mesothelial hyperplasia	P
Well differentiated papillary mesothelial tumor (pleura)	A
Metastases	A
Nodular histiocytic hyperplasia	P
Adenomatoid tumor (peritoneum)	P
Endosalpingiosis (peritoneum)	P
Mesothelial hyperplasia (peritoneum)	P
Mesothelioma (peritoneum) – overview	A
Mesothelioma (peritoneum) – epithelioid	A
Mesothelioma (peritoneum) – sarcomatoid and biphasic	A
Peritoneal inclusion cyst (peritoneum)	P
Well differentiated papillary mesothelial tumor (peritoneum)	A

18. Bone & Joints

Lesion / Topic	Level
Anatomy – bone & joints	P
Grossing, frozen section & features to report	P
Histology – bone & soft tissue	P
Fibrodysplasia ossificans progressiva	A
Skeletal dysplasias	A
Bacterial osteomyelitis (acute)	P
Chronic osteomyelitis	P
Tuberculous osteomyelitis	P
Calcium pyrophosphate crystal deposition disease	P
Degenerative joint disease	P
Gout and gouty arthritis	P
Juvenile rheumatoid arthritis	P
Lyme arthritis	A
Rheumatoid arthritis	P
Septic arthritis	P
Systemic lupus erythematosus	A
Tuberculous arthritis	P
Avascular necrosis	P
Brown tumor	P
Bursitis	P
Disc material	P
Epidermoid inclusion cyst	P
Fracture	P

Ganglion cyst	P
Implant related changes	A
Bone Infarct	P
Osteocartilaginous loose bodies	P
Osteochondritis dissecans	P
Osteogenesis imperfecta	A
Osteopetrosis	A
Osteoporosis	P
Paget disease of bone	A
Rickets / osteomalacia	P
Synovial cysts	P
Synovial lipomatosis	P
Tumoral calcinosis	A
Osteoma, NOS	P
Osteoid osteoma	P
Osteblastoma, NOS	A
Osteosarcoma, NOS	A
Low grade (central) osteosarcoma	A
Telangiectatic osteosarcoma	A
Small cell osteosarcoma	A
Parosteal osteosarcoma	A
Periosteal osteosarcoma	A
High grade surface osteosarcoma	A
Secondary osteosarcoma	A
Aneurysmal bone cyst	P
Nonossifying fibroma	P
Giant cell tumor of bone, NOS	A
Giant cell tumor of bone, malignant	A
BCOR::CCNB3 sarcoma	A
CIC rearranged sarcoma	A
Ewing sarcoma	A
Round cell sarcomas with EWSR1 / FUS::NFATC2	A
Undifferentiated pleomorphic sarcoma	A
Atypical cartilaginous tumor / chondrosarcoma, grade 1	P
Chondrosarcoma (P, secondary, periosteal)	A
Clear cell chondrosarcoma	A
Dedifferentiated chondrosarcoma	A
Mesenchymal chondrosarcoma	A
Benign notochordal cell tumor	P
Chordoma	A
Bizarre parosteal osteochondromatous proliferation	A
Chondroblastoma	P
Chondromyxoid fibroma	P
Enchondroma	P

Osteochondroma	P
Osteochondromyxoma	A
Periosteal chondroma	P
Subungual exostosis	P
Synovial & tenosynovial chondromatosis	P
Desmoplastic fibroma of bone	A
Fibrosarcoma of bone	A
Tenosynovial giant cell tumor	P
Angiosarcoma	A
Epithelioid hemangioendothelioma	A
Epithelioid hemangioma of bone	P
Hemangioma	P
Pseudomyogenic hemangioendothelioma	A
Synovial hemangioma	P
Adamantinoma	A
Erdheim-Chester disease	A
Fibrous dysplasia	P
Infantile myofibromatosis	P
Juxta-articular myxoma	P
Langerhans cell histiocytosis	A
Liposclerosing myxofibrous tumor	A
Lymphoma	A
McCune-Albright syndrome	A
Metastases	P
Myositis ossificans	P
Osteofibrous dysplasia	P
Simple bone cyst	P
Systemic mastocytosis	A

19. Soft Tissue	
Lesion	Level

Acral myxoinflammatory fibroblastic sarcoma	A
Adult fibrosarcoma	P
Alveolar rhabdomyosarcoma	P
Alveolar soft part sarcoma	A
Anatomy & histology	P
Angiomatoid fibrous histiocytoma with malignant behavior	A
Angiomyolipoma (PEComa family)	A
Angiosarcoma	P
Atypical lipomatous tumor / Well-differentiated liposarcoma	P
BCOR-rearranged undifferentiated round cell sarcoma	A
Biopsy and grossing principles	P
Cellular angiofibroma	P
Chondroma (soft tissue)	P
Chondrosarcoma (mesenchymal, extraskeletal myxoid)	A

CIC-rearranged sarcoma	A
Clear cell sarcoma (melanoma of soft parts)	A
Dedifferentiated liposarcoma	P
Dermatofibroma	P
Dermatofibrosarcoma protuberans (DFSP)	A
Dermatofibrosarcoma protuberans (fibrosarcomatous transformation)	P
Desmoid-type fibromatosis	A
Desmoplastic small round cell tumor	A
Embryonal rhabdomyosarcoma	P
Epithelioid angiomyolipoma with malignant potential	A
Epithelioid hemangioendothelioma	A
Epithelioid leiomyosarcoma	A
Epithelioid MPNST	A
Epithelioid sarcoma (classic/proximal)	P
Epithelioid sarcoma (proximal & distal)	A
Extraskkeletal myxoid chondrosarcoma	A
Extraskkeletal osteosarcoma	A
Fibroma / fibromatosis (superficial)	P
Fibrosarcoma (infantile, adult)	A
Follicular dendritic cell sarcoma (soft tissue)	A
Giant cell tumor of tendon sheath	P
Glomus tumor	P
Hemangioma (capillary, cavernous, etc.)	P
Histiocytic sarcoma (soft tissue presentation)	A
Infantile fibrosarcoma	A
Inflammatory leiomyosarcoma	A
Inflammatory myofibroblastic tumor	A
Inflammatory myofibroblastic tumor with malignant behavior	A
Interdigitating dendritic cell sarcoma	A
Intimal sarcoma (soft tissue/vascular origin)	A
Kaposi sarcoma	A
Kaposi sarcoma (classic/iatrogenic/HIV-associated)	P
Leiomyosarcoma	P
Lipoblastoma	P
Low-grade fibromyxoid sarcoma	A
Malignant glomus tumor	A
Malignant melanotic nerve sheath tumor	A
Malignant myopericytoma	A
Malignant peripheral nerve sheath tumor (MPNST)	A
Mesenchymal chondrosarcoma (soft tissue)	A
MPNST with rhabdomyoblastic differentiation (malignant Triton tumor)	A
Myoepithelial carcinoma of soft tissue	A
Myofibroma / Myofibromatosis	P
Myxofibrosarcoma	A

