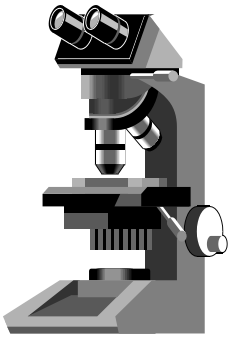
CALIFORNIA
TUMOR TISSUE REGISTRY

NEUROENDOCRINE PATHOLOGY

Minutes – Subscription A

October, 2006



SUGGESTED READING (General Topics from Recent Literature):

Sinonasal Undifferentiated Carcinoma Has Distinct Features. Ejaz A and Wenig BM. *Adv Anat Pathol* 2005; 12(5):134-143.

Localized Serosal Mass May Be Localized Malignant Mesothelioma. Allen TC, Cagle PT, et al. *Surg Pathol* 2005; 29 (7):866-873.

Incidence and Survival Rates Differ Among Colorectal Carcinoma Subtypes. Kang H, O'Connell JB, et al. *Dis Colon Rectum* 2005; 48 (6):1161-1168.

Grading Invasive Lobular Breast Carcinoma Provides Important Information. Bane AL, Tjan S, et al. *Mod Pathol* 2005; 18(5):621-628.

Basal Cell Hyperplasia Difficult to Diagnose on Prostate Needle Biopsy. Hosler GA and Epstein JI. *Hum Pathol* 2005; 36(5):480-485.

California Tumor Tissue Registry
c/o: Department of Pathology and Human Anatomy
Loma Linda University School of Medicine
11021 Campus Avenue, AH 335
Loma Linda, California 92350
(909) 558-4788
FAX: (909) 558-0188
E-mail: cttr@linkline.com
Web site & Case of the Month: www.cttr.org

FILE DIAGNOSES

(Preferably submitted on website at www.cttr.org. Click "subscriptions", then submit answers".)

CTTR Subscription A October, 2006

Case 1:

Carcinoid tumor (low grade neuroendocrine carcinoma), stomach
T-63000, M-82401

Case 2:

Solid-pseudopapillary tumor, pancreas
T-59000, M-03090

Case 3:

Paraganglioma (carotid body tumor), neck
T-Y0600, M-86801

Case 4:

Ganglioneuroma, adrenal gland
T-93000, M-94900

Case 5:

Pancreatic endocrine neoplasm (islet cell tumor)
T-59000, M-81500

Case 6:

Pheochromocytoma, adrenal
T-93020, M-87000

Case 7:

Merkel cell carcinoma (cutaneous neuroendocrine carcinoma), shoulder
T-Y1220, M-80423

Case 8:

Carcinoid tumor, testis
T-78000, M-82401

Case 9:

Carcinoid tumor, lung
T-28000, M-82401

Case 10:

Primitive small round cell tumor most consistent with Ewing's sarcoma/PNET, scapula and humerous
T-11280, M-92603

Case No. 1, Accession No. 30180 **October 2006**

Alameda (Alameda County Medical Center) - Gastric carcinoid tumor
Baldwin Park (Kaiser Permanente) - Neuroendocrine carcinoma (4)
Fontana (Kaiser Permanente) - Carcinoid tumor, stomach
Granada Hills - Small cell carcinoma
Hayward/Fremont - WDNET (carcinoid)
La Jolla (Scripps Clinic Hematopathology Fellowship) - Carcinoid tumor
La Jolla (Scripps Health) - Gastric carcinoid
Long Beach (VA Long Beach Health System) - Neuroendocrine carcinoma
Monterey (Community Hospital of the Monterey Peninsula) - Well-differentiated endocrine neoplasm
Monterey Park (Garfield Medical Center) - Carcinoid tumor
Orange (Orange County Medical Group) - Carcinoid
Orange County (Kaiser Permanente) - Neuroendocrine tumor
Orange (University of California Irvine Residents) - Low grade neuroendocrine tumor (carcinoid tumor)
Oxnard (St. John's Regional Medical Center) - Carcinoid (5)
Rancho Mirage (Eisenhower Medical Center) - Carcinoid
Sacramento (UC Davis Residents) - Carcinoid tumor
San Diego (Naval Medical Center) - Gastric neuroendocrine tumor (carcinoid)
San Diego (UCSD Medical Center) - Carcinoid
San Francisco (San Francisco General Hospital) - Carcinoid
San Francisco (UCSF Residents) - Gastric neuroendocrine tumor
Santa Rosa (Santa Rosa Memorial Hospital) - Carcinoid tumor (3)
Woodland Hills (Kaiser Permanente Medical Center) - Well-differentiated neuroendocrine tumor (carcinoid tumor)
Woodland Hills (Suda's Soldiers) - Neuroendocrine neoplasm (enterchromoffin-like cell tumor)
Arkansas (University of Arkansas for Medical Sciences) - Carcinoid tumor, stomach
Florida (Jackson Memorial Hospital) - Well-differentiated neuroendocrine tumors
Florida (Tallahassee Pathology Associates) - WDNET/carcinoid
Florida (Winter Haven Hospital) - Malignant carcinoid (2)
Illinois, Burr Ridge - Neuroendocrine tumor
Illinois (Loyola University Medical Center) - Neuroendocrine carcinoma
Indiana (Howard Regional Medical Center) - Carcinoid
Louisiana (Louisiana State University Health Science Center) - Carcinoid (2)
Maryland (Northwest Hospital Center) - Neuroendocrine tumor
Maryland (University of Maryland) - Well-differentiated neuroendocrine carcinoma
Massachusetts (Berkshire Medical Center) - Carcinoid tumor
Massachusetts (Tufts-New England Medical Center Residents) - Neuroendocrine carcinoma well-differentiated (atypical carcinoid)
Michigan (Oakwood Hospital) - Gastric endocrine tumor
Minnesota (Fairview Ridges Hospital) - Gastric neuroendocrine tumor (carcinoid)
Montana, Missoula - Carcinoid tumor
Nebraska (Creighton University) - Carcinoid
New York (Nassau University Medical Center) - Carcinoid tumor, gastric
New York (SUNY Downstate Residents) - Carcinoid tumor (2)
North Carolina (Mountain Area Pathology) - Carcinoid tumor (3)
North Carolina (Pathologists Medical Laboratory) - Gastric carcinoid (1); Neuroendocrine carcinoma (1)
Ohio (McCullough-Hyde Memorial Hospital) - Islet cell tumor/neuroendocrine
Pennsylvania (Conemaugh Memorial Medical Center) - Carcinoid tumor
Pennsylvania (Drexel University College of Medicine) - Gastric carcinoid tumor
Pennsylvania (Lehigh Valley Hospital) - Carcinoid
Pennsylvania (Mt. Nittany Medical Center) - Carcinoid tumor, stomach
Pennsylvania (Pennsylvania Hospital Residents) - Neuroendocrine carcinoma
Puerto Rico (University of Puerto Rico) - Well-differentiated gastric endocrine neoplasm
Texas, Lubbock - Carcinoid tumor
Texas (Methodist Hospital) - Carcinoid
Texas (ProPath Services) - Carcinoid tumor
Texas (Scott & White Memorial Hospital) - Carcinoid
West Virginia (Greenbrier Valley Medical Center) - Gastric adenocarcinoma
West Virginia (Wetzel County Hospital) - Carcinoid
Australia (Queensland Pathology Group) - Atypical carcinoid
Australia (Royal Hobart Hospital) - Neuroendocrine carcinoma stomach (type III carcinoid)
Australia (Royal Prince Alfred Hospital) - Carcinoid tumour
Australia (Sullivan Nicolaides Pathology) - Well-differentiated neuroendocrine tumor (carcinoid)

Canada (Pasquo Hospital) - Carcinoid tumor
Canada (Sherbrooke University Hospital) - Well-differentiated neuroendocrine tumor (carcinoid)
Germany (Institut fur Pathologie UKE) - Neuroendocrine carcinoma
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Carcinoid tumor
Ireland (Kerry General Hospital) - Well-differentiated neuroendocrine tumor (carcinoid)
Japan (Kyoto University Hospital) - Carcinoid tumor
Qatar (Hamad Medical Corporation) - Carcinoid tumor
Saudi Arabia (King Fahad National Guard Hospital) - Neuroendocrine tumor, benign
Saudi Arabia (MCH) - Carcinoid tumor
Singapore (KK Women's and Children's Hospital) - Well-differentiated endocrine neoplasm (carcinoid)
The Netherlands, Amstelveen - Large cell neuroendocrine carcinoma of the stomach
United Kingdom (Oxford Study Group) - Stomach wall neuroendocrine carcinoma

Case 1 - Diagnosis:
Carcinoid tumor (low grade neuroendocrine carcinoma), stomach
T-63000, M-82401

Case 1 – References:

Mulkeen A and Cha A. Gastric Carcinoid. *Current Opinion in Oncology* 2005; 17(1):1-6.
Borch K, Ahren B, Ahlman H, et al. Gastric Carcinoids. Biologic Behavior and Prognosis After Differentiated Treatment in Relation to Type. *Ann Surg* 2005; 242(1):64-73.
Modlin IM, Lye KD and Kidd M. A 50-Year Analysis of 562 Gastric Carcinoids. Small Tumor or Larger Problem? *Am J Gastroenterol* 2004; 99(1):23-32.
Jiang SX, Mikami T, Umezawa A. et al. Gastric Large Cell Neuroendocrine Carcinomas. A Distinct Clinicopathologic Entity. *Am J Surg Pathol* 2006; 30(8):945-953.

