



CALIFORNIA
TUMOR TISSUE REGISTRY

NEUROENDOCRINE PATHOLOGY

Minutes – Subscription B

February, 2010



SUGGESTED READING (General Topics from Recent Literature):

- Non-Viral Related Pathologic Findings in Liver Needle Biopsy Specimens from Patients with Chronic Viral Hepatitis. Nair V, Fischer SE and Adeyi OA. *Am J Clin Pathol* 2010; 133:127-132.
- Intraoperative Evaluation of Sentinel Lymph Nodes in Breast Carcinoma by Imprint Cytology, Frozen Section and Rapid Immunohistochemistry. Upender S, Mohan H, et al. *Diagn Cytopathol* 2009; 37:871-875.
- Intravascular Lymphocytosis in Acute Appendicitis. Potential Mimicry of Chronic Lymphocytic Leukaemia. Lee S, Ogilvie TT, et al. *Histopathol* 2009; 55:660-664.
- Collagenous Sprue Is Not Always Associated with Dismal Outcomes. A Clinicopathological Study of 19 Patients. Vakiani E, Arguelles-Grande C, et al. *Mod Pathol* 2010; 23:12-26.
- Lymph Node Involvement in Ovarian Serous Tumors of Low Malignant Potential. A Clinicopathologic Study of Thirty-Six Cases. Djordjevic B and Malpica A. *Am J Surg Pathol* 2010; 34:1-9.

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FILE DIAGNOSES

CTTR Subscription B

February 2010

Case 1:

Pancreatic endocrine neoplasm, pancreas
T-59000, M-80103

Case 2:

Pheochromocytoma, adrenal
T-93000, M-87000

Case 3:

Vagal paraganglioma, neck
T-Y0600, M-86801

Case 4:

Atypical carcinoid tumor (well-differentiated neuroendocrine carcinoma), bronchus
T-26000, M-82403

Case 5:

Testicular carcinoid tumor
T-78000, M-82401

Case 6:

Small cell carcinoma (neuroendocrine carcinoma), lung
T-28000, M-80413

Case 7:

Neuroendocrine tumor most consistent with PNET, retroperitoneum
T-Y4600, M-93630

Case 8:

Neuroblastoma, sacral region
T-Y1410, M-95003

Case 9:

Medullary carcinoma, thyroid
T-96000, D-2955

Case 10:

Merkel cell carcinoma, parotid gland
T-55100, M-80103

(Duarte (City of Hope) - VIPoma
Woodland Hills - Pancreatic endocrine tumor (carcinoma)
Florida (Naples Pathology Associates) - Ductal adenocarcinoma
Georgia, Dunwoody - Pancreatic endocrine tumor
Hawaii (Medical Examiners Office) - Pancreatic endocrine tumor
Illinois (Heartland Regional Medical Center) - Pancreatic endocrine neoplasm, well-differentiated, intermediate grade
Illinois (Loyola University Medical Center) - Acinic cell carcinoma
Indiana, Indianapolis - Pancreatic endocrine neoplasm
Kansas (Coffeyville Regional Medical Center) - Pancreatic endocrine neoplasm, (oncocytic variant)
Kansas (Peterson Laboratory Services) - Acinar cell carcinoma
Louisiana (LSUHSC-Pathology Residents) - Pancreatic neuroendocrine carcinoma
Michigan (Henry Ford Hospital Residents) - Pancreatic endocrine neoplasm (favor VIP-oma)
Mississippi (University of Mississippi) - Pancreatic endocrine neoplasm
New York (Albany Medical Center) - Pancreatic endocrine neoplasm
New York (St. Lukes-Roosevelt Hospital) - Pancreatic well-differentiated neuroendocrine carcinoma (3)
New York (SUNY Downstate Medical Center) - Pancreatic endocrine carcinoma
New York (SUNY Stony Brook University Hospital) - Pancreatic endocrine neoplasm, well-differentiated
New York (Westchester Medical Center) - VIPoma, arising in the pancreas
Ohio, Columbus - Well-differentiated neuroendocrine carcinoma (pancreatic endocrine neoplasm)
Ohio, Dublin - Pancreatic endocrine neoplasm
Ohio (University of Toledo) - Pancreatic neuroendocrine tumor
Pennsylvania (Conemaugh Memorial Hospital) - Malignant neuroendocrine tumor
Pennsylvania (Drexel University College of Medicine Residents) - Malignant pancreatic endocrine neoplasm
Pennsylvania (Magee Women's Hospital) - Pancreatic endocrine neoplasm
Puerto Rico (University of Puerto Rico) - Well-differentiated endocrine carcinoma/VIPoma
Tennessee, Knoxville - Pancreatic endocrine tumor
Texas, Crystal Beach - Mucinous adenocarcinoma
Texas, Lubbock - Hepatic carcinoma
Texas (Scott & White Hospital) - Neuroendocrine carcinoma
Texas (University of Texas Health Science Center Residents) - Pancreatic neuroendocrine carcinoma
Washington (University of Washington Medical Center) - Invasive adenocarcinoma
Wisconsin (St. Mary's Hospital) - Neuroendocrine carcinoma (carcinoid)
Australia (Royal Prince Alfred Hospital) - Pancreatic endocrine neoplasm (well-differentiated carcinoma) ? VIPoma
Canada (Pasqua Hospital) - Pancreatic endocrine neoplasm (oncocytic)
Canada (University of Sherbrooke) - Neuroendocrine carcinoma
Japan (Asahi General Hospital) - Well-differentiated endocrine carcinoma
Japan (Shizuoka Tokushukei Hospital) - Oncocytic carcinoma
Japan (University of Yamanashi) - Well-differentiated endocrine carcinoma (gastrinoma)
Netherlands, Amstelveen - Pancreatic endocrine carcinoma
Singapore (Freelance/Locum Practice) - Pancreatic endocrine neoplasm
Spain (Provisa Medical Center) - Malignant pancreatic endocrine tumor
United Kingdom (John Radcliffe Hospital) - Well-differentiated endocrine carcinoma of the pancreas