Myxoid liposarcoma	P
Myxoid malignant peripheral nerve sheath tumor	A
Myxoid pleomorphic liposarcoma	A
Myxoinflammatory fibroblastic sarcoma	A
Nodular fasciitis	P
NTRK-rearranged spindle cell sarcoma	A
PEComa (perivascular epithelioid cell tumor)	A
PEComa, malignant	A
Peripheral nerve sheath tumors (schwannoma, neurofibroma)	A
Pleomorphic liposarcoma	P
Pleomorphic rhabdomyosarcoma	A
Pseudoangiomatous stromal hyperplasia	P
Pseudomyogenic hemangioendothelioma (rarely metastasizing)	A
Rhabdomyoma	P
Rhabdomyosarcoma (embryonal, alveolar, pleomorphic)	A
Sarcoma, NOS (high grade) - soft tissue	P
Sclerosing epithelioid fibrosarcoma	A
Solitary fibrous tumor	A
Solitary fibrous tumor (malignant)	A
Spindle cell / sclerosing rhabdomyosarcoma	A
Spindle cell lipoma / pleomorphic lipoma	P
Superficial CD34-positive fibroblastic tumor	A
Synovial sarcoma	A
Synovial sarcoma (monophasic/biphasic/poorly differentiated)	P
Tenosynovial giant cell tumor	P
Undifferentiated pleomorphic sarcoma	P-A
Undifferentiated spindle cell sarcoma, NOS	A
Well-differentiated / dedifferentiated liposarcoma	A

20. Hematopathology: Bone marrow

Lesion / Topic	Level
Biopsy and aspirate smear	P
Embryonic development	P
Features to report	A
Routine stains	P
General normal marrow	P
Age related changes	P
Basophils	P
Eosinophils	P
Erythroid maturation (erythropoiesis)	P
Hematogones	P
Lymphocyte maturation	P
Mast cells	P

Megakaryocytes	P
Monocytes	P
Neutrophil maturation	P
Osteoblasts	P
Osteoclasts	P
Plasma cells	P
Amegakaryocytosis	A
Aplastic anemia (AA)	A
Congenital dyserythropoietic anemia (CDA)	A
Congenital marrow failure	A
Diamond-Blackfan anemia	A
Dyskeratosis congenita	A
Fanconi anemia	A
Hypercellularity	P
Neutropenia	A
Pure red cell aplasia	A
Shwachman-Diamond syndrome	A
Thrombocytopenia absent radii (TAR) syndrome	A
Arsenic toxicity	A
Autoimmune myelofibrosis (AIMF)	A
Gelatinous transformation	A
Iron in nonneoplastic marrow	P
Lymphoid aggregates (benign)	P
Megaloblastic anemia	P
Necrosis	A
Plasmacytosis	P
Polymorphous reactive lymphoid hyperplasia	P
Systemic polyclonal B immunoblastic proliferation	A
CMV infection	A
Cryptococcus	A
Granulomatous inflammation	A
Histoplasmosis	A
HIV / AIDS changes	A
Parvovirus B19	A
Q fever	A
Alcohol abuse related marrow changes	P
Bone marrow transplantation	A
Chédiak-Higashi syndrome	A
Chronic renal disease	A
Copper deficiency	P
Hemophagocytic lymphohistiocytosis (HLH)	A
Gaucher disease	A
Niemann-Pick disease	A
Sea blue histiocytosis (syndrome)	A

Uncommon storage diseases	A
Acute myeloid leukemia (AML), general	P
AML with recurrent genetic abnormalities	A
AML with myelodysplasia-related changes	A
Therapy-related myeloid neoplasms	A
Myelodysplastic syndromes (MDS)	P
Myeloproliferative neoplasms (MPN)	P
Chronic myeloid leukemia (CML, BCR::ABL1 positive)	P
Atypical CML, BCR::ABL1 negative	A
Chronic neutrophilic leukemia	A
Polycythemia vera	P
Essential thrombocythemia	P
Primary myelofibrosis	P
Mastocytosis (systemic / indolent / aggressive)	A
Eosinophilia-related myeloid neoplasms	A
Myeloid / lymphoid neoplasms with PDGFRA / PDGFRB / FGFR1 rearrangement	A
Plasma cell myeloma (multiple myeloma)	P
Smoldering myeloma	P
Monoclonal gammopathy of undetermined significance (MGUS)	P
Solitary plasmacytoma	P
Plasma cell leukemia	A
AL amyloidosis (associated with plasma cell dyscrasia)	A
Waldenström macroglobulinemia	A
Lymphoplasmacytic lymphoma	A
Chronic lymphocytic leukemia / small lymphocytic lymphoma (CLL / SLL)	P
Prolymphocytic leukemia	A
Hairy cell leukemia	P
Hairy cell leukemia variant	A
Splenic marginal zone lymphoma	A
Mantle cell lymphoma involving marrow	A
Follicular lymphoma involving marrow	P
Diffuse large B-cell lymphoma involving marrow	P
Burkitt lymphoma / leukemia	A
B-lymphoblastic leukemia / lymphoma	P
T-lymphoblastic leukemia / lymphoma	P
Adult T-cell leukemia / lymphoma	A
Peripheral T-cell lymphoma	A
Anaplastic large cell lymphoma	A
Hodgkin lymphoma involving bone marrow	A
Histiocytic sarcoma	A
Langerhans cell histiocytosis	A
Dendritic cell sarcoma	A
Blastic plasmacytoid dendritic cell neoplasm (BPDCN)	A
Myeloid sarcoma	A

Extramedullary hematopoiesis	P
Metastatic carcinoma to bone marrow	P
Metastatic neuroblastoma	A
Metastatic Ewing sarcoma / PNET	A
Metastatic rhabdomyosarcoma	A
Metastatic melanoma	A

20. Hematopathology: Hematology & Immune disorders

Lesion

Aggressive NK cell leukemia	A
Alpha thalassemia	P
Anaplasma	P
Anemia classification	P
ATLL (Adult T-cell leukemia/lymphoma)	A
Autoimmune lymphoproliferative syndrome	A
Babesia	P
Beta thalassemia	P
Borrelia burgdorferi	P
Borrelia recurrentis / relapsing fever	P
B cell monoclonal lymphocytosis	A
Chronic granulomatous disease	A
Chronic lymphoproliferative disorders of NK cells	A
CLL / SLL (Chronic lymphocytic leukemia / Small lymphocytic lymphoma)	A
CR3 deficiency	A
Crystal storing histiocytosis	A
Diagnosing hemolytic anemia	P
Folate deficiency anemia	P
Hairy cell leukemia	A
Hairy cell leukemia variant	A
Hemoglobin C disease	P
Hemoglobin S/C disease	P
Hepatosplenic T-cell lymphoma	A
Hereditary persistence of fetal hemoglobin (HPFH)	P
Immune thrombotic thrombocytopenic purpura (TTP)	A
Iron deficiency anemia	P
MCL-leukemic nonnodal	A
Neoplastic WBC	A
Omenn syndrome	A
Other lymphocyte immune disorders	A
Paroxysmal cold hemoglobinuria (PCH)	P
Paroxysmal nocturnal hemoglobinuria (PNH)	A
Plasmodium falciparum	P
Plasmodium non-falciparum	P
Prolymphocytic leukemia	A