Case No. 2, Accession No. 30360 October 2006

Alameda (Alameda County Medical Center) - Solid pseudopapillary tumor
Baldwin Park (Kaiser Permanente) - Solid pseudopapillary tumor (4)
Fontana (Kaiser Permanente) - Solid and pseudopapillary tumor of pancreas
Granada Hills - Cystic endocrine tumor
Hayward/Fremont - Solid pseudopapillary tumor
La Jolla (Scripps Clinic Hematopathology Fellowship) - Solid-pseudopapillary tumor (pancreas)
La Jolla (Scripps Health) - Solid-pseudopapillary tumor of the pancreas
Long Beach (VA Long Beach Health System) - Solid pseudopapillary tumor
Monterey (Community Hospital of the Monterey Peninsula) - Solid pseudopapillary tumor
Monterey Park (Garfield Medical Center) - Solid pseudopapillary tumor
Orange (Orange County Medical Group) - Solid pseudopapillary tumor
Orange County (Kaiser Permanente) - Solid cystic pseudopapillary tumor
Orange (University of California Irvine Residents) - Solid pseudopapillary tumor
Oxnard (St. John's Regional Medical Center) - Endocrine carcinoma, NOS (2); Endocrine neoplasm (2); Pancreatic endocrine neoplasm (1);
Rancho Mirage (Eisenhower Medical Center) - Solid pseudopapillary tumor
Sacramento (UC Davis Residents) - Solid pseudopapillary tumor
San Diego (Naval Medical Center) - Medullary thyroid carcinoma
San Diego (UCSD Medical Center) - Solid and cystic pseudopapillary tumor
San Francisco (San Francisco General Hospital) - Solid pseudopapillary tumor
San Francisco (UCSF Residents) - Solid/pseudopapillary tumor
Santa Rosa (Santa Rosa Memorial Hospital) - Solid pseudopapillary neoplasm (3)
Woodland Hills (Kaiser Permanente Medical Center) - Solid-pseudopapillary tumor
Woodland Hills (Suda's Soldiers) - Solid and pseudopapillary epithelial neoplasm
Arkansas (University of Arkansas for Medical Sciences) - Solid pseudopapillary tumor, pancreas
Florida (Jackson Memorial Hospital) - Solid pseudopapillary tumor of the pancreas

Florida (Tallahassee Pathology Associates) - SPPT, Solid pseudopapillary tumor of pancreas
Florida (Winter Haven Hospital) - Solid pseudopapillary tumor (2)
Illinois, Burr Ridge - Solid and pseudopapillary tumor
Illinois (Loyola University Medical Center) - Solid pseudopapillary tumor of pancreas
Indiana (Howard Regional Medical Center) - Solid pseudopapillary tumor
Louisiana (Louisiana State University Health Science Center) - Solid pseudopapillary tumor (2)
Maryland (Northwest Hospital Center) - Solid and pseudopapillary tumor
Maryland (University of Maryland) - Solid pseudopapillary tumor
Massachusetts (Berkshire Medical Center) - Islet cell tumor
Massachusetts (Tufts-New England Medical Center Residents) - Pseudopapillary tumor, pancreas
Michigan (Oakwood Hospital) - Solid cystic-papillary neoplasm
Minnesota (Fairview Ridges Hospital) - Pancreatic endocrine neoplasm
Montana, Missoula - Solid cystic papillary tumor
Nebraska (Creighton University) - Solid pseudopapillary tumor
New York (Nassau University Medical Center) - Solid cystic papillary epithelial neoplasm, pancreas
New York (SUNY Downstate Residents) - Cystic solid papillary carcinoma (1); Solid pseudopapillary tumor of the pancreas (1)
North Carolina (Mountain Area Pathology) - Solid pseudopapillary tumor (3)
North Carolina (Pathologists Medical Laboratory) - Solid cystic papillary epithelial neoplasm (1); Pancreatic endocrine tumor (1)
Ohio (McCullough-Hyde Memorial Hospital) - Pancreatoblastoma
Pennsylvania (Conemaugh Memorial Medical Center) - Solid pseudopapillary tumor of pancreas
Pennsylvania (Drexel University College of Medicine) - Solid pseudopapillary tumor
Pennsylvania (Lehigh Valley Hospital) - Solid pseudopapillary tumor
Pennsylvania (Mt. Nittany Medical Center) - Solid psudopapillary tumor, pancreas
Pennsylvania (Pennsylvania Hospital Residents) - Gastrinoma
Puerto Rico (University of Puerto Rico) - Solid cystic papillary epithelial neoplasm
Texas, Lubbock - Islet cell tumor
Texas (Methodist Hospital) - Solid pseudopapillary tumor
Texas (ProPath Services) - Solid pseudopapillary tumor
Texas (Scott & White Memorial Hospital) - Solid pseudopapillary neoplasm
West Virginia (Greenbrier Valley Medical Center) - Ductal pancreatic adenocarcinoma
West Virginia (Wetzel County Hospital) - Solid-cystic papillary epithelial neoplasm
Australia (Queensland Pathology Group) - Pancreatic endocrine carcinoma
Australia (Royal Hobart Hospital) - Solid pseudopapillary neoplasm pancreas
Australia (Royal Prince Alfred Hospital) - Solid-pseudopapillary neoplasm
Australia (Sullivan Nicolaides Pathology) - Solid pseudopapillary neoplasm, pancreas
Canada (Pasquo Hospital) - Solid cystic papillary neoplasm
Canada (Sherbrooke University Hospital) - Pancreatic endocrine neoplasm
Germany (Institut fur Pathologie UKE) - Solid pseudopapillary tumor
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Solid pseudopapillary tumor of pancreas
Ireland (Kerry General Hospital) - Pancreatic endocrine neoplasm
Japan (Kyoto University Hospital) - Solid-pseudopapillary neoplasm
Qatar (Hamad Medical Corporation) - Solid cystic papillary neoplasm of pancreas
Saudi Arabia (King Fahad National Guard Hospital) - Solid pseudopapillary
Saudi Arabia (MCH) - Papillary and solid epithelial neoplasm
Singapore (KK Women's and Children's Hospital) - Solid pseudopapillary neoplasm
The Netherlands, Amstelveen - Solid pseudopapillary tumor of the pancreas
United Kingdom (Oxford Study Group) - Pancreas, solid pseudopapillary tumor

Case 2 - Diagnosis:

Solid-Pseudopapillary tumor, pancreas

T-59000, M-03090

Case 2 - References:

Notohara K, Hamazaki S, Tsukayama C, et al. Solid-Pseudopapillary Tumor of the Pancreas. Immunohistochemical Localization of Neuroendocrine Markers and CD10l *Am J of Surg Pathol* 2000; 24(10):1361-1371.

Klimstra DS, Wenig BM and Heffess CS. Solid-Pseudopapillary Tumor of the Pancreas. A Typically Cystic Carcinoma of Low Malignant Potential. *Sem in Diagnostic Pathol* 2000; 17(1):66-80.

Seo HE, Lee MK Lee YD, et al. Solid-Pseudopapillary Tumor of the Pancreas. *J Clin Gastroenterol* 2006; 40(10):919-922.

Geers C, Pierre M, Jean-Francois G, et al. Solid and Pseudopapillary Tumor of the Pancreas. Review and New Insights into Pathogenesis. *Am J Surg Pathol* 2006; 30(10):1243-1249.

Frankel WL. Update on Pancreatic Endocrine Tumors. *Arch Pathol Lab Med* 2006; 130(7):963-966.