Case 1 - Diagnosis:

Pancreatic endocrine neoplasm, pancreas
 T-59000, M-80103

Case 1 - References:

Frankel WL. Update on Pancreatic Endocrine Tumors. *Arch Pathol Lab Med* 2006; 130(7):963-966.
 Florida G, Grilli G, et al. Chromosomal Alterations Detected By Comparative Genomic Hybridization in Nonfunctioning Endocrine Pancreatic Tumors. *Cancer Genet Cytogenet* 2005; 156(1):23-30.
 Srivastava A, Padilla O, et al. Neuroendocrine Secretory Protein-55 (NESP-55) Expression Discriminates Pancreatic Endocrine Tumors and Pheochromocytomas from Gastrointestinal and Pulmonary Carcinoids. *Am J Surg Pathol* 2004; 28(10):1371-1378.

Halfdanarson TR, Rubin J, et al. Pancreatic Endocrine Neoplasms. Epidemiology and Prognosis of Pancreatic Endocrine Tumors. *Endocr Relat Cancer* 2008; 15(2):409-427.
Simon P, Spilcke-Liss E and Wallaschofski H. Endocrine Tumors of the Pancreas. *Endocrinol Metab Clin North Am* 2006; 35(2):431-447.

Case No. 2, Accession No. 29472

February 2010

(Duarte (City of Hope) - Pheochromocytoma
Woodland Hills - Pheochromocytoma
Florida (Naples Pathology Associates) - Pheochromocytoma
Georgia, Dunwoody - Pheochromocytoma
Hawaii (Medical Examiners Office) - Pheochromocytoma
Illinois (Heartland Regional Medical Center) - Pheochromocytoma
Illinois (Loyola University Medical Center) - Pheochromocytoma
Indiana, Indianapolis - Pheochromocytoma
Kansas (Coffeyville Regional Medical Center) - Pheochromocytoma
Kansas (Peterson Laboratory Services) - Adrenal paraganglioma
Louisiana (LSUHSC-Pathology Residents) - Pheochromocytoma
Michigan (Henry Ford Hospital Residents) - Pheochromocytoma
Mississippi (University of Mississippi) - Pheochromocytoma
New York (Albany Medical Center) - Pheochromocytoma
New York (St. Lukes-Roosevelt Hospital) - Pheochromocytoma (3)
New York (SUNY Downstate Medical Center) - Pheochromocytoma
New York (SUNY Stony Brook University Hospital) - Pheochromocytoma
New York (Westchester Medical Center) - Pheochromocytoma
Ohio, Columbus - Pheochromocytoma
Ohio, Dublin - Pheochromocytoma
Ohio (University of Toledo) - Pheochromocytoma
Pennsylvania (Conemaugh Memorial Hospital) - Pheochromocytoma
Pennsylvania (Drexel University College of Medicine Residents) - Pheochromocytoma
Pennsylvania (Magee Women's Hospital) - Pheochromocytoma
Puerto Rico (University of Puerto Rico) - Pheochromocytoma
Tennessee, Knoxville - Pheochromocytoma
Texas, Crystal Beach - Pheochromocytoma
Texas, Lubbock - Pheochromocytoma
Texas (Scott & White Hospital) - Pheochromocytoma
Texas (University of Texas Health Science Center Residents) - Pheochromocytoma
Washington (University of Washington Medical Center) - Pheochromocytoma
Wisconsin (St. Mary's Hospital) - Pheochromocytoma
Australia (Royal Prince Alfred Hospital) - Pheochromocytoma
Canada (Pasqua Hospital) - Pheochromocytoma
Canada (University of Sherbrooke) - Pheochromocytoma
Japan (Asahi General Hospital) - Pheochromocytoma
Japan (Shizuoka Tokushukei Hospital) - Pheochromocytoma
Japan (University of Yamanashi) - Pheochromocytoma
Netherlands, Amstelveen - Pheochromocytoma
Singapore (Freelance/Locum Practice) - Pheochromocytoma
Spain (Provisa Medical Center) - Pheochromocytoma
United Kingdom (John Radcliffe Hospital) - Pheochromocytoma

Case 2 - Diagnosis:

Pheochromocytoma, adrenal
T-93000, M-87000

Case 2 - References:

Rodriguez JM, Balsalobre M, et al. Pheochromocytoma in MEN 2A Syndrome. Study of 54 Patients. *World J Surg* 2008; 32(11):2520-2526.

Charfi S and Ayadi L. (Composite Pheochromocytoma Associated with Multiple Endocrine Neoplasia Type. *Ann Pathol* 2008; 28(3):225-228.

Tischler AS. Pheochromocytoma. Time to Stamp Out “Malignancy”? *Endocr Pathol* 2008; Winter 19(4):207-208.