RBC inclusions	P
Reactive lymphocytosis	P
Reactive neutrophilia	P
Sézary syndrome	A
Sickle cell disease	P
T cell large granular lymphocytic leukemia	A
T cell prolymphocytic leukemia	A
Trypanosomes	P
Vitamin B12 deficiency	P
Wiskott-Aldrich syndrome	A

20. Hematopathology: Lymph Nodes Spleen Nonlymphoma Lesion

Lesion	Level
Anatomy & histology – lymph nodes	P
B & T cells	P
Grossing & features to report	P
WHO system for reporting lymph node cytopathology	A
Anatomy, histology & grossing – spleen	P
Common nonspecific abnormal features (spleen)	P
Splenectomy, rupture & splenosis	P
Adipose tissue	P
Decidual reaction	A
Epithelial inclusions	P
Mesothelial inclusions	P
Other ectopic inclusions	P
Anthracois	P
Lipofuscin	P
Silicone	P
Other pigment / foreign material	P
Cat scratch disease	P
HIV lymphadenopathy	A
Infectious mononucleosis	P
Luetic lymphadenitis (syphilitic)	A
Mycobacterial infection (atypical / other than TB or leprosy)	A
Toxoplasmosis	P
Other infections	P
Castleman disease	A
Dermatopathic lymphadenopathy	P
Drug hypersensitivity	P
IgG4-related lymphadenopathy	A
Indolent T lymphoblastic proliferation	A
Kawasaki disease	A
Kikuchi disease	P
Kimura disease	P

Progressive transformation of germinal centers (PTGC)	P
Rheumatoid arthritis lymphadenopathy	P
Reactive B-cell rich proliferations mimicking lymphoma	A
Rosai-Dorfman disease (RDD)	A
Systemic lupus erythematosus (SLE)	A
Adult-onset Still disease	A
Follicular hyperplasia	P
Granulomatous inflammation	P
Hemophagocytic lymphohistiocytosis (HLH)	A
Reactive lymphadenopathy (general)	P
Angiolipomatous hamartoma	A
Angiomyolipoma	P
Angiomyomatous hamartoma	A
Hemangioma (lymph node)	P
Lymphangioma	P
Lymphangiomyomatosis	A
Vascular transformation of sinuses	P
ALK+ histiocytosis	A
Amyloid	A
EBV+ inflammatory follicular dendritic cell / fibroblastic reticular cell tumor	A
Erdheim-Chester disease	A
Fibroblastic reticulum cell sarcoma	A
Follicular dendritic cell sarcoma (FDCS)	A
Histiocytic sarcoma	A
Indeterminate dendritic cell tumor	A
Interdigitating dendritic cell sarcoma	A
Intranodal palisaded myofibroblastoma	P
Langerhans cell histiocytic neoplasms	A
Metastases	P
Myofibroblastoma	P
Plasmacytoma	A
Accessory spleen	P
Splenic malformations	P
Epithelial cyst	P
Abscess	P
Acute splenitis	P
Granulomatous inflammation (spleen)	P
Uncommon infections	A
Infectious mononucleosis (spleen)	P
Splendore-Hoeppli phenomenon	A
Amyloidosis	A
Congestive splenomegaly	P
Gaucher disease	A
Hemophagocytic lymphohistiocytosis (HLH)	A

Hereditary spherocytosis	P
Immune thrombocytopenia (ITP)	P
Hamartoma	P
Hemangioma	P
Littoral cell angioma	A
Sclerosing angiomatoid nodular transformation (SANT)	A

20. Hematopathology: Lymphoma & Related Disorders

Lesion	Level
Composite lymphoma	A
EBV related lymphoid proliferations	P
Flow cytometry	P
Molecular overview	A
Staging – P cutaneous	P
WHO 2019 GI hematolymphoid tumors	A
WHO 2022 & ICC – B cell	A
WHO 2022 & ICC – T / NK cell	A
WHO 2016 T/NK cell	A
WHO 2017 B cell	A
CLL / SLL	P
Richter syndrome	A
Monoclonal B cell lymphocytosis	P
Prolymphocytic leukemia	A
Lymphoplasmacytic lymphoma	A
MALT lymphoma (marginal zone)	P
Nodal marginal zone lymphoma	A
Pediatric nodal marginal zone lymphoma	A
Follicular lymphoma – usual type	P
Follicular lymphoma – duodenal type	A
In situ follicular B cell neoplasm	A
Pediatric type follicular lymphoma	A
Primary follicular lymphoma – testis	A
Unusual morphologic patterns of follicular lymphoma	A
Mantle cell lymphoma – classic	P
In situ mantle cell neoplasm	A
Mantle cell leukemia/non-nodal	A
Mantle cell aggressive variants	A
DLBCL, NOS	P
Burkitt lymphoma	P
High-grade B cell lymphoma with 11q aberrations	A
DLBCL / HGBCL with MYC and BCL2 rearrangements	A
HGBCL, NOS	A
Primary mediastinal large B cell lymphoma	A
LBCL with IRF4 rearrangement	A

