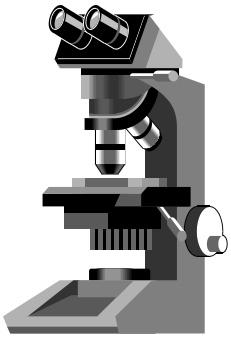
CALIFORNIA
TUMOR TISSUE REGISTRY

"Small Round Blue Cell Tumors and Neuroendocrine Neoplasms"

Minutes – Subscription B

February, 2007



SUGGESTED READING (General Topics from Recent Literature):

What Is the Survival Impact of PTC in Childhood? Collini P, Mattavelli F, et al. *Am J Surg Pathol* 2006; 30:1420-1426.
Can We Predict Invasion Risk in DCIS? Huo L, Sneige N, et al. *Cancer* 2006; 107:1760-1768.
Does Greater Lymph Node Dissection Improve Survival? Chen SL and Bilchik AJ. *Ann Surg* 2006; 602-610.
Breast Core Identification. Method to Avoid Mix-Ups. Ranshaw AA, Kish R and Gould EW. *Am J Clin Pathol* 2007; 127:271-272.
Triple-Negative Breast Carcinoma. Markers of Poor Clinical Outcome. Rakha EA, El-Sayed ME, et al. *Cancer* 2007; 109:25-32.

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FILE DIAGNOSES

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

CTTR Subscription B

Case 1:
Large cell lymphoma, thyroid
T-96000, M-95903

Case 2:
Neuroendocrine carcinoma, possibly variant of medullary carcinoma, thyroid
T-96000, M-80103

Case 3:
Poorly differentiated (insular) carcinoma, thyroid
T-96000, M-80103

Case 4:
Carcinoid tumor (so-called "atypical carcinoid")/well-differentiated neuroendocrine carcinoma, lung
T-28000, M-82403

Case 5:
Carcinoid tumor/neuroendocrine carcinoma, kidney
T-71000, M-82403

Case 6:
Metastatic small cell carcinoma (poorly differentiated neuroendocrine carcinoma), chest wall
T-Y2100, M-80413

Case 7:
Carcinoid tumor ("low grade neuroendocrine carcinoma"), intra-abdominal
T-Y4500, M-82403

Case 8:
Paraganglioma, retroperitoneum
T-Y4600, M-86801

Case 9:
Paraganglioma, chest wall
T-Y2100, M-86801

Case 10:
Merkel cell tumor/carcinoma, groin
T-Y7000, M-80423

Case No. 1 - Accession No. 15082 **February, 2007**

Chatsworth - Lymphoma, necrotic with angiofollicular type
Claremont - Malignant lymphoma
El Camino (El Camino Hospital) - Large cell lymphoma
Escondido - Small lymphocytic lymphoma
Glendale - Lymphoma
San Diego (UCSD Medical Center) - MALT lymphoma arising in Hashimoto thyroiditis (1); Hematolymphoid malignant, favor MALT lymphoma (1)
Arkansas (University of Arkansas Medical Center) - Hematolymphoid neoplasm, favor myelosarcoma vs. lymphoblastic lymphoma, thyroid
Georgia, Decatur - Diffuse large B-cell lymphoma, rule out metastasis
Illinois (Heartland Regional Medical Center) - Non-Hodgkin's malignant lymphoma, large cell
Kansas (Coffeyville Regional Medical Center) - Malignant lymphoma, diffuse
Kentucky (University of Louisville Hospital) - Lymphoma
Maryland (John's Hopkins Hospital) - Diffuse large B-cell lymphoma
Minnesota (University of Minnesota Medical School) - Non-Hodgkin's lymphoma
New York (Nassau University Medical Center) - Large cell malignant lymphoma
New York (Stony Brook University Hospital) - Thymoma
New York (SUNY Downstate Medical Center) - Lymphoma vs. anaplastic thyroid carcinoma
North Carolina (Winston-Salem) - Granulocytic sarcoma
North Carolina (WFU Pathology Residents) - Large cell lymphoma
North Carolina (Womack Army Medical Center) - Lymphoma
Ohio (University of Toledo Residents) - Thymic carcinoma
Oklahoma (Integris Baptist Medical Center) - Diffuse large B-cell lymphoma
Pennsylvania (Conemaugh Memorial Medical Center) - Diffuse large cell lymphoma
Pennsylvania (Wilkes-Barre General Hospital) - Histiocytic lymphoma
Puerto Rico (University of Puerto Rico) - Large cell lymphoma
South Dakota (University of South Dakota Residents) - Lymphoma
Texas, Lubbock - Poorly differentiated follicular carcinoma
Texas (Scott & White Memorial Hospital) - Large cell lymphoma
Australia (Sullivan Nicolaides Pathology) - Malignant lymphoma
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - High grade non-Hodgkin lymphoma, thyroid
Canada (Pasqua Hospital) - Lymphoma
Canada (Sherbrooke University) - Rosai-Dorfman disease
China (Sir Run Run Shaw Hospital) - Diffuse large B-cell lymphoma (1); Malignant lymphoma (1)
Japan (Asahi General Hospital) - Inflammatory pseudotumor
India, Karnataoka - SETTLE
Japan (Hamamatsu University School of Medicine) - Malignant lymphoma
Qatar (Hamad Medical Corporation) - Non-Hodgkin's lymphoma
Saudi Arabia (Maternity & Children's Hospital) - Malignant lymphoma
Saudi Arabia (King Fahad National Guard Hospital) - Lymphoma
Singapore (KK Women's and Children's Hospital) - Lymphoma, MALT? (very poor cell preservation)
Spain (Hospital Povisa) - Non-Hodgkin's lymphoma
The Netherland, Amstelveen - Non-Hodgkin's lymphoma (probably diffuse large B-cell lymphoma), thyroid
United Kingdom (Radcliffe Hospital) - Large cell lymphoma