Case No. 3, Accession No. 30341 October 2006

Alameda (Alameda County Medical Center) - Extra adrenal paraganglioma
Baldwin Park (Kaiser Permanente) - Paraganglioma (4)
Fontana (Kaiser Permanente) - Paraganglioma, neck
Granada Hills - Metastatic neuroendocrine tumor
Hayward/Fremont - Paraganglioma
La Jolla (Scripps Clinic Hematopathology Fellowship) - Paraganglioma (carotid body tumor)
La Jolla (Scripps Health) - Carotid body tumor
Long Beach (VA Long Beach Health System) - Paraganglioma
Monterey (Community Hospital of the Monterey Peninsula) - Paraganglioma (carotid body tumor)
Monterey Park (Garfield Medical Center) - Paraganglioma
Orange (Orange County Medical Group) - Paraganglioma
Orange County (Kaiser Permanente) - Paraganglioma
Orange (University of California Irvine Residents) - Paraganglioma
Oxnard (St. John's Regional Medical Center) - Paraganglioma (5)
Rancho Mirage (Eisenhower Medical Center) - Carotid body tumor
Sacramento (UC Davis Residents) - Carotid body tumor
San Diego (Naval Medical Center) - Extra-adrenal paraganglioma
San Diego (UCSD Medical Center) - Paraganglioma
San Francisco (San Francisco General Hospital) - Paraganglioma
San Francisco (UCSF Residents) - Paraganglioma (carotid body tumor)
Santa Rosa (Santa Rosa Memorial Hospital) - Paraganglioma (3)
Woodland Hills (Kaiser Permanente Medical Center) - Paraganglioma
Woodland Hills (Suda's Soldiers) - Paraganglioma
Arkansas (University of Arkansas for Medical Sciences) - Carotid body paraganglioma, neck
Florida (Jackson Memorial Hospital) - Paraganglioma
Florida (Tallahassee Pathology Associates) - Medullary carcinoma
Florida (Winter Haven Hospital) - Paraganglioma (2)
Illinois, Burr Ridge - Paraganglioma (chemodectoma)
Illinois (Loyola University Medical Center) - Paraganglioma
Indiana (Howard Regional Medical Center) - Mucoepidermoid carcinoma
Louisiana (Louisiana State University Health Science Center) - Paraganglioma (2)
Maryland (Northwest Hospital Center) - Paraganglioma
Maryland (University of Maryland) - Paraganglioma
Massachusetts (Berkshire Medical Center) - Paraganglioma
Massachusetts (Tufts-New England Medical Center Residents) - Paraganglioma (rule out metastatic medullary thyroid carcinoma)
Michigan (Oakwood Hospital) - Paraganglioma
Minnesota (Fairview Ridges Hospital) - Paraganglioma
Montana, Missoula - Paraganglioma
Nebraska (Creighton University) - Carotid body paraganglioma
New York (Nassau University Medical Center) - Carotid body tumor
New York (SUNY Downstate Residents) - Medullary carcinoma (1); Paraganglioma (1)
North Carolina (Mountain Area Pathology) - Paraganglioma (1); Insular carcinoma, rule out medullary carcinoma (1); Neuroendocrine carcinoma, medullary thyroid vs. ? (1)
North Carolina (Pathologists Medical Laboratory) - Carotid body neurofibroma (2)
Ohio (McCullough-Hyde Memorial Hospital) - Carotid body tumor
Pennsylvania (Conemaugh Memorial Medical Center) - Paraganglioma

Pennsylvania (Drexel University College of Medicine) - Paraganglioma
Pennsylvania (Lehigh Valley Hospital) - Chemodectoma
Pennsylvania (Mt. Nittany Medical Center) - Paraganglioma (carotid body tumor), right neck
Pennsylvania (Pennsylvania Hospital Residents) - Paraganglioma
Puerto Rico (University of Puerto Rico) - Carotid body tumor
Texas, Lubbock - Paraganglioma
Texas (Methodist Hospital) - Paraganglioma
Texas (ProPath Services) - Paraganglioma
Texas (Scott & White Memorial Hospital) - Paraganglioma
West Virginia (Greenbrier Valley Medical Center) - Carotid body tumor
West Virginia (Wetzel County Hospital) - Paraganglioma
Australia (Queensland Pathology Group) - Malignant peripheral nerve sheath tumor
Australia (Royal Hobart Hospital) - Paraganglioma
Australia (Royal Prince Alfred Hospital) - Paraganglioma
Australia (Sullivan Nicolaides Pathology) - Paraganglioma (carotid body tumor)
Canada (Pasquo Hospital) - Paraganglioma
Canada (Sherbrooke University Hospital) - Paraganglioma
Germany (Institut fur Pathologie UKE) - Paraganglioma
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Paraganglioma
Ireland (Kerry General Hospital) - Paraganglioma (chemodectoma)
Japan (Kyoto University Hospital) - Paraganglioma (glomus jugulare tumor)
Qatar (Hamad Medical Corporation) - Paraganglioma
Saudi Arabia (King Fahad National Guard Hospital) - Paraganglioma
Saudi Arabia (MCH) - Paraganglioma
Singapore (KK Women's and Children's Hospital) - Paraganglioma
The Netherlands, Amstelveen - Paraganglioma of the head and neck
United Kingdom (Oxford Study Group) - Paraganglioma (carotid body tumor)

Case 3 – Diagnosis:

Paraganglioma (carotid body tumor), neck
T-Y0600, M-86801

Case 3 - References:

Elder EE, Elder G and Larsson C. Pheochromocytoma and Functional Paraganglioma Syndrome. No Longer the 10% Tumor. *J of Surg Oncol* 2005; 18(1):193-201.

Dahia PL. Evolving Concepts in Pheochromocytoma and Paraganglioma. *Current Opinion in Oncology* 2006; 18(1):1-8.

Plaza JA, Wakely PE Jr., Moran C, et al. Sclerosing Paraganglioma. Report of 19 Cases of an Unusual Variant of Neuroendocrine Tumor That May Be Mistaken for an Aggressive Malignant Neoplasm. *Am J of Surg Pathol* 2006; 30(1):7-12.

Douwes Dekker PB, Kuipers-Kijkshoorn NJ, Baelde HJ, et al. Basic Fibroblast Growth Factor and Fibroblastic Growth Factor Receptor-1 May Contribute to Head and Neck Paraganglioma Development by an Autocrine or Paracrine Mechanism. *Hum Pathol* 2006; (8).

Atefi S, Nikeghbalian S, Yarmohammadi H, et al. Surgical Management of Carotid Body Tumours. A 24-Year Surgical Experience. *ANZ J Surg* 2006; 76(4):214-217.

Case No. 4, Accession No. 30343 October 2006

Alameda (Almeda County Medical Center) - Ganglioneuroma
Baldwin Park (Kaiser Permanente) - Ganglioneuroma (4)
Fontana (Kaiser Permanente) - Ganglioneuroma, adrenal gland
Granada Hills - Ganglioneuroma
Hayward/Fremont - Ganglioneuroma, mature
La Jolla (Scripps Clinic Hematopathology Fellowship) - Ganglioneuroma
La Jolla (Scripps Health) - Ganglioneuroblastoma
Long Beach (VA Long Beach Health System) - Ganglioneuroma
Monterey (Community Hospital of the Monterey Peninsula) - Ganglioneuroma
Monterey Park (Garfield Medical Center) - Ganglioneuroma
Orange (Orange County Medical Group) - Ganglioneuroma
Orange County (Kaiser Permanente) - Ganglioneuroma

Orange (University of California Irvine Residents) - Ganglioneuroma
Oxnard (St. John's Regional Medical Center) - Ganglioneuroma (5)
Rancho Mirage (Eisenhower Medical Center) - Ganglioneuroma
Sacramento (UC Davis Residents) - Ganglioneuroma
San Diego (Naval Medical Center) - Ganglioneuroma
San Diego (UCSD Medical Center) - Ganglioneuroma
San Francisco (San Francisco General Hospital) - Ganglioglioma
San Francisco (UCSF Residents) - Ganglioneuroma
Santa Rosa (Santa Rosa Memorial Hospital) - Ganglioneuroma (3)
Woodland Hills (Kaiser Permanente Medical Center) - Ganglioneuroma
Woodland Hills (Suda's Soldiers) - Ganglioneuroma
Arkansas (University of Arkansas for Medical Sciences) - Ganglioneuroma, adrenal gland
Florida (Jackson Memorial Hospital) - Ganglioneuroma
Florida (Tallahassee Pathology Associates) - Ganglioneuroma
Florida (Winter Haven Hospital) - Ganglioneuroma (2)
Illinois, Burr Ridge - Ganglioneuroma
Illinois (Loyola University Medical Center) - Ganglioneuroma
Indiana (Howard Regional Medical Center) - (Plexiform) neurofibroma
Louisiana (Louisiana State University Health Science Center) - Ganglioneuroma (2)
Maryland (Northwest Hospital Center) - Ganglioneuroma
Maryland (University of Maryland) - Ganglioneuroma
Massachusetts (Berkshire Medical Center) - Ganglioneuroma
Massachusetts (Tufts-New England Medical Center Residents) - Ganglioneuroma, adrenal
Michigan (Oakwood Hospital) - Ganglioneuroma
Minnesota (Fairview Ridges Hospital) - Ganglioneuroma
Montana, Missoula - Ganglioneuroma
Nebraska (Creighton University) - Ganglioneuroma
New York (Nassau University Medical Center) - Ganglioneuroma, adrenal
New York (SUNY Downstate Residents) - Ganglioneuroma, mature (2)
North Carolina (Mountain Area Pathology) - Ganglioneuroma (3)
North Carolina (Pathologists Medical Laboratory) - Adrenal neurofibroma (1); Ganglioneuroma (1)
Ohio (McCullough-Hyde Memorial Hospital) - Ganglioneuroma
Pennsylvania (Conemaugh Memorial Medical Center) - Ganglioneuroma
Pennsylvania (Drexel University College of Medicine) - Ganglioneuroma
Pennsylvania (Lehigh Valley Hospital) - Ganglioneuroma
Pennsylvania (Mt. Nittany Medical Center) - Ganglioneuroma, adrenal gland
Pennsylvania (Pennsylvania Hospital Residents) - Neurofibroma
Puerto Rico (University of Puerto Rico) - Ganglioneuroma
Texas, Lubbock - Ganglioneuroma
Texas (Methodist Hospital) - Ganglioneuroma
Texas (ProPath Services) - Mature ganglioneuroma
Texas (Scott & White Memorial Hospital) - Ganglioneuroma
West Virginia (Greenbrier Valley Medical Center) - Primary adrenal neurofibroma
West Virginia (Wetzel County Hospital) - Ganglioneuroma
Australia (Queensland Pathology Group) - Neurofibroma
Australia (Royal Hobart Hospital) - Ganglioneuroma, adrenal
Australia (Royal Prince Alfred Hospital) - Ganglioneuroma
Australia (Sullivan Nicolaides Pathology) - Ganglioneuroma
Canada (Pasquo Hospital) - Ganglioneuroma
Canada (Sherbrooke University Hospital) - Ganglioneuroma
Germany (Institut fur Pathologie UKE) - Ganglioneuroma
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Ganglioneuroma
Ireland (Kerry General Hospital) - Ganglioneuroma
Japan (Kyoto University Hospital) - Ganglioneuroma
Qatar (Hamad Medical Corporation) - Ganglioneuroma
Saudi Arabia (King Fahad National Guard Hospital) - Ganglioneuroma
Saudi Arabia (MCH) - Ganglioneuroma
Singapore (KK Women's and Children's Hospital) - Ganglioneuroma
The Netherlands, Amstelveen - Ganglioneuroma of the adrenal gland
United Kingdom (Oxford Study Group) - Adrenal, ganglioneuroma