T cell / histiocyte rich LBCL	A
EBV+ DLBCL	A
Fibrin-associated large B cell lymphoma	A
Fluid overload-associated LBCL	A
Mediastinal gray zone lymphoma	A
Pyothorax-associated lymphoma	A
Lymphomatoid granulomatosis	A
Plasmablastic lymphoma	A
Intravascular LBCL	A
ALK+ LBCL	A
Primary effusion lymphoma	A
Primary cutaneous DLBCL-leg type	A
Primary cutaneous follicle center lymphoma	A
Primary cutaneous marginal zone lymphoma	P
Hairy cell leukemia	P
Splenic B cell leukemia / lymphoma	A
Splenic B cell lymphoma / leukemia with prominent nucleoli	A
Splenic diffuse red pulp small B cell lymphoma	A
Splenic marginal zone lymphoma	P
Primary testicular DLBCL	A
Primary CNS lymphoma	A
PTLD – polymorphic	P
PTLD – classic Hodgkin	A
EBV+ mucocutaneous ulcer	A
Inborn error of immunity-associated lymphoid proliferations	A
Lymphomas arising in immune deficiency / dysregulation	A
Polymorphic lymphoproliferative disorders (immunodeficiency-associated)	A
HHV8 associated multicentric Castleman disease	A
HHV8 positive DLBCL, NOS	A
HHV8 positive germinotropic lymphoproliferative disorder	A
CHL – lymphocyte rich	P
CHL – lymphocyte depleted	A
CHL – mixed cellularity	P
CHL – nodular sclerosis	P
Classic Hodgkin lymphoma (unspecified)	P
Nodular lymphocyte predominant B cell lymphoma / NLPHL	A
T prolymphocytic leukemia	A
T cell large granular lymphocytic leukemia	P
NK large granular lymphocytic leukemia	P
Aggressive NK cell leukemia	A
Adult T cell leukemia/lymphoma (ATLL)	A
Sézary syndrome	A
Enteropathy associated T cell lymphoma	A
Intestinal T cell lymphoma, NOS	A

Monomorphic epitheliotropic intestinal T cell lymphoma	A
Indolent T cell lymphoma of GI tract	A
Indolent NK cell lymphoproliferative disease of GI tract	A
EBV+ nodal T and NK cell lymphoma	A
Extranodal NK / T cell lymphoma	A
Hepatosplenic T cell lymphoma	A
Peripheral T cell lymphoma, NOS	A
Anaplastic large cell lymphoma – ALK positive	P
Anaplastic large cell lymphoma – ALK negative	A
Breast implant associated ALCL	A
Nodal T follicular helper lymphoma – angioimmunoblastic type	A
Nodal TFH lymphoma – follicular type	A
Nodal TFH lymphoma – NOS	A
Mycosis fungoides	P
Mycosis fungoides – subtypes	A
Primary cutaneous acral CD8+ lymphoproliferative disorder	A
Primary cutaneous CD4+ small/medium T cell lymphoproliferative disorder	A
Primary cutaneous CD8+ aggressive epidermotropic cytotoxic T cell lymphoma	A
Primary cutaneous gamma delta T cell lymphoma	A
Primary cutaneous PTCL, NOS	A
Subcutaneous panniculitis-like T cell lymphoma	A
Lymphomatoid papulosis	P
Primary cutaneous anaplastic large cell lymphoma	A
Pediatric NK/T cell disorders	A
Acute lymphoblastic leukemia / lymphoma	P
Early T cell precursor lymphoblastic leukemia	A
NK lymphoblastic leukemia / lymphoma	A
T lymphoblastic lymphoma / leukemia	P

21. Nervous System and Muscle: Non-Tumor Lesion / Topic

	Level
CNS gross, anatomy histology & embryology	P
Paraneoplastic syndromes	A
Arnold-Chiari malformation	P
Dandy-Walker malformation	P
Focal cortical dysplasia (epilepsy related malformations)	A
Holoprosencephaly	A
Meckel-Gruber syndrome	A
Neural tube closure defects	P
Abscess	P
Bacterial meningitis	P
CMV infection	A
Herpes simplex encephalitis	P
Other acute viral infections	A

Amebic meningoencephalitis	A
Rabies	A
HIV encephalitis	A
Progressive multifocal leukoencephalopathy (PML) / JC virus	A
Subacute sclerosing panencephalitis (SSPE)	A
Syphilis	A
Tuberculosis	P
Whipple disease	A
Aspergillosis	A
Other fungal infections	A
Entamoeba	P
Taenia solium (neurocysticercosis)	P
Toxoplasmosis	P
Trypanosomes	A
Alcoholic cerebellar degeneration	P
Carbon monoxide injury	P
Hepatic encephalopathy	P
Heroin leukoencephalopathy	A
Methanol toxicity	A
Methotrexate toxicity	A
Pontine and extrapontine myelinolysis	A
Radiation injury	A
Subacute combined degeneration	A
Wernicke-Korsakoff syndrome	P
Leukodystrophies	A
Multiple sclerosis	P
Amyotrophic lateral sclerosis	P
Corticobasal degeneration	A
Huntington disease	P
Multiple system atrophy	A
Parkinson disease	P
Progressive supranuclear palsy	A
X-linked bulbospinal neuronopathy (Kennedy disease)	A
Cerebral amyloid angiopathy	A
Primary angiitis of CNS	A
Ischemic stroke / infarct	P
Alzheimer disease	P
Chronic traumatic encephalopathy	A
Frontotemporal dementia	A
Dementia with Lewy bodies	A
Vascular dementia	A

**21. Nervous System and Muscle: Tumor
Lesion / Topic**

Level

CNS gross, anatomy histology & embryology	P
DNA methylation classification of CNS tumors	A
Grossing, features to report & staging	P
WHO classification	P
Colloid cyst	P
Ectodermal cysts	P
Endodermal cysts	P
Glioependymal / ependymal cyst	P
Meningeal cyst	P
Neuroectodermal cysts	P
Pineal cyst	P
Rathke cleft cyst	P
Simple cyst	P
Synovial cyst	P
Syrinx	P
Glioma overview	P
WHO grading of gliomas	P
Astroblastoma, MN1 altered	A
Chordoid glioma	A
Gliosarcoma	A
High grade astrocytoma with piloid features (HGAP)	A
Pleomorphic xanthoastrocytoma	P
Pilocytic astrocytoma	P
Subependymal giant cell astrocytoma	P
Astrocytoma, IDH mutant	P
Glioblastoma, IDH wild type	P
Oligodendroglioma, IDH mutant and 1p/19q codeleted	P
Diffuse hemispheric glioma, H3 G34 mutant	A
Diffuse midline glioma, H3 K27 altered	A
Diffuse pediatric-type high grade glioma, H3 wild type and IDH wild type	A
Infant-type hemispheric glioma	A
Angiocentric glioma	P
Diffuse astrocytoma, MYB or MYBL1 altered	A
Diffuse low-grade glioma, MAPK pathway altered	A
Polymorphous low-grade neuroepithelial tumor of the young (PLNTY)	P
Ependymoma overview	P
Myxopapillary ependymoma	P
Posterior fossa ependymoma	A
Spinal ependymoma	P
Subependymoma	P
Supratentorial ependymoma, YAP1 fusion positive	A
Supratentorial ependymoma, ZFTA fusion positive	A
Central neurocytoma	P
Cerebellar liponeurocytoma	A