Niveditha SR and Suguna BV. Cytologic Features of Malignant Cystic Pheochromocytoma. A Case Report. *Acta Cytol* 2007; 51(2):200-202.

Jimenez-Heffernan JA, Vicandi B. Cytologic Features of Pheochromocytoma and Retroperitoneal Paraganglioma. A Morphologic and Immunohistochemical Study of 13 Cases. *Acta Cytol* 2006; 50(4):372-378.

Case No. 3, Accession No. 24816

February 2010

(Duarte (City of Hope) - Vagal paraganglioma

Woodland Hills - Paraganglioma

Florida (Naples Pathology Associates) - Extra-adrenal paraganglioma

Georgia, Dunwoody - Paraganglioma

Hawaii (Medical Examiners Office) - Paraganglioma

Illinois (Heartland Regional Medical Center) - Vagal paraganglioma

Illinois (Loyola University Medical Center) - Paraganglioma

Indiana, Indianapolis - Paraganglioma

Kansas (Coffeyville Regional Medical Center) - Paraganglioma, cervical

Kansas (Peterson Laboratory Services) - Vagal paraganglioma

Louisiana (LSUHSC-Pathology Residents) - Paraganglioma

Michigan (Henry Ford Hospital Residents) - Paraganglioma (favor chemodectoma)

Mississippi (University of Mississippi) - Vagal paraganglioma

New York (Albany Medical Center) - Paraganglioma

New York (St. Lukes-Roosevelt Hospital) - Paraganglioma (3)

New York (SUNY Downstate Medical Center) - Paraganglioma

New York (SUNY Stony Brook University Hospital) - Paraganglioma, intravagal

New York (Westchester Medical Center) - Paraganglioma

Ohio, Columbus - Paraganglioma

Ohio, Dublin - Paraganglioma

Ohio (University of Toledo) - Vagal paraganglioma

Pennsylvania (Conemaugh Memorial Hospital) - Paraganglioma

Pennsylvania (Drexel University College of Medicine Residents) - Paraganglioma

Pennsylvania (Magee Women’s Hospital) - Paraganglioma

Puerto Rico (University of Puerto Rico) - Vagal paraganglioma

Tennessee, Knoxville - Paraganglioma

Texas, Crystal Beach - Paraganglioma

Texas, Lubbock - Paraganglioma

Texas (Scott & White Hospital) - Paraganglioma

Texas (University of Texas Health Science Center Residents) - Paraganglioma

Washington (University of Washington Medical Center) - Paraganglioma

Wisconsin (St. Mary’s Hospital) - Carotid body tumor (paraganglioma)

Australia (Royal Prince Alfred Hospital) - Paraganglioma (carotid body tumor)

Canada (Pasqua Hospital) - Paraganglioma

Canada (University of Sherbrooke) - Paraganglioma

Japan (Asahi General Hospital) - Extraadrenal paraganglioma

Japan (Shizuoka Tokushukei Hospital) - Paraganglioma

Japan (University of Yamanashi) - Paraganglioma

Netherlands, Amstelveen - Paraganglioma of carotid body

Singapore (Freelance/Locum Practice) - Paraganglioma

Spain (Provisa Medical Center) - Paraganglioma

United Kingdom (John Radcliffe Hospital) - Extra-adrenal paraganglioma

Case 3 - Diagnosis:

Vagal paraganglioma, neck
T-Y0600, M-86801

Case 3 - References:

Pellitteri PK, Rinaldo A, et al. Paragangliomas of the Head and Neck. *Oral Oncol* 2004; 40(6):563-575.
Varma K, Jain S and Mandal S. Cytomorphologic Spectrum in Paraganglioma. *Acta Cytol* 2008; 52(5):549-556.
Kupferman ME and Hanna EY. Paragangliomas of the Head and Neck. *Curr Oncol Rep* 2008; 10(2):156-161.
Jimenez-Heffernan JA, Vicandi B, et al. Cytologic Features of Pheochromocytoma and Retroperitoneal Paraganglioma. A Morphologic and Immunohistochemical Study of 13 Cases. *Acta Cytol* 2006; 50(4):372-378.
Caldarelli C, Iacconi C, et al. Vagal Paragangliomas. Two Case Reports. *Acta Otorhinolaryngol Ital* 2007; 27(3):139-143.