Case 4 - Diagnosis:

Ganglioneuroma, adrenal gland
T-93000, M-94900

Case 4- References:

Domanski HA. Fine-Needle Aspiration of Ganglioneuroma. *Diag Cytopathol* 2005; 32(6):363-366.

Merchant SH, Herman CM, Amin MB, et al. Myelolipoma Associated with Adrenal Ganglioneuroma. *Arch of Pathol & Lab Med* 2002; 126(6):736-737.

Zografos GN, Markou A, Ageli C, et al. Laparoscopic Surgery for Adrenal Tumors. A Retrospective Analysis. *Hormones* 2006; 5(1):52-56.

Stasik CN, Giordano TJ and Gauger PG. Ganglioneuroma Manifesting as an Incidental Adrenal Mass in an Adult with Turner's Syndrome. *Endocr Pract* 2005; 11(6):382-384.

Lora MS, Waguespack SG, Moley JF, et al. Adrenal Ganglioneuromas in Children with Multiple Endocrine Neoplasia Type 2. A Report of Two Cases. *J Clin Endocrinol Metab* 2005; 90(7):4383-4387.

Case No. 5, Accession No. 30118 October 2006

Alameda (Alameda County Medical Center) - Insulinoma

Baldwin Park (Kaiser Permanente) - Islet cell tumor with amyloid (4)

Fontana (Kaiser Permanente) - Islet cell tumor, pancreas

Granada Hills - Paraganglioma

Hayward/Fremont - Pancreatic neuroendocrine tumor with amyloid stroma

La Jolla (Scripps Clinic Hematopathology Fellowship) - Pancreatic endocrine neoplasm with amyloid deposition, favor insulinoma

La Jolla (Scripps Health) - Pancreatic endocrine neoplasm (favor insulinoma)

Long Beach (VA Long Beach Health System) - Islet cell tumor consistent with insulinoma

Monterey (Community Hospital of the Monterey Peninsula) - Islet cell tumor (amyloid suggests insulinoma)

Monterey Park (Garfield Medical Center) - Carcinoid consistent with amyloid

Orange (Orange County Medical Group) - Islet cell tumor

Orange County (Kaiser Permanente) - Neuroendocrine tumor, islet cell

Orange (University of California Irvine Residents) - Pancreatic endocrine tumor with amyloid

Oxnard (St. John's Regional Medical Center) - Poorly differentiated endocrine carcinoma (2); Endocrine carcinoma (2); Pancreatic endocrine neoplasm (1)

Rancho Mirage (Eisenhower Medical Center) - Pancreatic endocrine tumor

Sacramento (UC Davis Residents) - Pancreatic neuroendocrine tumor

San Diego (Naval Medical Center) - Insulinoma

San Diego (UCSD Medical Center) - Pancreatic neuroendocrine tumor

San Francisco (San Francisco General Hospital) - Islet cell tumor

San Francisco (UCSF Residents) - Pancreatic neuroendocrine neoplasm (insulinoma)

Santa Rosa (Santa Rosa Memorial Hospital) - Pancreatic islet cell tumor with amyloid (3)

Woodland Hills (Kaiser Permanente Medical Center) - Endocrine tumor with amyloid

Woodland Hills (Suda's Soldiers) - Pancreatic endocrine neoplasm (insulinoma)

Arkansas (University of Arkansas for Medical Sciences) - Pancreatic neuroendocrine tumor with amyloid deposition

Florida (Jackson Memorial Hospital) - Islet cell tumor with amyloid deposition

Florida (Tallahassee Pathology Associates) - Medullary carcinoma

Florida (Winter Haven Hospital) - Pancreatic endocrine cell neoplasm (2)

Illinois, Burr Ridge - Neuroendocrine tumor with amyloid deposit

Illinois (Loyola University Medical Center) - Pancreatic neuroendocrine neoplasm with amyloidosis

Indiana (Howard Regional Medical Center) - Carcinoid with amyloid

Louisiana (Louisiana State University Health Science Center) - Islet cell tumor (1); Carcinoid (Vipoma) (1)

Maryland (Northwest Hospital Center) - Neuroendocrine tumor with massive amyloid

Maryland (University of Maryland) - Well-differentiated neuroendocrine tumor, low grade malignant (insulinoma)

Massachusetts (Berkshire Medical Center) - Islet cell tumor, probable isulinoma
Massachusetts (Tufts-New England Medical Center Residents) - Pancreatic endocrine tumor, non-functional (WHO)
Michigan (Oakwood Hospital) - Pancreatic endocrine tumor
Minnesota (Fairview Ridges Hospital) - Amyloidoma/NET
Montana, Missoula - Insulinoma
Nebraska (Creighton University) - Islet cell tumor of pancreas
New York (Nassau University Medical Center) - Endocrine tumor with amyloid deposit
New York (SUNY Downstate Residents) - Endocrine neoplasm, insulinoma (1); Pancreatic endocrine tumor rule out medullary thyroid carcinoma (1)
North Carolina (Mountain Area Pathology) - Pancreatic endocrine tumor (2); Pancreatic endocrine tumor, possible insulinoma (1)
North Carolina (Pathologists Medical Laboratory) - Pancreatic endocrine tumor carcinoma/insulinoma (2)
Ohio (McCullough-Hyde Memorial Hospital) - Islet cell tumor with stromal amyloid deposits
Pennsylvania (Conemaugh Memorial Medical Center) - Neuroendocrine (islet cell) tumor with amyloid deposition
Pennsylvania (Drexel University College of Medicine) - Insulinoma
Pennsylvania (Lehigh Valley Hospital) - Islet cell neoplasm
Pennsylvania (Mt. Nittany Medical Center) - Islet cell tumor (pancreatic endocrine neoplasm) with islet amyloid polypeptide (I APP)
Pennsylvania (Pennsylvania Hospital Residents) - Insulinoma
Puerto Rico (University of Puerto Rico) - Pancreatic endocrine neoplasm
Texas, Lubbock - Islet cell tumor
Texas (Methodist Hospital) - Islet cell tumor
Texas (ProPath Services) - Neuroendocrine (islet cell) tumor
Texas (Scott & White Memorial Hospital) - Pancreatic neuroendocrine tumor
West Virginia (Greenbrier Valley Medical Center) - Amyloid in a well-differentiated pancreatic endocrine carcinoma
West Virginia (Wetzel County Hospital) - Endocrine neoplasm
Australia (Queensland Pathology Group) - Well-differentiated endocrine carcinoma-trabecular varient
Australia (Royal Hobart Hospital) - Pancreatic endocrine neoplasm with extensive amyloid deposition
Australia (Royal Prince Alfred Hospital) - Pancreatic endocrine neoplasm, favor insulinoma
Australia (Sullivan Nicolaides Pathology) - Amyloidosis associated with a pancreatic endocrine neoplasm
Canada (Pasquo Hospital) - Pancreatic endocrine neoplasm probable insulinoma
Canada (Sherbrooke University Hospital) - Pancreatic endocrine neoplasm, insulinoma
Germany (Institut fur Pathologie UKE) - Neuroendocrine carcinoma
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Pancreatic endocrine tumor, insulinoma
Ireland (Kerry General Hospital) - Neuroendocrine neoplasm of uncertain histogenesis
Japan (Kyoto University Hospital) - Islet cell tumor with amyloid deposit
Qatar (Hamad Medical Corporation) - Pancreatic endocrine neoplasm, insulinoma
Saudi Arabia (King Fahad National Guard Hospital) - Islet cell tumor of pancreas (insulinoma)
Saudi Arabia (MCH) - Islet cell tumor (insulinoma)
Singapore (KK Women's and Children's Hospital) - Well-differentiated pancreatic endocrine tumor (insulinoma)
The Netherlands, Amstelveen - Pancreatic endocrine neoplasm with amyloidosis
United Kingdom (Oxford Study Group) - Pancreatic endocrine neoplasm (insulinoma)