Desmoplastic infantile ganglioglioma / astrocytoma	P
Diffuse leptomeningeal glioneuronal tumor	A
Dysembryoplastic neuroepithelial tumor (DNET)	P
Dysplastic cerebellar gangliocytoma (Lhermitte-Duclos disease)	A
Extraventricular neurocytoma	A
Gangliocytoma & ganglioglioma	P
Multinodular and vacuolating neuronal tumor (MVNT)	P
Myxoid glioneuronal tumor	A
Papillary glioneuronal tumor	A
Rosette-forming glioneuronal tumor (RGNT)	A
Medulloblastoma	P
Medulloblastoma, SHH activated	A
Atypical teratoid / rhabdoid tumor	A
CNS embryonal tumor, NOS / NEC	A
CNS neuroblastoma, FOXR2 activated	A
CNS tumor with BCOR internal tandem duplication	A
Embryonal tumor with multilayered rosettes (ETMR)	A
Choroid plexus papilloma / atypical papilloma / carcinoma	P
Desmoplastic myxoid tumor of the pineal region, SMARCB1 mutant	A
Papillary tumor of pineal region	A
Pineoblastoma	A
Pineocytoma	P
Pineal parenchymal tumor of intermediate differentiation	A
Meningioma (general)	P
WHO grading of meningiomas	P
Anaplastic meningioma	A
Atypical meningioma	P
Chordoid meningioma	A
Clear cell meningioma	A
Papillary meningioma	A
Rhabdoid meningioma	A
Germ cell tumors	P
Adamantinomatous craniopharyngioma	P
Papillary craniopharyngioma	P
Pituicytoma	P
Spindle cell oncocytoma	A
Granular cell tumor (sellar)	A
Pituitary hyperplasia	P
Pituitary neuroendocrine tumor (PitNET)	P
Histiocytic tumors	A
Intravascular large B-cell lymphoma	A
Lymphomatoid granulomatosis	A
MALT lymphoma of dura	A
Miscellaneous rare CNS lymphomas	A

Primary CNS lymphoma	P
Cauda equina neuroendocrine tumor	A
CIC rearranged sarcoma	A
Hemangioblastoma	P
Intracranial mesenchymal tumor, FET::CREB fusion positive	A
Melanocytic tumors / melanoma	A
Meningioangiomatosis	A
Metastases	P
Primary intracranial sarcoma, DICER1 mutant	A
Schwannoma	P
Solitary fibrous tumor	A

21. Nervous System and Muscle: Muscle Peripheral Nerve

Lesion	Level
Central core disease	P
Centronuclear myopathy	P
Congenital fiber type disproportion	A
Multiminicore myopathy	A
Nemaline myopathy	P
Antisynthetase syndrome–associated myositis	A
Dermatomyositis	P
Immune-mediated necrotizing myopathy	A
Inclusion body myositis	P
Polymyositis	P
Eosinophilic myofasciitis	A
Focal myositis	P
HIV myositis	A
Immune checkpoint inhibitor–related myositis	A
Lupus myositis	A
Scleromyositis	A
Sjögren disease–associated myositis	A
Becker and Duchenne muscular dystrophy	P
Congenital muscular dystrophies	A
Facioscapulohumeral muscular dystrophy	P
Limb girdle muscular dystrophy	A
Myotonic dystrophy	P
Oculopharyngeal muscular dystrophy	A
Glycogen storage diseases	P
Lipid storage diseases	A
Mitochondrial myopathies	A
Neurogenic atrophy	P
Spinal muscular atrophy (SMA)	P
Type II atrophy	A
Danon disease	A

Myofibrillar myopathies	A
Tubular aggregates myopathy	A
X-linked myopathy with excessive autophagy	A
Hydroxychloroquine myopathy	A
Macrophagic myofasciitis	P
Myosin heavy chain loss / critical illness myopathy	A
Statin myopathy	A
Steroid myopathy	A
Zidovudine myopathy	A
Charcot–Marie–Tooth disease	P
Giant axon neuropathy	A
Hereditary neuropathy with pressure palsies	P
Guillain–Barré syndrome	P
Chronic inflammatory demyelinating polyneuropathy	A
Anti-Caspr1 neuropathy	A
Anti-contactin 1 neuropathy	A
Anti-neurofascin neuropathy	A
Amyloid neuropathy	P
Diabetic peripheral neuropathy	P
Vasculitic neuropathy	A

22. Heart & Vascular Pathology

Lesion / Topic	Level
Embryology	P
Features to report	P
Histology	P
Left ventricular assist device (LVAD)	A
Valves	P
Tetralogy of Fallot	A
Vertebral defects, Anal atresia, Cardiac defects, Tracheo-esophageal fistula, Renal anomalies, and Limb abnormalities (VACTERL) association	A
Infective endocarditis	P
Noninfective endocarditis	P
Giant cell arteritis	A
Infective myocarditis	P
Noninfective myocarditis	P
Noninfective pericarditis	P
Anomalous coronary artery	P
Aortic aneurysms	P
Atherosclerotic coronary artery disease	P
Fibromuscular dysplasia	P
Myocardial infarction	A
Nonatherosclerotic coronary artery disease	A
Amyloidosis	A

Sarcoidosis	P
Connective tissue diseases	P
Degenerative valve disease	P
Drug induced valvular heart disease	A
Lambl excrescence	P
Prosthetic valves	A
Syphilis	A
Arrhythmogenic right ventricular cardiomyopathy	A
Hypertrophic cardiomyopathy	P
Idiopathic restrictive cardiomyopathy	A
Primary and secondary dilated cardiomyopathy	P
Takotsubo cardiomyopathy	A
Acute cellular rejection	P
Antibody mediated rejection	A
Chronic allograft vasculopathy	A
Cardiac fibroma	P
Cardiac myxoma	P
Cystic tumor of the atrioventricular node	A
Papillary fibroelastoma	P
Rhabdomyoma	P
Angiosarcoma	A

6. Molecular Pathology: Molecular Markers: Associated Tumors

System	Marker	Gene / Protein	Associated Tumor	Level
Lung	EGFR	EGFR	Lung adenocarcinoma	P
Lung	ALK	ALK	NSCLC	P
Lung	ROS1	ROS1	NSCLC	P
Lung	RET	RET	NSCLC	A
Lung	NTRK	NTRK1/2/3	NSCLC (rare)	A
Lung	KRAS	KRAS	NSCLC	P
Lung	BRAF	BRAF	NSCLC	A
Lung	METex14	MET	NSCLC	A
Lung	HER2	ERBB2 (HER2)	NSCLC	A
Lung	PD-L1	PD-L1 protein	NSCLC	P
Lung	TP53	TP53	NSCLC, SCLC	A
Lung	RB1	RB1	SCLC	A
Breast	ER	ESR1 protein	Breast carcinoma	P
Breast	PR	PGR protein	Breast carcinoma	P
Breast	HER2	ERBB2	Breast carcinoma	P
Breast	Ki67	MKI67	Breast carcinoma	P
Breast	ESR1 mutation	ESR1	Metastatic ER+ breast cancer	A
Breast	PIK3CA	PIK3CA	HR+ breast carcinoma	A
Breast	BRCA1/2	BRCA1/BRCA2	Triple-negative / hereditary	A