Case No. 4, Accession No. 12704**February 2010**

(Duarte (City of Hope) - Atypical carcinoid
Woodland Hills - Carcinoid
Florida (Naples Pathology Associates) - Central carcinoid tumor
Georgia, Dunwoody - Carcinoid tumor
Hawaii (Medical Examiners Office) - Atypical carcinoid
Illinois (Heartland Regional Medical Center) - Carcinoid tumor (NEC Grade 1)
Illinois (Loyola University Medical Center) - Carcinoid
Indiana, Indianapolis - Carcinoid tumor
Kansas (Coffeyville Regional Medical Center) - Carcinoid tumor
Kansas (Peterson Laboratory Services) - Carcinoid
Louisiana (LSUHSC-Pathology Residents) - Atypical carcinoid
Michigan (Henry Ford Hospital Residents) - Carcinoid tumor, lung
Mississippi (University of Mississippi) - Carcinoid tumor
New York (Albany Medical Center) - Atypical carcinoma
New York (St. Lukes-Roosevelt Hospital) - Typical carcinoid (3)
New York (SUNY Downstate Medical Center) - Atypical carcinoid
New York (SUNY Stony Brook University Hospital) - Carcinoid tumor
New York (Westchester Medical Center) - Atypical carcinoid tumor of the lung
Ohio, Columbus - Well-differentiated neuroendocrine carcinoma (carcinoid tumor)
Ohio, Dublin - Well-differentiated neuroendocrine carcinoma
Ohio (University of Toledo) - Carcinoid tumor, typical
Pennsylvania (Conemaugh Memorial Hospital) - Carcinoid tumor
Pennsylvania (Drexel University College of Medicine Residents) - Well-differentiated neuroendocrine carcinoma
Pennsylvania (Magee Women's Hospital) - Carcinoid
Puerto Rico (University of Puerto Rico) - Atypical carcinoid tumor
Tennessee, Knoxville - Carcinoid tumor
Texas, Crystal Beach - Carcinoid
Texas, Lubbock - Carcinoid tumor
Texas (Scott & White Hospital) - Carcinoid
Texas (University of Texas Health Science Center Residents) - Carcinoid tumor
Washington (University of Washington Medical Center) - Carcinoid
Wisconsin (St. Mary's Hospital) - Carcinoid tumor of lung
Australia (Royal Prince Alfred Hospital) - Carcinoid tumor
Canada (Pasqua Hospital) - Carcinoid
Canada (University of Sherbrooke) - Atypical carcinoid
Japan (Asahi General Hospital) - Carcinoid tumor
Japan (University of Yamanashi) - Atypical carcinoid
Netherlands, Amstelveen - Carcinoid of the lung
Singapore (Freelance/Locum Practice) - Carcinoid tumor

Spain (Provisa Medical Center) - Atypical carcinoid

United Kingdom (John Radcliffe Hospital) - Well-differentiated neuroendocrine carcinoma (carcinoid)

Case 4 - Diagnosis:

Atypical carcinoid tumor (well-differentiated neuroendocrine carcinoma), bronchus
T-26000, M-82403

Case 4 - References:

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

Bini A, Brandolini J, et al. Typical and Atypical Pulmonary Carcinoids. Our Institutional Experience. *Interact Cardiovasc Thorac Surg* 2008; 7(3):415-418.

Thiriyai SA, Rana DN and Perera DM. Bronchial Carcinoid Tumor. Cytologic Features on ThinPrep and a Diagnostic Pitfall in Bronchial Brushings and Washings. *Diagn Cytopathol* 2008; 36(4):275-276.

Morandi U, Casali C and Rossi G. Bronchial Typical Carcinoid Tumors. *Semin Thorac Cardiovasc Surg* 2006; 18(3):191-198.

Aron M, Kapila K and Verma K. Carcinoid Tumors of the Lung. A Diagnostic Challenge in Bronchial Washings. *Diagn Cytopathol* 2004; 30(1):62-66.

Case No. 5, Accession No. 24734

February 2010

(Duarte (City of Hope)) - Intra-testicular carcinoid

Woodland Hills - Carcinoid

Florida (Naples Pathology Associates) - Testicular carcinoid tumor

Georgia, Dunwoody - Carcinoid tumor

Hawaii (Medical Examiners Office) - Carcinoid

Illinois (Heartland Regional Medical Center) - Carcinoid tumor (NEC grade); teratoma-not identified

Illinois (Loyola University Medical Center) - Carcinoid

Indiana, Indianapolis - Carcinoid tumor

Kansas (Coffeyville Regional Medical Center) - Leydig cell tumor

Kansas (Peterson Laboratory Services) - Carcinoid

Louisiana (LSUHSC-Pathology Residents) - Carcinoid

Michigan (Henry Ford Hospital Residents) - Carcinoid tumor, testis

Mississippi (University of Mississippi) - Intratesticular carcinoid

New York (Albany Medical Center) - Carcinoid tumor

New York (St. Lukes-Roosevelt Hospital) - Carcinoid tumor of testis (2); Testicular carcinoid (1)

New York (SUNY Downstate Medical Center) - Carcinoid tumor of testis

New York (SUNY Stony Brook University Hospital) - Carcinoid tumor

New York (Westchester Medical Center) - Carcinoid tumor of the testis

Ohio, Columbus - Well-differentiated neuroendocrine carcinoma (carcinoid tumor)

Ohio, Dublin - Well-differentiated neuroendocrine carcinoma

Ohio (University of Toledo) - Monodermal teratoma (carcinoid tumor of the testis)

Pennsylvania (Conemaugh Memorial Hospital) - Carcinoid tumor

Pennsylvania (Drexel University College of Medicine Residents) - Carcinoid tumor of testis

Pennsylvania (Magee Women's Hospital) - Carcinoid

Puerto Rico (University of Puerto Rico) - Carcinoid tumor

Tennessee, Knoxville - Carcinoid tumor

Texas, Crystal Beach - Spermatocytic seminoma

Texas, Lubbock - Carcinoid tumor

Texas (Scott & White Hospital) - Carcinoid

Texas (University of Texas Health Science Center Residents) - Moderately differentiated neuroendocrine carcinoma (atypical carcinoid)

Washington (University of Washington Medical Center) - Carcinoid/monodermal teratoma