Case 1 - Diagnosis:

Large cell lymphoma, thyroid
T-96000, M-95903

Director's Note: This case was originally felt to be either a "reticulum cell sarcoma" or a small cell carcinoma in 1966. Mostly by morphology, and the negative keratin, we now feel that it most closely resembles a large cell lymphoma. The diagnosis, however, is controversial. (drc)

Case 1 - References:

Pileri SA, Pasqualucci L and Gaidano G. Aberrant Somatic Hypermutation in Primary Mediastinal Large B-Cell Lymphoma. *Leukemia* 2005; 19(12):2363-2366.
De Paepe P, Achten R, Verhoef G, et al. Large Cleaved and Immunoblastic Lymphoma May Represent Two Distinct Clinicopathologic Entities Within the Group of Diffuse Large B-Cell Lymphomas. *J Clin Oncol* 2005; 23(28):7060-7068.

Lossos IS. Molecular Pathogenesis of Diffuse Large B-Cell Lymphoma. *J Clin Oncol* 2005; 23(26):6351-6357.
Calaminici M, Piper K, Lee AM, et al. CD23 Expression in Mediastinal Large B-Cell Lymphomas. *Histopathol* 2004; 45(6):619-624.
Gascoyne RD. Emerging Prognostic Factors in Diffuse Large B-Cell Lymphoma. *Curr Opin Oncol* 2004; 16(5):436-441.