Breast	ETV6-NTRK3	NTRK3	Secretory carcinoma of breast	A
Colon	MMR proteins	MLH1/MSH2/MSH6/PMS2	Colorectal carcinoma	P
Colon	BRAF V600E	BRAF	Colorectal carcinoma	P
Colon	KRAS/NRAS	KRAS/NRAS	Colorectal carcinoma	P
Colon	HER2	ERBB2	RAS/BRAF WT CRC subset	A
Colon	POLE/POLD1	POLE/POLD1	Colorectal carcinoma	A
Colon	APC	APC	Colorectal adenoma/carcinoma	P
Colon	TP53	TP53	Colorectal carcinoma	A
Stomach	HER2	ERBB2	Gastric adenocarcinoma	P
Stomach	EBV	EBER ISH	EBV+ gastric carcinoma	A
Stomach	CLDN18.2	CLDN18	Gastric adenocarcinoma	A
Stomach	MSI/MMR	MLH1/MSH2/MSH6/PMS2	Gastric carcinoma	P
Pancreas	KRAS	KRAS	Pancreatic ductal adenocarcinoma	P
Pancreas	CDKN2A	CDKN2A	Pancreatic ductal adenocarcinoma	A
Pancreas	SMAD4 (DPC4)	SMAD4	Pancreatic adenocarcinoma	P
Pancreas	GNAS	GNAS	IPMN	A
Pancreas	RNF43	RNF43	IPMN/MCN	A
Liver	TERT promoter	TERT	Hepatocellular carcinoma	A
Liver	CTNNB1	CTNNB1	HCC; HCA (β -catenin-activated)	A
Liver	IDH1/2	IDH1/IDH2	Intrahepatic cholangiocarcinoma	A
Liver	FGFR2	FGFR2	Cholangiocarcinoma	A
Head & Neck	p16	CDKN2A (p16) protein	Oropharyngeal SCC	P
Head & Neck	HR-HPV	HPV DNA/RNA	Oropharyngeal SCC	P
Head & Neck	MYB-NFIB	MYB	Adenoid cystic carcinoma	A
Head & Neck	ETV6-NTRK3	NTRK3	Secretory carcinoma (salivary)	A
Head & Neck	PRKD1	PRKD1	Polymorphous adenocarcinoma	A
Head & Neck	HRAS/PIK3CA	HRAS/PIK3CA	Salivary duct carcinoma/others	A
Thyroid	BRAF V600E	BRAF	Papillary thyroid carcinoma	P
Thyroid	RET/PTC	RET	Papillary thyroid carcinoma	A
Thyroid	NTRK fusions	NTRK	Papillary thyroid carcinoma	A
Thyroid	RAS	NRAS/HRAS/KRAS	Follicular-patterned tumors	P
Thyroid	TERT promoter	TERT	Aggressive thyroid cancers	A
Thyroid	RET M918T	RET	Medullary thyroid carcinoma	P
Prostate	ERG	ERG	Prostate adenocarcinoma	A
Prostate	PTEN loss	PTEN	Prostate adenocarcinoma	A
Prostate	SPOP	SPOP	Prostate adenocarcinoma	A
Prostate	AR-V7	AR	CRPC	A
Prostate	BRCA1/2 / HRD	BRCA1/2	mCRPC subset	A
Kidney	VHL	VHL	ccRCC	P
Kidney	PBRM1	PBRM1	ccRCC	A
Kidney	TFE3/TFEB	TFE3/TFEB	MiT family RCC	A

Kidney	FH loss (2SC+)	FH	FH-deficient RCC (HLRCC)	A
Kidney	SDH deficiency (SDHB-)	SDH complex	SDH-deficient RCC	A
Kidney	BAP1 loss	BAP1	ccRCC	A
Bladder	FGFR3	FGFR3	Urothelial carcinoma	P
Bladder	TERT promoter	TERT	Urothelial carcinoma	A
Bladder	ERBB2	ERBB2	Urothelial carcinoma	A
Bladder	PD-L1	PD-L1	Urothelial carcinoma	P
Ovary	BRCA1/2	BRCA1/BRCA2	High grade serous carcinoma	P
Ovary	HRD signature	Multiple	High grade serous carcinoma Endometriosis-associated tumors (clear cell/endometrioid)	A
Ovary	ARID1A	ARID1A	Endometrioid carcinoma (uterus/ovary)	A
Ovary	POLE	POLE	Low grade serous / mucinous tumors	A
Ovary	KRAS/BRAF/NRAS	RAS genes	Adult granulosa cell tumor	P
Ovary	FOXL2 C134W	FOXL2	Sertoli-Leydig tumor; pediatric ovarian tumors	P
Ovary	DICER1	DICER1	SMARCA4-deficient SCCOHT	A
Ovary	SMARCA4 loss	SMARCA4	SMARCA4-deficient SCCOHT	A
Cervix	p16 (HPV surrogate)	CDKN2A protein	HPV-associated lesions	P
Endometrium	MMR proteins/MSI	MLH1/MSH2/MSH6/PMS2	Endometrial carcinoma	P
Endometrium	POLE ultramutated	POLE	Endometrial carcinoma	A
Endometrium	p53	TP53 protein	Serous carcinoma	P
Endometrium	CTNNB1	CTNNB1	Endometrioid carcinoma	A
Soft tissue	EWSR1-FLI1	EWSR1	Ewing sarcoma	P
Soft tissue	SS18-SSX	SS18	Synovial sarcoma	P
Soft tissue	FUS-DDIT3 / EWSR1-DDIT3	FUS/EWSR1	Myxoid liposarcoma Atypical lipomatous tumor / WD/DD liposarcoma	P
Soft tissue	MDM2/CDK4	MDM2/CDK4	WD/DD liposarcoma	P
Soft tissue	NAB2-STAT6	STAT6	Solitary fibrous tumor Aneurysmal bone cyst; nodular fasciitis	P
Soft tissue	USP6 rearrangements	USP6	Aneurysmal bone cyst; nodular fasciitis	A
Soft tissue	KIT/PDGFR	KIT/PDGFR	GIST	P
Soft tissue	SDH deficiency	SDH	SDH-deficient GIST	A
Bone	H3F3A G34W	H3F3A	Giant cell tumor of bone	P
Bone	H3K36M	H3F3B	Chondroblastoma	P
Bone	IDH1/2	IDH1/2	Central cartilaginous tumors Multiple osteochondroma (HMO)	A
Bone	EXT1/2	EXT1/EXT2	Multiple osteochondroma (HMO)	A
Bone	COL1A1-PDGFB	COL1A1	Dermatofibrosarcoma protuberans	P
Bone	FOS/FOSB	FOS/FOSB	Osteoid osteoma/osteoblastoma subset	A
Bone	FOS/FOSB	FOS/FOSB	Diffuse astrocytoma/oligodendroglioma	A
CNS	IDH1 R132H	IDH1	astrocytoma/oligodendroglioma	P