Wisconsin (St. Mary's Hospital) - Carcinoid tumor, testicle

Australia (Royal Prince Alfred Hospital) - Carcinoid tumor
Canada (Pasqua Hospital) - Carcinoid
Canada (University of Sherbrooke) - Carcinoid
Japan (Asahi General Hospital) - Carcinoid tumor
Japan (Shizuoka Tokushukei Hospital) - Carcinoid tumor
Japan (University of Yamanashi) - Carcinoid
Netherlands, Amstelveen - Carcinoid of the testis
Singapore (Freelance/Locum Practice) - Carcinoid tumor
Spain (Provisa Medical Center) - Carcinoid
United Kingdom (John Radcliffe Hospital) - Well-differentiated neuroendocrine carcinoma (carcinoid)

Case 5 - Diagnosis:

Testicular carcinoid tumor
 T-78000, M-82401

Case 5 - References:

Hodzic J, Golka K and Schulze H. Primary Testicular Carcinoid. *Med Sci Monit* 2004; 10(8):PCS46-48.
 Thomas JC and Jones JS. Primary Carcinoid Tumor of the Testis Found at the Time of Elective Sterilization. *J Androl* 2004; 25(3):338-339.
 Ulbright TM and Young RH. Carcinoid Tumor of the Testis. *Am J Clin Pathol* 2004; 121(2):297.
 Merino J, Zuluaga A, et al. Pure Testicular Carcinoid Associated with Intratubular Germ Cell Neoplasia. *J Clin Pathol* 2005; 58(12):1331-1333.
 Blumberg JM, Sedberry S and Kazmi SO. Bilateral Asynchronous Metastatic Carcinoid Tumor of the Testis. *Urology* 2005; 65(1):174.

Case No. 6, Accession No. 30635

February 2010

(Duarte (City of Hope) - Small cell (oat cell) carcinoma
Woodland Hills - Small cell carcinoma
Florida (Naples Pathology Associates) - Poorly differentiated neuroendocrine carcinoma
Georgia, Dunwoody - Small cell carcinoma
Hawaii (Medical Examiners Office) - Small cell carcinoma
Illinois (Heartland Regional Medical Center) - Small cell anaplastic carcinoma (mixed small cell/large cell variant)
Illinois (Loyola University Medical Center) - Small cell carcinoma
Indiana, Indianapolis - High grade neuroendocrine carcinoma
Kansas (Coffeyville Regional Medical Center) - Neuroendocrine carcinoma with giant cells
Kansas (Peterson Laboratory Services) - High grade neuroendocrine carcinoma
Louisiana (LSUHSC-Pathology Residents) - Large cell neuroendocrine carcinoma
Michigan (Henry Ford Hospital Residents) - Small cell carcinoma
Mississippi (University of Mississippi) - Large cell neuroendocrine tumor
New York (Albany Medical Center) - Small cell carcinoma
New York (St. Lukes-Roosevelt Hospital) - Small cell carcinoma (3)
New York (SUNY Downstate Medical Center) - Small cell carcinoma
New York (SUNY Stony Brook University Hospital) - Neuroendocrine carcinoma
New York (Westchester Medical Center) - Poorly differentiated neuroendocrine tumor, lung
Ohio, Columbus - Poorly differentiated neuroendocrine carcinoma (small cell carcinoma)
Ohio, Dublin - Poorly differentiated neuroendocrine carcinoma
Ohio (University of Toledo) - Metastatic parathyroid carcinoma
Pennsylvania (Conemaugh Memorial Hospital) - Small cell carcinoma
Pennsylvania (Drexel University College of Medicine Residents) - Small cell carcinoma with minor large component
Pennsylvania (Magee Women's Hospital) - Small cell carcinoma consistent with large cell component
Puerto Rico (University of Puerto Rico) - Small cell carcinoma
Tennessee, Knoxville - Small cell carcinoma
Texas, Crystal Beach - Small cell carcinoma

Texas, Lubbock - Small cell carcinoma
Texas (Scott & White Hospital) - Small cell carcinoma
Texas (University of Texas Health Science Center Residents) - Large cell neuroendocrine carcinoma
Washington (University of Washington Medical Center) - Neuroendocrine carcinoma
Wisconsin (St. Mary's Hospital) - Small cell anaplastic carcinoma
Australia (Royal Prince Alfred Hospital) - Small cell neuroendocrine carcinoma
Canada (Pasqua Hospital) - Small cell carcinoma
Canada (University of Sherbrooke) - Small cell carcinoma
Japan (Asahi General Hospital) - Combined small cell carcinoma with Azzopardi effect
Japan (Shizuoka Tokushukei Hospital) - Small cell carcinoma
Japan (University of Yamanashi) - Parathyroid carcinoma
Netherlands, Amstelveen - Small cell lung cancer
Singapore (Freelance/Locum Practice) - Small cell carcinoma
Spain (Provisa Medical Center) - Mixed small cell and large cell carcinoma
United Kingdom (John Radcliffe Hospital) - Poorly differentiated neuroendocrine carcinoma (mixed small and large cell)

Case 6- Diagnosis:

Small cell carcinoma (neuroendocrine carcinoma), lung
 T-28000, M-80413

Case 6 - References:

Cicin I, Karagol H, et al. Extrapulmonary Small-Cell Carcinoma Compared with Small-Cell Lung Carcinoma. A Retrospective Single-Center Study. *Cancer* 2007; 110(5):1068-1076.
 Bobos M, Hytiroglou P, et al. Immunohistochemical Distinction Between Merkel Cell Carcinoma and Small Cell Carcinoma of the Lung. *Am J Dermatopathol* 2006; 28(2):99-104.
 Kalemkerian GP, Akerley W, et al. Small Cell Lung Cancer. *J Natl Compr Canc Netw* 2008; 6(3):294-314.