Case 5 - Diagnosis:

Pancreatic endocrine neoplasm (islet cell tumor)
Directors Note: Some slides showed amyloid stroma. (drc)
T-59000, M-81500

Case 5 - References:

House MG and Schulick RD. Endocrine Tumors of the Pancreas. *Curr Opin* 2006; 18(1):23-29.
Chetty R and Asa SL. Ductules in Pancreatic Neuroendocrine Tumors. *Am J Surg Pathol* 2003; 27(4):461-468.
Brentjens R and Saltz L. Islet Cell Tumors of the Pancreas. The Medical Oncologist's Perspective. *Surg Clin of North Amer* 2001; 81(3):527-542.
Azimuddin K and Chamberlain RS. The Surgical Management of Pancreatic Neuroendocrine Tumors. *Surg Clin of North Amer* 2001; 81(3):511-525
Frankel WL. Update on Pancreatic Endocrine Tumors. *Arch Pathol Lab Med* 2006; 130(7):963-966.

Alameda County Medical Center) - Pheochromocytoma
Baldwin Park (Kaiser Permanente) - Pheochromocytoma (4)
Fontana (Kaiser Permanente) - Pheochromocytoma, adrenal gland
Granada Hills - Oncocytoma
Hayward/Fremont - Pheochromocytoma
La Jolla (Scripps Clinic Hematopathology Fellowship) - Pheochromocytoma
La Jolla (Scripps Health) - Pheochromocytoma
Long Beach (VA Long Beach Health System) - Pheochromocytoma
Monterey (Community Hospital of the Monterey Peninsula) - Pheochromocytoma
Monterey Park (Garfield Medical Center) - Pheochromocytoma
Orange (Orange County Medical Group) - Pheochromocytoma
Orange County (Kaiser Permanente) - Pheochromocytoma
Orange (University of California Irvine Residents) - Pheochromocytoma
Oxnard (St. John's Regional Medical Center) - Pheochromocytoma (5)
Rancho Mirage (Eisenhower Medical Center) - Pheochromocytoma
Sacramento (UC Davis Residents) - Pheochromocytoma
San Diego (Naval Medical Center) - Pheochromocytoma
San Diego (UCSD Medical Center) - Pheochromocytoma
San Francisco (San Francisco General Hospital) - Pheochromocytoma
San Francisco (UCSF Residents) - Pheochromocytoma
Santa Rosa (Santa Rosa Memorial Hospital) - Pheochromocytoma (3)
Woodland Hills (Kaiser Permanente Medical Center) - Pheochromocytoma
Woodland Hills (Suda's Soldiers) - Pheochromocytoma
Arkansas (University of Arkansas for Medical Sciences) - Pheochromocytoma, adrenal gland
Florida (Jackson Memorial Hospital) - Pheochromocytoma
Florida (Tallahassee Pathology Associates) - Pheochromocytoma
Florida (Winter Haven Hospital) - Pheochromocytoma (2)
Illinois, Burr Ridge - Pheochromocytoma
Illinois (Loyola University Medical Center) - Pheochromocytoma
Indiana (Howard Regional Medical Center) - Ganglioneuroma
Louisiana (Louisiana State University Health Science Center) - Pheochromcytoma (2)
Maryland (Northwest Hospital Center) - Pheochromocytoma
Maryland (University of Maryland) - Pheochromocytoma
Massachusetts (Berkshire Medical Center) - Pheochromocytoma
Massachusetts (Tufts-New England Medical Center Residents) - Pheochromocytoma, adrenal
Michigan (Oakwood Hospital) - Pheochromocytoma
Minnesota (Fairview Ridges Hospital) - Pheochromocytoma
Montana, Missoula - Pheochromocytoma
Nebraska (Creighton University) - Pheochromocytoma
New York (Nassau University Medical Center) - Pheochromocytoma
New York (SUNY Downstate Residents) - Pheochromocytoma (2)
North Carolina (Mountain Area Pathology) - Pheochromocytoma (3)
North Carolina (Pathologists Medical Laboratory) - Pheochromocytoma (2)
Ohio (McCullough-Hyde Memorial Hospital) - Malignant pheochromocytoma
Pennsylvania (Conemaugh Memorial Medical Center) - Pheochromocytoma
Pennsylvania (Drexel University College of Medicine) - Pheochromocytoma
Pennsylvania (Lehigh Valley Hospital) - Pheochromocytoma
Pennsylvania (Mt. Nittany Medical Center) - Adrenocortical carcinoma
Pennsylvania (Pennsylvania Hospital Residents) - Pheochromocytoma
Puerto Rico (University of Puerto Rico) - Pheochromocytoma
Texas, Lubbock - Pheochromocytoma
Texas (Methodist Hospital) - Pheochromocytoma
Texas (ProPath Services) - Adrenal pheochromocytoma
Texas (Scott & White Memorial Hospital) - Pheochromocytoma
West Virginia (Greenbrier Valley Medical Center) - Pheochromocytoma
West Virginia (Wetzel County Hospital) - Cortical adenoma
Australia (Queensland Pathology Group) - Pheochromocytoma
Australia (Royal Hobart Hospital) - Pheochromocytoma
Australia (Royal Prince Alfred Hospital) - Pheochromocytoma

Australia (Sullivan Nicolaides Pathology) - Pheochromocytoma
Canada (Pasquo Hospital) - Pheochromocytoma
Canada (Sherbrooke University Hospital) - Pheochromocytoma
Germany (Institut fur Pathologie UKE) - Pheochromocytoma
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Pheochromocytoma
Ireland (Kerry General Hospital) - Pheochromocytoma
Japan (Kyoto University Hospital) - Pheochromocytoma
Qatar (Hamad Medical Corporation) - Pheochromocytoma
Saudi Arabia (King Fahad National Guard Hospital) - Pheochromocytoma
Saudi Arabia (MCH) - Pheochromocytoma
Singapore (KK Women's and Children's Hospital) - Pheochromocytoma
The Netherlands, Amstelveen - Pheochromocytoma of the adrenal gland
United Kingdom (Oxford Study Group) - Adrenal pheochromocytoma

Case 6 - Diagnosis:

Pheochromocytoma, adrenal
T-93020, M-87000

Case 6 - References:

Amar L, Bertherat J, Baudin E, et al. Genetic Testing in Pheochromocytoma or Functional Garaganglioma. *J of Clin Oncol* 2005; 23(34):8812-8818.

Kimura N, Watanabe T, Noshiro T, et al. Histological Grading of Adrenal and Extra-adrenal Pheochromocytomas and Relationship to Prognosis. A Clinicopathological Analysis of 116 Adrenal Pheochromocytomas and 30 Extra-Adrenal Sympathetic Paragangliomas Including 38 Malignant Tumors. *Endoc Pathol* 2005; 16(1):23-32.

Amar L and Servais A, Gimenez-Roqueplo AP, et al. Year of Diagnosis, Features at Presentation, and Risk of Recurrence in Patients with Pheochromocytoma or Secreting Paraganglioma. *J of Clin Endoc & Metab* 2005; 90(4):2110-2116.

Yeo H and Roman S. Pheochromocytoma and Functional Paraganglioma. *Cur Opin in Oncol* 2005; 17(1):13-18.

Magill SB, Fritsche CM, Klinger DE, et al. Evolution of a Pheochromocytoma. *Endocr Pract* 2006; 12(5):545-551.