CNS	1p/19q codeletion	1p/19q	Oligodendroglioma (IDH-mutant)	P
CNS	ATRX loss	ATRX	Astrocytoma IDH-mutant Glioblastoma IDH-wildtype; oligodendroglioma	P A
CNS	TERT promoter	TERT	Glioblastoma	P
CNS	MGMT methylation	MGMT	Diffuse midline glioma	P
CNS	H3 K27M (K27-altered)	H3F3A/HIST1H3B/C	Diffuse hemispheric glioma	P
CNS	H3 G34R/V	H3F3A	CNS tumor with BCOR ITD	A
CNS	BCOR ITD	BCOR	Melanoma	P
Skin	BRAF V600E/K	BRAF	Melanoma	A
Skin	NRAS	NRAS	Mucosal/acral melanoma subset	A
Skin	KIT	KIT	Melanoma	A
Skin	TERT promoter	TERT	BAP1 inactivated melanocytic tumors	A
Skin	BAP1 loss	BAP1	Pancreatic/Duodenal NET	A
NE	MEN1	MEN1	Pancreatic NET	A
NE	DAXX/ATRX	DAXX/ATRX	Paraganglioma/pheochromocytoma	P
NE	SDHB loss	SDHB	Pheochromocytoma/paraganglioma	P
NE	RET/NF1/VHL/TMEM127/MAX	Multiple	Lymphoplasmacytic lymphoma (Waldenström)	A
Heme	MYD88 L265P	MYD88	HGBCL/DLBCL/double hit	P
Heme	BCL2/BCL6/MYC	BCL2/BCL6/MYC	Mantle cell lymphoma	P
Heme	CCND1/IGH	CCND1	Mantle cell lymphoma	P
Heme	SOX11	SOX11	Hairy cell leukemia; LCH	P
Heme	BRAF V600E	BRAF	MPNs	P
Heme	JAK2 V617F / CALR / MPL	JAK2/CALR/MPL	AML	P
Heme	NPM1 / FLT3 / IDH1/2	NPM1/FLT3/IDH1/2	T-PLL	A
Heme	TCL1	TCL1	ALCL subsets	A
Heme	DUSP22 / TP63	DUSP22/TP63	Secretory carcinoma (breast/salivary)	A
Breast	ETV6-NTRK3	ETV6-NTRK3	Secretory carcinoma (breast/salivary)	A
Salivary	ETV6-NTRK3	ETV6-NTRK3	Carney triad tumors; myxomas	A
Soft tissue	PRKAR1A	PRKAR1A	Adrenocortical tumors	A
Adrenal	PRKACA/PRKACB	PRKACA/B	Somatotroph adenoma	A
Pituitary	GNAS	GNAS		

6. Molecular Markers: Diagnostic Role

System	Marker	Gene / Protein	Diagnostic or Prognostic Role	Level
Lung	EGFR	EGFR	Predictive for TKI therapy; resistance (T790M/exon20ins)	P

Lung	ALK	ALK	Predictive for ALK inhibitors	P
Lung	ROS1	ROS1	Predictive for ROS1 inhibitors	P
Lung	RET	RET	Predictive for RET inhibitors	A
Lung	NTRK	NTRK1/2/3	Predictive for TRK inhibitors	A
Lung	KRAS	KRAS	Predictive (KRAS G12C inhibitors); prognostic	P
Lung	BRAF	BRAF	Predictive for BRAF/MEK inhibitors (V600E)	A
Lung	METex14	MET	Predictive for MET inhibitors	A
Lung	HER2	ERBB2 (HER2)	Predictive for HER2-targeted therapy	A
Lung	PD-L1	PD-L1 protein	Predictive for immunotherapy	P
Lung	TP53	TP53	Prognostic; co-mutations	A
Lung	RB1	RB1	Defines SCLC biology	A
Breast	ER	ESR1 protein	Predictive for endocrine therapy	P
Breast	PR	PGR protein	Predictive for endocrine therapy	P
Breast	HER2	ERBB2	Predictive for anti-HER2 therapy; prognostic	P
Breast	Ki67	MKI67	Proliferation index; surrogate subtype	P
Breast	ESR1 mutation	ESR1	Endocrine resistance	A
Breast	PIK3CA	PIK3CA	Predictive for PI3K inhibitor	A
Breast	BRCA1/2	BRCA1/BRCA2	Predictive for PARP inhibitors; risk	A
Breast	ETV6-NTRK3	NTRK3	Diagnostic & predictive (TRK inhibitors)	A
Colon	MMR proteins	MLH1/MSH2/MSH6/PMS2	Lynch screening; predictive for immunotherapy	P
Colon	BRAF V600E	BRAF	Suggests sporadic MLH1 loss; prognostic	P
Colon	KRAS/NRAS	KRAS/NRAS	Negative predictor for anti-EGFR therapy	P
Colon	HER2	ERBB2	Predictive for anti-HER2 therapy	A
Colon	POLE/POLD1	POLE/POLD1	Ultramutated; prognostic/predictive	A
Colon	APC	APC	Pathogenesis; FAP	P
Colon	TP53	TP53	Pathogenesis; prognostic context-dependent	A
Stomach	HER2	ERBB2	Predictive for trastuzumab	P
Stomach	EBV	EBER ISH	Diagnostic; PD-L1 high; MSI-like	A
Stomach	CLDN18.2	CLDN18	Predictive for anti-CLDN18.2 therapy	A
Stomach	MSI/MMR	MLH1/MSH2/MSH6/PMS2	Predictive for immunotherapy	P
Pancreas	KRAS	KRAS	Diagnostic; ubiquitous driver	P
Pancreas	CDKN2A	CDKN2A	Pathogenesis	A
Pancreas	SMAD4 (DPC4)	SMAD4	Prognostic; metastatic pattern	P
Pancreas	GNAS	GNAS	Diagnostic (intestinal subtype)	A
Pancreas	RNF43	RNF43	Wnt pathway; predictive research	A
Liver	TERT promoter	TERT	Early event; prognostic	A
Liver	CTNNB1	CTNNB1	Subtype; prognostic	A
Liver	IDH1/2	IDH1/IDH2	Predictive/prognostic; targeted therapy	A