Case No. 7, Accession No. 31132

February 2010

(Duarte (City of Hope) - Paraganglioma
Woodland Hills - Wilms
Florida (Naples Pathology Associates) - Desmoplastic small cell tumor
Georgia, Dunwoody - Ewing sarcoma/PNET
Hawaii (Medical Examiners Office) - Desmoplastic small round cell tumor
Illinois (Heartland Regional Medical Center) - Neuroendocrine neoplasm, NOS
Illinois (Loyola University Medical Center) - Pancreatoblastoma
Indiana, Indianapolis - Desmoplastic small round blue cell tumor
Kansas (Coffeyville Regional Medical Center) - Malignant paraganglioma
Kansas (Peterson Laboratory Services) - Solid and pseudopapillary tumor of the pancreas
Louisiana (LSUHSC-Pathology Residents) - Poorly differentiated neuroendocrine carcinoma
Michigan (Henry Ford Hospital Residents) - Paraganglioma
Mississippi (University of Mississippi) - Desmoplastic small round cell tumor
New York (Albany Medical Center) - PNET
New York (St. Lukes-Roosevelt Hospital) - Neuroblastoma (3)
New York (SUNY Downstate Medical Center) - Endocrine carcinoma/pheochromocytoma
New York (SUNY Stony Brook University Hospital) - Malignant paraganglioma of the organ of Zuckerkandl
New York (Westchester Medical Center) - PNET vs. solid pseudopapillary tumor of the pancreas
Ohio, Columbus - Pancreatoblastoma
Ohio, Dublin - Pancreatoblastoma
Ohio (University of Toledo) - Stroma-poor neuroblastoma
Pennsylvania (Conemaugh Memorial Hospital) - Primitive neuroectodermal tumor/malignant neuroendocrine carcinoma
Pennsylvania (Magee Women's Hospital) - Desmoplastic small round cell tumor
Puerto Rico (University of Puerto Rico) - Malignant paraganglioma

Tennessee, Knoxville - Neuroblastoma
Texas, Crystal Beach - Adenocarcinoma endocrine
Texas, Lubbock - Clear cell sarcoma
Texas (Scott & White Hospital) - Desmoplastic small round cell tumor
Texas (University of Texas Health Science Center Residents) - Neuroblastoma
Washington (University of Washington Medical Center) - Wilms tumor
Wisconsin (St. Mary's Hospital) - Extraadrenal paraganglioma
Australia (Royal Prince Alfred Hospital) - Maturing neuroblastoma
Canada (Pasqua Hospital) - Neuroblastoma with maturation
Canada (University of Sherbrooke) - Poorly differentiated tumor with rhabdoid features
Japan (Asahi General Hospital) - Solid pseudopapillary neoplasm of pancreas
Japan (Shizuoka Tokushukai Hospital) - Abdominal paraganglioma
Japan (University of Yamanashi) - Paraganglioma
Netherlands, Amstelveen - (Neuro) endocrine tumor
Singapore (Freelance/Locum Practice) - Poorly differentiated endocrine carcinoma
Spain (Provisa Medical Center) - Paraganglioma
United Kingdom (John Radcliffe Hospital) - Neuroblastoma

Case 7 - Diagnosis:

Neuroendocrine tumor most consistent with PNET, retroperitoneum
 T-Y4600, M-93630

Case 7 - References:

Halfdanarson TR, Rabe KG, et al. Pancreatic Neuroendocrine Tumors (PNETs). Incidence, Prognosis and Recent Trend Toward Improved Survival. *Ann Oncol* 2008; 19(10):1727-1733.
 Ellinger J, Bastian PJ, et al. Primitive Neuroectodermal Tumor. Rare, Highly Aggressive Differential Diagnosis in Urologic Malignancies. *Urol* 2006; 68(2):257-262.
 Kim MS, Kim B, et al. Radiologic Findings of Peripheral Primitive Neuroectodermal Tumor Arising in the Retroperitoneum. *AJR Am J Roentgenol* 2006 186(4):1125-1132.
 Barroca H. Fine Needle Biopsy and Genetics, Two Allied Weapons in the Diagnosis, Prognosis, and Target Therapeutics of Solid Pediatric Tumors. *Diagn Cytopathol* 2008; 36(9):678-684.

Case No. 8, Accession No. 19362

February 2010

(Duarte (City of Hope)) - Neuroblastoma (with anaplastic features)
Woodland Hills - Neuroblastoma
Florida (Naples Pathology Associates) - Malignant peripheral nerve sheath tumor
Georgia, Dunwoody - Neuroblastoma
Hawaii (Medical Examiners Office) - Neuroblastoma
Illinois (Heartland Regional Medical Center) - Ganglioneuroblastoma
Illinois (Loyola University Medical Center) - Neuroblastoma
Indiana, Indianapolis - Neuroblastoma
Kansas (Coffeyville Regional Medical Center) - MPNST (epithelioid)
Kansas (Peterson Laboratory Services) - Neuroblastoma
Louisiana (LSUHSC-Pathology Residents) - High grade neuroendocrine carcinoma
Michigan (Henry Ford Hospital Residents) - PNET
New York (Albany Medical Center) - Neuroblastoma
New York (St. Lukes-Roosevelt Hospital) - PNET (3)
New York (SUNY Downstate Medical Center) - Neuroblastoma
New York (SUNY Stony Brook University Hospital) - Neuroblastoma
New York (Westchester Medical Center) - Neuroblastoma vs. malignant peripheral nerve sheath tumor
Ohio, Columbus - PNET
Ohio, Dublin - Peripheral neuroectodermal tumor
Ohio (University of Toledo) - Primitive neuroectodermal tumor
Pennsylvania (Conemaugh Memorial Hospital) - Neuroblastoma