Case No. 7, Accession No. 30175 October 2006

Alameda County Medical Center) - Merkel cell carcinoma
Baldwin Park (Kaiser Permanente) - Merkel cell carcinoma vs. metastatic small cell carcinoma (2); Merkel cell tumor (2)
Fontana (Kaiser Permanente) - Merkel cell tumor
Granada Hills - Merkel cell carcinoma
Hayward/Fremont - Merkel cell carcinoma
La Jolla (Scripps Clinic Hematopathology Fellowship) - Merkel cell carcinoma (5); Primitive neuroectodermal tumor (PNET) (2)
Long Beach (VA Long Beach Health System) - Merkel cell carcinoma
Monterey (Community Hospital of the Monterey Peninsula) - Merkel cell carcinoma
Monterey Park (Garfield Medical Center) - Neuroendocrine carcinoma
Orange (Orange County Medical Group) - Merkel cell carcinoma
Orange County (Kaiser Permanente) - Merkel's
Orange (University of California Irvine Residents) - Merkel's cell carcinoma
Oxnard (St. John's Regional Medical Center) - Merkel cell tumor (5)
Rancho Mirage (Eisenhower Medical Center) - Small blue round cell tumor, favor lymphoma
Sacramento (UC Davis Residents) - Merkel cell carcinoma
San Diego (Naval Medical Center) - Merkel cell carcinoma
San Diego (UCSD Medical Center) - Poorly differentiated neuroendocrine carcinoma
San Francisco (San Francisco General Hospital) - Merkel cell tumor
San Francisco (UCSF Residents) - Merkel cell carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Merkel cell carcinoma (3)
Woodland Hills (Kaiser Permanente Medical Center) - Merkel cell carcinoma vs. metastatic small cell carcinoma
Woodland Hills (Suda's Soldiers) - Poorly differentiated malignant neoplasm (Merkel)
Arkansas (University of Arkansas for Medical Sciences) - Neuroendocrine carcinoma, recurrent, cutaneous vs. metastatic, shoulder
Florida (Jackson Memorial Hospital) - Merkel cell tumor
Florida (Tallahassee Pathology Associates) - Merkel cell tumor
Florida (Winter Haven Hospital) - Merkel cell carcinoma (2)
Illinois, Burr Ridge - Merkel cell carcinoma vs. small cell carcinoma

Illinois (Loyola University Medical Center) - Merkel cell carcinoma
Indiana (Howard Regional Medical Center) - Merkel cell carcinoma
Louisiana (Louisiana State University Health Science Center) - Merkel cell carcinoma vs. metastatic small cell carcinoma (1); Small cell carcinoma (Azzopardi effect) (1)
Maryland (Northwest Hospital Center) - Merkel cell carcinoma
Maryland (University of Maryland) - Merkel cell carcinoma
Massachusetts (Berkshire Medical Center) - Merkel cell carcinoma
Massachusetts (Tufts-New England Medical Center Residents) - Merkel cell carcinoma
Michigan (Oakwood Hospital) - Merkel cell carcinoma
Minnesota (Fairview Ridges Hospital) - Neuroendocrine carcinoma (small cell carcinoma)
Montana, Missoula - Merkel cell carcinoma
Nebraska (Creighton University) - Merkel cell carcinoma
New York (Nassau University Medical Center) - Merkel's cell carcinoma
New York (SUNY Downstate Residents) - Merkel cell carcinoma (1); Cutaneous neuroendocrine carcinoma (Merkel cell carcinoma) (1)
North Carolina (Mountain Area Pathology) - Small cell carcinoma, possible Merkel cell carcinoma (3)
North Carolina (Pathologists Medical Laboratory) - Peripheral primitive neuroectodermal tumor (1); Merkel cell carcinoma (1)
Ohio (McCullough-Hyde Memorial Hospital) - Merkel cell carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Merkel cell carcinoma
Pennsylvania (Drexel University College of Medicine) - Small cell carcinoma/Merkel cell carcinoma
Pennsylvania (Lehigh Valley Hospital) - Merkel cell tumor
Pennsylvania (Mt. Nittany Medical Center) - Merkel cell carcinoma, right shoulder
Pennsylvania (Pennsylvania Hospital Residents) - Merkel cell carcinoma
Puerto Rico (University of Puerto Rico) - Neuroendocrine carcinoma
Texas, Lubbock - Merkel cell tumor
Texas (Methodist Hospital) - Merkel cell carcinoma
Texas (ProPath Services) - Peripheral neuroectodermal tumor
Texas (Scott & White Memorial Hospital) - Merkel cell carcinoma
West Virginia (Greenbrier Valley Medical Center) - Merkel cell carcinoma
West Virginia (Wetzel County Hospital) - Merkel cell carcinoma, rule/out metastatic neuroendocrine carcinoma
Australia (Queensland Pathology Group) - PNET
Australia (Royal Hobart Hospital) - Merkel cell carcinoma
Australia (Royal Prince Alfred Hospital) - Small cell neuroendocrine carcinoma favor Merkel cell carcinoma
Australia (Sullivan Nicolaides Pathology) - Neuroendorcrine carcinoma of skin (Merkel cell carcinoma)
Canada (Pasquo Hospital) - Merkel cell tumor
Canada (Sherbrooke University Hospital) - Merkel cell carcinoma
Germany (Institut fur Pathologie UKE) - Merkel cell tumor
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Merkel cell carcinoma
Ireland (Kerry General Hospital) - High grade neuroendocrine carcinoma, Merkel
Japan (Kyoto University Hospital) - Merkel cell carcinoma
Qatar (Hamad Medical Corporation) - Merkel cell carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Merkel cell carcinoma
Saudi Arabia (MCH) - Merkel cell tumor
Singapore (KK Women's and Children's Hospital) - Neuroendocrine carcinoma, compatible with Merkel cell carcinoma
The Netherlands, Amstelveen - Merkel cell carcinoma
United Kingdom (Oxford Study Group) - Merkel cell carcinoma (exclude metastatic small cell carcinoma), shoulder

Case 7 - Diagnosis:

Merkel cell carcinoma (cutaneous neuroendocrine carcinoma), shoulder
T-Y1220, M-80423

Case 7 - References:

Dong HY, Liu W, Cohen P, et al. B-Cell Specific Activation Protein Encoded by the PAX-5 Gene is Commonly Expressed in Merkel Cell Carcinoma and Small Cell Carcinoma. *Am J of Surg Pathol* 2005; 29(5):687-692.

McAfee WJ, Morris CG, Mendenhal CM, et al. Merkel Cell Carcinoma. Treatment and Outcomes. *Cancer* 2005; 104(8):1761-1764.

Llombart B, Monteagudo C, Lopez-Guerrero JA, et al. Clinicopathological and Immunohistochemical Analysis of 20 Cases of Merkel Cell Carcinoma in Search of Prognostic Markers. *Histopathol* 2005; 46(6):622-634.

Feinmesser M, Halpern M, Kaganovsky E, et al. C-Kit Expression in Primary and Metastatic Merkel Cell Carcinoma. *Am J of Dermatopathol* 2004; 26(6):458-462.

Poulsen M. Merkel-Cell Carcinoma of the Skin. *Lancet Oncol* 2004; 5(10):593-599.

Case No. 8, Accession No. 23759 October 2006

Alameda (Alameda County Medical Center) - Testicular carcinoid (monodermal teratoma)
Baldwin Park (Kaiser Permanente) - Carcinoid (4)
Fontana (Kaiser Permanente) - Sertoli-Leydig cell tumor vs. carcinoid tumor, testis
Granada Hills - Carcinoid tumor of testis
Hayward/Fremont - "Pure" primary carcinoid tumor of testis
La Jolla (Scripps Clinic Hematopathology Fellowship) - Carcinoid tumor (1)
La Jolla (Scripps Health) - Leydig cell tumor (1)
Long Beach (VA Long beach Health System) - Neuroendocrine carcinoma
Monterey (Community Hospital of the Monterey Peninsula) - Carcinoid
Monterey Park (Garfield Medical Center) - Carcinoid
Orange (Orange County Medical Group) - Carcinoid tumor
Orange County (Kaiser Permanente) - Carcinoid tumor
Orange (University of California Irvine Residents) - Low grade neuroendocrine tumor
Oxnard (St. John's Regional Medical Center) - Carcinoid (3)
Rancho Mirage (Eisenhower Medical Center) - Carcinoid
Sacramento (UC Davis Residents) - Carcinoid of the testis
San Diego (Naval Medical Center) - Primary carcinoid of testes
San Diego (UCSD Medical Center) - Primary carcinoid of testis
San Francisco (San Francisco General Hospital) - Leydig cell tumor
San Francisco (UCSF Residents) - Primary neuroendocrine carcinoma of testicle
Santa Rosa (Santa Rosa Memorial Hospital) - Carcinoid tumor of testis (3)
Woodland Hills (Kaiser Permanente Medical Center) - Carcinoid tumor vs. germ cell teratoma tumor with carcinoid features
Woodland Hills (Suda's Soldiers) - Carcinoid (? concurrent germ cell, stains)
Arkansas (University of Arkansas for Medical Sciences) - Carcinoid tumor, testis
Florida (Jackson Memorial Hospital) - Carcinoid
Florida (Tallahassee Pathology Associates) - Carcinoid
Florida (Winter Haven Hospital) - Carcinoid (2)
Illinois, Burr Ridge - Carcinoid, rule out seminoma
Illinois (Loyola University Medical Center) - Sertoli-Leydig cell tumor
Indiana (Howard Regional Medical Center) - Carcinoid
Louisiana (Louisiana State University Health Science Center) - Carcinoid (1); Carcinoid with pseudopapillary pattern (1)
Maryland (Northwest Hospital Center) - Carcinoid tumor
Maryland (University of Maryland) - Monodermal teratoma (carcinoid tumor)
Massachusetts (Berkshire Medical Center) - Carcinoid tumor
Massachusetts (Tufts-New England Medical Center Residents) - Testicular carcinoid
Michigan (Oakwood Hospital) - Carcinoid tumor
Minnesota (Fairview Ridges Hospital) - Neuroendocrine tumor (carcinoid)
Montana, Missoula - Carcinoid tumor
Nebraska (Creighton University) - Carcinoid
New York (Nassau University Medical Center) - Testicular carcinoid
New York (SUNY Downstate Residents) - Testicular carcinoid tumor (1); Carcinoid (1)
North Carolina (Mountain Area Pathology) - Carcinoid tumor (3)
North Carolina (Pathologists Medical Laboratory) - Carcinoid tumor or testis (2)
Pennsylvania (Conemaugh Memorial Medical Center) - Neuroendocrine (carcinoid) tumor
Pennsylvania (Drexel University College of Medicine) - Neuroendocrine carcinoma
Pennsylvania (Lehigh Valley Hospital) - Carcinoid
Pennsylvania (Mt. Nittany Medical Center) - Neuroendocrine carcinoma, testes
Pennsylvania (Pennsylvania Hospital Residents) - Carcinoid tumor
Puerto Rico (University of Puerto Rico) - Carcinoid tumor of the testis
Texas, Lubbock - Carcinoid tumor
Texas (Methodist Hospital) - Leydig cell tumor
Texas (ProPath Services) - Primary carcinoid of testes
Texas (Scott & White Memorial Hospital) - Carcinoid
West Virginia (Greenbrier Valley Medical Center) - Testicular carcinoid
West Virginia (Wetzel County Hospital) - Carcinoid
Australia (Queensland Pathology Group) - Carcinoid tumor
Australia (Royal Hobart Hospital) - Carcinoid tumor of testis
Australia (Royal Prince Alfred Hospital) - Carcinoid tumor
Australia (Sullivan Nicolaides Pathology) - Carcinoid tumor, testis
Canada (Pasquo Hospital) - Carcinoid
Canada (Sherbrooke University Hospital) - Primitive neuroendocrine tumor of the testis