Liver	FGFR2	FGFR2	Predictive for FGFR inhibitors	A
Head & Neck	p16	CDKN2A (p16) protein	Prognostic; surrogate for HPV high-risk	P
Head & Neck	HR-HPV	HPV DNA/RNA	Diagnostic/prognostic	P
Head & Neck	MYB-NFIB	MYB	Diagnostic	A
Head & Neck	ETV6-NTRK3	NTRK3	Diagnostic & predictive	A
Head & Neck	PRKD1	PRKD1	Diagnostic	A
Head & Neck	HRAS/PIK3CA	HRAS/PIK3CA	Predictive (trial)	A
Thyroid	BRAF V600E	BRAF	Diagnostic; prognostic	P
Thyroid	RET/PTC	RET	Diagnostic	A
Thyroid	NTRK fusions	NTRK	Predictive for TRK inhibitors	A
Thyroid	RAS	NRAS/HRAS/KRAS	Risk stratification	P
Thyroid	TERT promoter	TERT	Prognostic (adverse)	A
Thyroid	RET M918T	RET	Diagnostic; predictive	P
Prostate	ERG	ERG	Diagnostic subset; research prognostic	A
Prostate	PTEN loss	PTEN	Prognostic; predictive (PI3K/AKT)	A
Prostate	SPOP	SPOP	Subtype; prognostic	A
Prostate	AR-V7	AR	Predicts resistance to ARSi	A
Prostate	BRCA1/2 / HRD	BRCA1/2	Predictive for PARP inhibitors	A
Kidney	VHL	VHL	Pathogenesis; prognostic	P
Kidney	PBRM1	PBRM1	Subtype; immunotherapy response research	A
Kidney	TFE3/TFEB	TFE3/TFEB	Diagnostic; predictive	A
Kidney	FH loss (2SC+) SDH deficiency (SDHB-)	FH	Diagnostic; prognostic	A
Kidney	SDH complex	SDH complex	Diagnostic	A
Kidney	BAP1 loss	BAP1	Prognostic	A
Bladder	FGFR3	FGFR3	Predictive for FGFR inhibitors	P
Bladder	TERT promoter	TERT	Early event	A
Bladder	ERBB2	ERBB2	Predictive (HER2 therapy)	A
Bladder	PD-L1	PD-L1	Predictive for immunotherapy	P
Ovary	BRCA1/2	BRCA1/BRCA2	Predictive for PARP inhibitors	P
Ovary	HRD signature	Multiple	Predictive for PARP	A
Ovary	ARID1A	ARID1A	Diagnostic/biologic	A
Ovary	POLE	POLE	Ultramutated; prognostic	A
Ovary	KRAS/BRAF/NRAS	RAS genes	Predictive/prognostic	A
Ovary	FOXL2 C134W	FOXL2	Diagnostic	P
Ovary	DICER1	DICER1	Diagnostic/prognostic	A
Ovary	SMARCA4 loss	SMARCA4	Diagnostic; prognostic	A
Cervix	p16 (HPV surrogate)	CDKN2A protein	Diagnostic; prognostic	P
Endometrium	MMR proteins/MSI	MLH1/MSH2/MSH6/PMS2	Classification & Lynch; immunotherapy	P
Endometrium	POLE ultramutated	POLE	Excellent prognosis subgroup	A
Endometrium	p53	TP53 protein	Prognostic; molecular class	P
Endometrium	CTNNB1	CTNNB1	Prognostic	A

Soft tissue	EWSR1-FLI1	EWSR1	Diagnostic	P
Soft tissue	SS18-SSX	SS18	Diagnostic	P
Soft tissue	FUS-DDIT3 / EWSR1-DDIT3	FUS/EWSR1	Diagnostic	P
Soft tissue	MDM2/CDK4	MDM2/CDK4	Diagnostic	P
Soft tissue	NAB2-STAT6 USP6	STAT6	Diagnostic (IHC STAT6 nuclear)	P
Soft tissue	rearrangements	USP6	Diagnostic	A
Soft tissue	KIT/PDGFR	KIT/PDGFR	Predictive for imatinib/others	P
Soft tissue	SDH deficiency	SDH	Diagnostic	A
Bone	H3F3A G34W	H3F3A	Diagnostic (IHC clone)	P
Bone	H3K36M	H3F3B	Diagnostic (IHC)	P
Bone	IDH1/2	IDH1/2	Diagnostic/prognostic	A
Bone	EXT1/2	EXT1/EXT2	Diagnostic (syndromic)	A
Bone	COL1A1-PDGFR	COL1A1	Diagnostic; predictive	P
Bone	FOS/FOSB	FOS/FOSB	Diagnostic	A
CNS	IDH1 R132H	IDH1	Diagnostic; prognostic	P
CNS	1p/19q codeletion	1p/19q	Diagnostic; prognostic	P
CNS	ATRX loss	ATRX	Diagnostic	P
CNS	TERT promoter	TERT	Prognostic	A
CNS	MGMT methylation H3 K27M (K27- altered)	MGMT	Predictive for temozolomide response	P
CNS	H3 G34R/V	H3F3A/HIST1H3B/C	Diagnostic; prognostic	P
CNS	H3 G34R/V	H3F3A	Diagnostic; prognostic	A
CNS	BCOR ITD	BCOR	Diagnostic	A
Skin	BRAF V600E/K	BRAF	Predictive for BRAF/MEK therapy	P
Skin	NRAS	NRAS	Prognostic; therapy trials	A
Skin	KIT	KIT	Predictive (KIT inhibitors)	A
Skin	TERT promoter	TERT	Prognostic	A
Skin	BAP1 loss	BAP1	Diagnostic	A
NE	MEN1	MEN1	Pathogenesis; prognostic	A
NE	DAXX/ATRX	DAXX/ATRX	Prognostic; chromatin remodeling	A
NE	SDHB loss	SDHB	Diagnostic; syndromic	P
NE	RET/NF1/VHL/TME M127/MAX	Multiple	Risk; syndromic	A
Heme	MYD88 L265P	MYD88	Diagnostic	P
Heme	BCL2/BCL6/MYC	BCL2/BCL6/MYC	Prognostic; classification	P
Heme	CCND1/IGH	CCND1	Diagnostic	P
Heme	SOX11	SOX11	Diagnostic (especially cyclin D1-)	P
Heme	BRAF V600E	BRAF	Diagnostic; predictive	P
Heme	JAK2 V617F / CALR / MPL	JAK2/CALR/MPL	Diagnostic; prognostic	P
Heme	NPM1 / FLT3 / IDH1/2	NPM1/FLT3/IDH1/2	Risk stratification; therapy	P
Heme	TCL1	TCL1	Diagnostic	A
Heme	DUSP22 / TP63	DUSP22/TP63	Prognostic	A

Breast/Salivary	ETV6-NTRK3	ETV6-NTRK3	Diagnostic & predictive	A
Pituitary	GNAS	GNAS	Predictive (somatostatin analog response)	A