Pennsylvania (Magee Women's Hospital) - Differentiating neuroblastoma
Puerto Rico (University of Puerto Rico) - Poorly differentiated neuroendocrine carcinoma/PNET/MPNST
Tennessee, Knoxville - Neuroblastoma
Texas, Crystal Beach - Primitive neuroectodermal tumor (neuroblastoma)
Texas, Lubbock - Ganglioneuroblastoma
Texas (Scott & White Hospital) - Neuroblastoma
Texas (University of Texas Health Science Center Residents) - Peripheral neuroendocrine tumor (PNET)
Washington (University of Washington Medical Center) - Neuroblastoma
Wisconsin (St. Mary's Hospital) - Neuroblastoma
Australia (Royal Prince Alfred Hospital) - Ganglioneuroblastoma
Canada (Pasqua Hospital) - Ganglioneuroblastoma
Canada (University of Sherbrooke) - Neuroblastoma
Japan (Asahi General Hospital) - Anaplastic neuroblastoma
Japan (Shizuoka Tokushukai Hospital) - Ganglioneuroblastoma
Japan (University of Yamanashi) - Neuroblastoma
Netherlands, Amstelveen - Neuroblastoma
Singapore (Freelance/Locum Practice) - Poorly differentiated endocrine carcinoma
Spain (Provisa Medical Center) - PNET
United Kingdom (John Radcliffe Hospital) - Ewings/PNET

Case 8 - Diagnosis:

Neuroblastoma, sacral region
 T-Y1410, M-95003

Case 8 - References:

Watanabe M, Komuro H, et al. A Rare Case of Presacral Cystic Neuroblastoma in an Infant. *J Pediatr Surg* 2008; 43(7):1376-1379.
 Miura Y, Kami M, et al. Mass Screening for Neuroblastoma at 6 Months of Age. *Lancet* 2008; 372:372-373.
 Hero B, Simon T, et al. Localized Infant Neuroblastomas Often Show Spontaneous Regression. Results of the Prospective Trials NB95-S and NB97. *J Clin Oncol* 2008; 26(9):1504-1510.
 Park JR, Eggert A and Caron H. Neuroblastoma. Biology, Prognosis, and Treatment. *Pediatr Clin North Am* 2008; 55(1):97-120.

Case No. 9, Accession No. 21076

February 2010

Duarte (City of Hope) - Medullary carcinoma
Woodland Hills - Medullary carcinoma
Florida (Naples Pathology Associates) - Medullary thyroid carcinoma
Georgia, Dunwoody - Medullary carcinoma
Hawaii (Medical Examiners Office) - Medullary carcinoma
Illinois (Heartland Regional Medical Center) - Medullary carcinoma
Illinois (Loyola University Medical Center) - Medullary carcinoma
Indiana, Indianapolis - Medullary carcinoma
Kansas (Coffeyville Regional Medical Center) - Medullary carcinoma
Kansas (Peterson Laboratory Services) - Medullary carcinoma
Louisiana (LSUHSC-Pathology Residents) - Medullary carcinoma
Michigan (Henry Ford Hospital Residents) - Medullary carcinoma, thyroid
Mississippi (University of Mississippi) - Medullary carcinoma of the thyroid
New York (Albany Medical Center) - Medullary carcinoma
New York (St. Lukes-Roosevelt Hospital) - Medullary carcinoma of thyroid gland (3)
New York (SUNY Downstate Medical Center) - Medullary carcinoma of thyroid
New York (SUNY Stony Brook University Hospital) - Medullary thyroid carcinoma
New York (Westchester Medical Center) - Medullary thyroid carcinoma
Ohio, Columbus - Medullary thyroid carcinoma
Ohio, Dublin - Medullary thyroid carcinoma

Ohio (University of Toledo) - Medullary thyroid carcinoma
Pennsylvania (Conemaugh Memorial Hospital) - Medullary carcinoma of thyroid
Pennsylvania (Drexel University College of Medicine Residents) - Medullary carcinoma
Pennsylvania (Magee Women's Hospital) - Medullary carcinoma
Puerto Rico (University of Puerto Rico) - Medullary thyroid carcinoma
Tennessee, Knoxville - Medullary thyroid carcinoma
Texas, Crystal Beach - Carcinoma thyroid medullary
Texas, Lubbock - Medullary carcinoma
Texas (Scott & White Hospital) - Medullary carcinoma
Texas (University of Texas Health Science Center Residents) - Medullary carcinoma
Washington (University of Washington Medical Center) - Medullary carcinoma
Wisconsin (St. Mary's Hospital) - Medullary carcinoma
Australia (Royal Prince Alfred Hospital) - Medullary carcinoma of thyroid
Canada (Pasqua Hospital) - Medullary carcinoma
Canada (University of Sherbrooke) - Medullary carcinoma
Japan (Asahi General Hospital) - Medullary carcinoma
Japan (Shizuoka Tokushukei Hospital) - Medullary carcinoma
Japan (University of Yamanashi) - Medullary carcinoma
Netherlands, Amstelveen - Hyaline trabecular tumor
Singapore (Freelance/Locum Practice) - Medullary thyroid carcinoma
Spain (Provisa Medical Center) - Medullary carcinoma
United Kingdom (John Radcliffe Hospital) - Medullary carcinoma