Germany (Institut fur Pathologie UKE) - Carcinoid
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Carcinoid monodermal teratoma
Ireland (Kerry General Hospital) - Intratesticular carcinoid tumour
Japan (Kyoto University Hospital) - Carcinoid tumor
Qatar (Hamad Medical Corporation) - Carcinoid tumor
Saudi Arabia (King Fahad National Guard Hospital) - Carcinoid
Saudi Arabia (MCH) - Carcinoid tumor
Singapore (KK Women's and Children's Hospital) - Carcinoid
The Netherlands, Amstelveen - Carcinoid of the testis
United Kingdom (Oxford Study Group) - Intratesticular neuroendocrine tumor (carcinoid)

Case 8 - Diagnosis:

Carcinoid tumor, testis
T-78000, M-82401

Case 8 – References:

Wurster K, Brodner O, Rossner JA, et al. A Carcinoid Occurring in the Testis. *Virchows Arch A Pathol Anat Histol* 1976; 370(2):185-192.

Blumberg JM, Sedberry S and Kazmi SO. Bilateral Asynchronous Metastatic Carcinoid Tumor of the Testis. *Urol* 2005; 65(1):174.

Fujita K, Wada R, Sakurai T, et al. Primary Carcinoid Tumor of the Testis with Teratoma Metastatic to the Para-Aortic Lymph Node. *Int J of Urol* 2005; 12(3):328-331.

Merino J, Zuluaga A, Gutierrez-Tejero F, et al. Pure Testicular Carcinoid Associated with Intratubular Germ Cell Neoplasia. *J of Clin Pathol* 2005; 58(12):1331-1333.

Son HY, Ra SW, Jeong JO, et al. Primary Carcinoid Tumor of the Biateral Testis Associated with Carcinoid Syndrome. *Int J of Urol* 2004; 11(11):1041-1043.

Case No. 9, Accession No. 24091 October 2006

Alameda (Alameda County Medical Center) - Pulmonary carcinoid
Baldwin Park (Kaiser Permanente) - Carcinoid tumor (4)
Fontana (Kaiser Permanente) - Carcinoid tumor, lung
Granada Hills - Neuroendocrine hyperplasia
Hayward/Fremont - Grade 1, neuroendocrine carcinoma (pulmonary carcinoid)
La Jolla (Scripps Clinic Hematopathology Fellowship) - Carcinoid tumor
La Jolla (Scripps Health) - Carcinoid
Long Beach (VA Long Beach Health System) - Neuroendocrine carcinoma
Monterey (Community Hospital of the Monterey Peninsula) - Carcinoid
Monterey Park (Garfield Medical Center) - Carcinoid
Orange (Orange County Medical Group) - Carcinoid tumor
Orange County (Kaiser Permanente) - Carcinoid tumor
Orange (University of California Irvine Residents) - Carcinoid tumor
Oxnard (St. John's Regional Medical Center) - A typical carcinoid (5)
Rancho Mirage (Eisenhower Medical Center) - Papillary carcinoid
Sacramento (UC Davis Residents) - Carcinoid tumor of the lung
San Diego (Naval Medical Center) - Carcinoid tumor of lung
San Diego (UCSD Medical Center) - Carcinoid
San Francisco (San Francisco General Hospital) - Clear cell (sugar) tumor
San Francisco (UCSF Residents) - Typical carcinoid tumor
Santa Rosa (Santa Rosa Memorial Hospital) - Carcinoid tumor, typical (2); Carcinoid tumor of lung (1)
Woodland Hills (Kaiser Permanente Medical Center) - Carcinoid tumor
Woodland Hills (Suda's Soldiers) - Carcinoid (well-differentiated neuroendocrine carcinoma)
Arkansas (University of Arkansas for Medical Sciences) - Mature carcinoid tumor, lung
Florida (Jackson Memorial Hospital) - Pulmonary carcinoid
Florida (Tallahassee Pathology Associates) - Carcinoid
Florida (Winter Haven Hospital) - Atypical carcinoid (2)
Illinois, Burr Ridge - Paraganglioma
Illinois (Loyola University Medical Center) - Carcinoid
Indiana (Howard Regional Medical Center) - Carcinoid
Louisiana (Louisiana State University Health Science Center) - Carcinoid (2)
Maryland (Northwest Hospital Center) - Carcinoid

Maryland (University of Maryland) - Well-differentiated neuroendocrine tumor (typical carcinoid)
Massachusetts (Berkshire Medical Center) - Carcinoid tumor
Massachusetts (Tufts-New England Medical Center Residents) - Well-differentiated neuroendocrine tumor (pulmonary carcinoid, peripheral type)
Michigan (Oakwood Hospital) - Carcinoid tumor
Minnesota (Fairview Ridges Hospital) - Pulmonary neuroendocrine tumor (central carcinoid)
Montana, Missoula - Atypical carcinoid tumor
Nebraska (Creighton University) - Carcinoid
New York (Nassau University Medical Center) - Low grade bronchioloalveolar carcinoma
New York (SUNY Downstate Residents) - Central carcinoid tumor, typical (1); Carcinoid (1)
North Carolina (Mountain Area Pathology) - Carcinoid tumor (3)
North Carolina (Pathologists Medical Laboratory) - Intrapulmonary glomus tumor (1); Well-differentiated neuroendocrine carcinoma (carcinoid tumor) (1)
Pennsylvania (Conemaugh Memorial Medical Center) - Carcinoid tumor
Pennsylvania (Drexel University College of Medicine) - Carcinoid tumor of lung
Pennsylvania (Lehigh Valley Hospital) - Carcinoid
Pennsylvania (Mt. Nittany Medical Center) - Carcinoid tumor, lung
Pennsylvania (Pennsylvania Hospital Residents) - Carcinoid tumor
Puerto Rico (University of Puerto Rico) - Mature carcinoid neoplasm of the lung
Texas, Lubbock - Carcinoid tumor
Texas (Methodist Hospital) - Carcinoid tumor
Texas (ProPath Services) - Well-differentiated neuroendocrine tumor of lung (carcinoid)
Texas (Scott & White Memorial Hospital) - Carcinoid
West Virginia (Greenbrier Valley Medical Center) - Bronchioloalveolar cell adenoma
West Virginia (Wetzel County Hospital) - Carcinoid
Australia (Queensland Pathology Group) - Carcinoid
Australia (Royal Hobart Hospital) - Pulmonary carcinoid (adenopapillary pattern)
Australia (Royal Prince Alfred Hospital) - Carcinoid tumor
Australia (Sullivan Nicolaides Pathology) - Carcinoid tumor, lung
Canada (Pasquo Hospital) - Carcinoid
Canada (Sherbrooke University Hospital) - Carcinoid (typical)
Germany (Institut fur Pathologie UKE) - Carcinoid
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - Carcinoid
Ireland (Kerry General Hospital) - Carcinoid tumour of lung
Japan (Kyoto University Hospital) - Carcinoid tumor
Qatar (Hamad Medical Corporation) - Carcinoid tumor
Saudi Arabia (King Fahad National Guard Hospital) - Carcinoid
Saudi Arabia (MCH) - Carcinoid tumor
Singapore (KK Women's and Children's Hospital) - Atypical carcinoid (focal necrosis)
The Netherlands, Amstelveen - Large cell neuroendocrine carcinoma, grade I
United Kingdom (Oxford Study Group) - Carcinoid, lung

Case 9 - Diagnosis:

Carcinoid tumor, lung
T-28000, M-82401

Case 9 – References:

Du Ema Z, Goldstraw P, Zacharias Jo, et al. TTF-1 Expression is Specific for Lung Primary in Typical and Atypical Carcinoids. TTF-1-Positive Carcinoids are Predominantly in Peripheral Location. *Hum Pathol* 2004; 35(7):825-831.

Pelosi Giuseppe, Rodriquez Jaime, Viale Giuseppe, et al. Typical and Atypical Pulmonary Carcinoid Tumor Overdiagnosed as Small-Cell Carcinoma on Biopsy Sepcimens. A Major Pitfall in the Management of Lung Cancer Patients. *Am J Surg Pathol* 2005; 29(2):179-187.

Aslan DL, Gulbahce HE, Pambuccian SE, et al. Ki-67 Immunoreactivity in the Differential Diagnosis of Pulmonary Neuroendocrine Neoplasms in Specimens with Extensive Crush Artifact. *Am J of Clin Pathol* 2005; 123(6):874-878.

Cai YC, Banner B, Glickman J, et al. Cytokeratin 7 and 20 and Thyroid Transcription Factor 1 Can Help Distinguish Pulmonary from Gastrointestinal Carcinoid and Pancreatic Endocrine Tumors. *Hum Pathol* 2001; 32(10):1087-1093.

Siegfried Oberndorfer. Origins and Perspectives of Carcinoid Tumors. *Hum Pathol* 2004; 35(12):1440-1451.

Case No. 10, Accession No. 30473 **October 2006**

Alameda (Alameda County Medical Center) - Synovial sarcoma
Baldwin Park (Kaiser Permanente) - Ewing's/PNET (4)
Fontana (Kaiser Permanente) - Ewing sarcoma, bone
Granada Hills - Synovial sarcoma
Hayward/Fremont - PNET with osseous metaplasia
La Jolla (Scripps Clinic Hematopathology Fellowship) - Primitive neuroectodermal tumor (PNET) (6); Monophasic synovial sarcoma (1)
Long Beach (VA Long Beach Health System) - Ewing sarcoma/PNET
Monterey (Community Hospital of the Monterey Peninsula) - PNET/Ewing's vs. desmoplastic small blue cell tumor
Monterey Park (Garfield Medical Center) - Sarcoma, rule out Ewing's
Orange (Orange County Medical Group) - PNET
Orange County (Kaiser Permanente) - Synovial sarcoma
Orange (University of California Irvine Residents) - Extraskeletal Ewing's sarcoma/PNET
Oxnard (St. John's Regional Medical Center) - PNET (5)
Rancho Mirage (Eisenhower Medical Center) - Ewing's sarcoma
Sacramento (UC Davis Residents) - Ewing's sarcoma/PNET
San Diego (Naval Medical Center) - Mesenchymal chondrosarcoma (6); Small cell osteosarcoma (4); Synovial sarcoma (2)
San Diego (UCSD Medical Center) - Mesenchymal chondrosarcoma
San Francisco (San Francisco General Hospital) - Peripheral neuroectodermal tumor (Ewing's sarcoma)
San Francisco (UCSF Residents) - Monophasic synovial sarcoma
Santa Rosa (Santa Rosa Memorial Hospital) - Mesenchymal chondrosarcoma/PNET (1); Ewing tumor/PNET (2)
Woodland Hills (Kaiser Permanente Medical Center) - Ewing's sarcoma
Woodland Hills (Suda's Soldiers) - Mesenchymal chondrosarcoma
Arkansas (University of Arkansas for Medical Sciences) - Primitive neuroectodermal tumor, shoulder
Florida (Jackson Memorial Hospital) - Synovial sarcoma
Florida (Tallahassee Pathology Associates) - Ewing's sarcoma/PNET
Florida (Winter Haven Hospital) - Osteosarcoma (2)
Illinois, Burr Ridge - Synovial sarcoma
Illinois (Loyola University Medical Center) - Mesenchymal chondrosarcoma
Indiana (Howard Regional Medical Center) - Osteosarcoma
Louisiana (Louisiana State University Health Science Center) - PNET/Ewing's sarcoma (1); Monophasic synovial sarcoma (1)
Maryland (Northwest Hospital Center) - Calcifying synovial sarcoma
Maryland (University of Maryland) - Small cell osteosarcoma
Massachusetts (Berkshire Medical Center) - PNET
Massachusetts (Tufts-New England Medical Center Residents) - Ewing's sarcoma/PNET
Michigan (Oakwood Hospital) - Synovial sarcoma
Minnesota (Fairview Ridges Hospital) - Synovial sarcoma
Montana, Missoula - Synovial sarcoma, small cell variant
Nebraska (Creighton University) - Consistent with Ewing's family extra-skeletal carcinoma
New York (Nassau University Medical Center) - Chondrosarcoma
New York (SUNY Downstate Residents) - Synovial sarcoma (2)
North Carolina (Mountain Area Pathology) - Mesenchymal chondrosarcoma (1); PNET (2)
North Carolina (Pathologists Medical Laboratory) - Mesenchymal chondrosarcoma (1); Exing's sarcoma (primitive neuroectodermal tumor) (1)
Ohio (McCullough-Hyde Memorial Hospital) - Synovial sarcoma
Pennsylvania (Conemaugh Memorial Medical Center) - Extra-skeletal Ewing's sarcoma
Pennsylvania (Drexel University College of Medicine) - Primitive neuroectodermal tumor (PNET)
Pennsylvania (Lehigh Valley Hospital) - PNET/Ewing's sarcoma
Pennsylvania (Mt. Nittany Medical Center) - ES/PNET, right humerus
Pennsylvania (Pennsylvania Hospital Residents) - Synovial sarcoma
Puerto Rico (University of Puerto Rico) - PNET/ES
Texas, Lubbock - Peripheral neuroectodermal tumor (PNET)
Texas (Methodist Hospital) - Ewing sarcoma
Texas (ProPath Services) - Peripheral Ewing's sarcoma
Texas (Scott & White Memorial Hospital) - PNET
West Virginia (Greenbrier Valley Medical Center) - Chordroma
West Virginia (Wetzel County Hospital) - Peripheral neuroectodermal tumor
Australia (Queensland Pathology Group) - PNET
Australia (Royal Hobart Hospital) - Small cell osteosarcoma
Australia (Royal Prince Alfred Hospital) - Synovial sarcoma

Australia (Sullivan Nicolaides Pathology) - Synovial sarcoma
Canada (Pasquo Hospital) - Synovial sarcoma
Canada (Sherbrooke University Hospital) - Mesenchymal chondrosarcoma
Germany (Institut fur Pathologie UKE) - PNET
Hong Kong (Pamela Youde Nethersole Eastern Hospital) - PNET
Ireland (Kerry General Hospital) - PNET
Japan (Kyoto University Hospital) - Synovial sarcoma
Qatar (Hamad Medical Corporation) - Synovial sarcoma
Saudi Arabia (King Fahad National Guard Hospital) - PNET
Saudi Arabia (MCH) - PNET
Singapore (KK Women's and Children's Hospital) - Synovial sarcoma, differential diagnosis, mesenchymal chondrosarcoma
The Netherlands, Amstelveen - PNET/Ewing sarcoma
United Kingdom (Oxford Study Group) - Poorly differentiated synovial sarcoma, shoulder

Case 10 - Diagnosis:

Primitive small round cell tumor most consistent with Ewing's sarcoma/PNET, scapula and humerus
T-11280, M-92603

Case 10 - References:

Carpentieri DF, Qualman SJ, Bowen J, et al. Protocol for the Examination of Specimens from Pediatric and Adult Patients with Osseous and Extraosseous Ewing Sarcoma Family of Tumors, Including Peripheral Primitive Neuroectodermal Tumor and Ewing Sarcoma. *Arch of Pathol & Lab Med* 2005; 129(7):866-873.

Folpe AL, Goldblum JR, Rubin BP, et al. Morphologic and Immunophenotypic Diversity in Ewing Family Tumors. A Study of 66 Genetically Cnfirmed Cases. *Am J of Surg Pathol* 2005; 29(8):1025-1033.

Bridge RS, Rajaram V, Dehner LP, et al. Molecular Diagnosis of Ewing Sarcoma/Primitive Neuroectodermal Tumor in Routinely Processed Tissue. A Comparison of Two FISH Strategies and RT-PCR in Malignant Round Cell Tumors. *Mod Pathol* 2006; 19(1):1-8.

Carvajal R and Meyers P. Ewing's Sarcoma and Primitive Neuroectodermal Family of Tumors. *Hematol-Onc Clin of North Amer* 2005; 19(3):501-525.

Scrideli CA, De Paula Queiroz RG, Nogueira CD, et al. Which Small Blue Round Cell Tumor of Bone? How Molecular Techniques Can Be Useful. *Med & Ped Oncol* 2003; 40(6):387-390.