Case 9 - Diagnosis:

Medullary carcinoma, thyroid
 T-96000, D-2955

Case 9 - References:

Hsieh MH, Lin MC, et al. Fine Needle Aspiration Cytology of Mixed Medullary-Follicular Thyroid Carcinoma. A Case Report. *Acta Cytol* 2008; 52(3):361-365.
 Cavalier E, Carlisi A, et al. Analytical Quality of Calcitonin Determination and Its Effect on the Adequacy of Screening for Medullary Carcinoma of the Thyroid. *Clin Chem* 2008; 54(5):929-930.
 Yaday S, Singh I, et al. Medullary Carcinoma in a Lingual Thyroid. *Singapore Med J* 2008; 49(3):251-253.
 Dorairajan N, Siddharth D and Kanna S. Review Analysis of Medullary Carcinoma of the Thyroid. A 15-Year-Indian Experience. *Int Surg* 2006;91(3):162-167.
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Case No. 10, Accession No. 30981

February 2010

Duarte (City of Hope) - Merkel cell carcinoma
Woodland Hills - Merkel cell vs. small cell carcinoma of salivary gland, Merkel type
Florida (Naples Pathology Associates) - Merkel cell carcinoma
Georgia, Dunwoody - Merkel cell carcinoma
Hawaii (Medical Examiners Office) - Merkel cell carcinoma
Illinois (Heartland Regional Medical Center) - Small cell anaplastic carcinoma, favor skin primary (Merkel cell tumor)
Illinois (Loyola University Medical Center) - Merkel cell carcinoma
Indiana, Indianapolis - Merkel cell carcinoma
Kansas (Coffeyville Regional Medical Center) - Merkel cell tumor
Kansas (Peterson Laboratory Services) - Merkel cell carcinoma
Louisiana (LSUHSC-Pathology Residents) - Merkel cell carcinoma
Michigan (Henry Ford Hospital Residents) - Merkel cell carcinoma
Mississippi (University of Mississippi) - Merkel cell carcinoma
New York (Albany Medical Center) - Merkel cell carcinoma
New York (St. Lukes-Roosevelt Hospital) - Merkel cell carcinoma (3)

New York (SUNY Downstate Medical Center) - Merkel cell carcinoma
New York (SUNY Stony Brook University Hospital) - Merkel cell carcinoma
New York (Westchester Medical Center) - Merkel cell carcinoma
Ohio, Columbus - Merkel cell carcinoma
Ohio, Dublin - Merkel cell carcinoma
Ohio (University of Toledo) - Merkel cell carcinoma
Pennsylvania (Conemaugh Memorial Hospital) - Merkel cell carcinoma
Pennsylvania (Drexel University College of Medicine Residents) - Merkel cell carcinoma
Pennsylvania (Magee Women's Hospital) - Merkel cell carcinoma
Puerto Rico (University of Puerto Rico) - Merkel cell carcinoma
Tennessee, Knoxville - Merkel cell carcinoma
Texas, Crystal Beach - Merkel cell carcinoma
Texas, Lubbock - Merkel cell carcinoma
Texas (Scott & White Hospital) - Merkel cell carcinoma
Texas (University of Texas Health Science Center Residents) - Merkel cell carcinoma
Washington (University of Washington Medical Center) - Merkel cell carcinoma
Wisconsin (St. Mary's Hospital) - Merkel cell carcinoma
Australia (Royal Prince Alfred Hospital) - Small cell carcinoma of salivary gland
Canada (Pasqua Hospital) - Merkel cell carcinoma
Canada (University of Sherbrooke) - Merkel cell carcinoma
Japan (Asahi General Hospital) - Small cell carcinoma of parotid gland
Japan (University of Yamanashi) - Merkel carcinoma
Netherlands, Amstelveen - Merkel cell carcinoma
Singapore (Freelance/Locum Practice) - Neuroendocrine carcinoma (Merkel cell carcinoma)
Spain (Provisa Medical Center) - Merkel cell carcinoma
United Kingdom (John Radcliffe Hospital) - Merkel cell carcinoma

Case 10 - Diagnosis:

Merkel cell carcinoma, parotid gland
 T-55100, M-80103

Case 10 - References:

Giraldez Rodriguez LA, Giraldez Casasnovas LJ, et al. Merkel Cell Carcinoma of the Cheek with Metastases to the Parotid Gland. A Report of Two Cases. *Bol Assoc Med PR* 2004; 96(1):6-10.
 Gawecki W, Wierzbicka M, et al. Merkel Cell-Carcinoma in the Parotid Gland. Review of Literature and Case Report. *Otolaryngol Pol* 2007; 61(5):724-729.
 Huber GF, Khalil M, et al. Merkel Cell Carcinoma with Solitary Parotid Metastasis. Diagnostic Dilemma in the Absence of a Primary Site. *J Otolaryngol* 2007; 36(5):pE70-72.
 Warnick M, Singh S, et al. Merkel Cell Carcinoma Presenting as Lymphadenopathy Without a Primary Cutaneous Lesion. A Report of 2 Cases. *Arch Dermatol* 2008; 144(10):1397-1398.