Case No. 2 - Accession No. 23615 February, 2007

Chatsworth - Carcinoid; Diff Dx: PNET
Claremont - Neuroendocrine carcinoma
El Camino (El Camino Hospital) - Synovial sarcoma vs. SETTLE
Escondido - Carcinoid tumor
Glendale - Carcinoma with thymus-like differentiation (CASTLE)
San Diego (UCSD Medical Center) - PNET vs. synovial sarcoma vs. anaplastic carcinoma, malignant small blue cell tumor (1); Poorly differentiated thyroid carcinoma (1)
Arkansas (University of Arkansas Medical Center) - Medullary carcinoma, thyroid
Georgia, Decatur - Poorly differentiated /insular carcinoid
Illinois (Heartland Regional Medical Center) - Poorly differentiated carcinoma
Kansas (Coffeyville Regional Medical Center) - Neuroendocrine carcinoma
Kentucky (University of Louisville Hospital) - Carcinoma showinig thymus-like differentiation
Maryland (John's Hopkins Hospital) - Poorly differentiated papillary carcinoma (insular CA)
Minnesota (University of Minnesota Medical School) - Insular carcinoma
New York (Nassau University Medical Center) - Papillary carcinoma of thyroid
New York (Stony Brook University Hospital) - Neuroendocrine carcinoma, poorly differentiated thyroid carcinoma
New York (SUNY Downstate Medical Center) - Medullary carcinoma vs. poorly differentiated thyroid carcinoma
North Carolina (Winston-Salem) - Poorly differentiated (insular) carcinoma
North Carolina (WFU Pathology Residents) - Synovial sarcoma vs. poorly differentiated thyroid carcinoma
North Carolina (Womack Army Medical Center) - Poorly differentiated thyroid carcinoma
Ohio (University of Toledo Residents) - Hyalinizing trabecular adenoma
Oklahoma (Integris Baptist Medical Center) - Medullary carcinoma of thyroid
Pennsylvania (Conemaugh Memorial Medical Center) - Neuroendocrine carcinoma
Pennsylvania (Wilkes-Barre General Hospital) - Papillary carcinoma, spindle cell variant
Puerto Rico (University of Puerto Rico) - Medullary thyroid carcinoma
South Dakota (University of South Dakota Residents) - Insular carcinoma
Texas, Lubbock - Insular carcinoma
Texas (Scott & White Memorial Hospital) - Synovial sarcoma
Australia (Sullivan Nicolaides Pathology) - Poorly differentiated thyroid carcinoma
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Synovial sarcoma, thyroid
Canada (Pasqua Hospital) -Poorly differentiated carcinoma
Canada (Sherbrooke University) - Undifferentiated carcinoma
China (Sir Run Run Shaw Hospital) - Paraganglioma
Japan (Asahi General Hospital) - Spindle cell tumor with thymus-like differentiation
India, Karnataoka - Hyalinizing trabecular tumor/medullar carcinoma
Japan (Hamamatsu University School of Medicine) - Carcinoma showing thymus-like differentiation
Qatar (Hamad Medical Corporation) - Insular carcinoma (4); Medullary carcinoma (4)
Saudi Arabia (Maternity & Children's Hospital) - Medullary thyroid carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Poorly differentiated (insular) thyroid carcinoma
Singapore (KK Women's and Children's Hospital) - Spindle cell tumour with thymus-like differentiation "monophasic" (SETTLE). DDx: Synovial sarcoma (generalized cytokeratin expression? Translocation done? Sample more for possible biphasic features)
Spain (Hospital Povisa) - Poorly differentiated carcinoma
The Netherland, Amstelveen - Medullary carcinoma
United Kingdom (Radcliffe Hospital) - Insular carcinoma, thyroid

Case 2 - Diagnosis:

Neuroendocrine carcinoma, possibly variant of medullary carcinoma, thyroid
T-96000, M-80103

Case 2 - References:

Jimenez C, Habra MA, Huang SC, et al. Pheochromocytoma and Medullary Thyroid Carcinoma. A New Genotype-Phenotype Correlation of the RET Protooncogene 891 Germline Mutation. *J Clin Endocrinol Metab* 2004; 89(8):4142-4145.
Baloch ZW and Li Volsi VA. Neuroendocrine Tumors of the Thyroid Gland. *Am J Clin Pathol* 2001; 115 Suppl pS56-67.

Shakama Y, Osawa T, Yagihashi N, et al. Neuroendocrine Differentiation in Hyalinizing Trabecular Tumor of the Thyroid. *Virchows Arch* 2003; 443(6):792-796.
Portel-Gomes GM, Grimelius L, et al. Chromogranin A in Human Neuroendocrine Tumors. An Immunohistochemical Study with Region-Specific Antibodies. *Am J Surg Pathol*; 2001; 25(10):1261-1267.
Boronat M, Isla C, Novoa FJ, et al. A Poorly Differentiated Thyroid Carcinoma with Neuroendocrine Traits. *Thyroid* 2004; 14(2):163-164.

Case No. 3 - Accession No. 19642 February, 2007

Chatsworth - Small cell carcinoma, DDx: Carcinoid PENT
Claremont - Poorly differentiated adenocarcinoma
El Camino (El Camino Hospital) - Poorly differentiated "insular" carcinoma
Escondido - Medullary carcinoma
Glendale - Insular carcinoma
San Diego (UCSD Medical Center) - Poorly differentiated thyroid carcinoma (2)
Arkansas (University of Arkansas Medical Center) - Poorly differentiated (insular) carcinoma, thyroid
Georgia, Decatur - Poorly differentiated carcinoma
Illinois (Heartland Regional Medical Center) - Poorly differentiated carcinoma
Kansas (Coffeyville Regional Medical Center) - Poorly differentiated thyroid carcinoma
Kentucky (University of Louisville Hospital) - Insular carcinoma
Maryland (John's Hopkins Hospital) - Anaplastic carcinoma
Minnesota (University of Minnesota Medical School) - Poorly differentiated carcinoma, insular pattern
New York (Nassau University Medical Center) - Follicular carcinoma
New York (Stony Brook University Hospital) - Insular carcinoma
New York (SUNY Downstate Medical Center) - Insular carcinoma
North Carolina (Winston-Salem) - Undifferentiated carcinoma
North Carolina (WFU Pathology Residents) - Poorly differentiated thyroid carcinoma
North Carolina (Womack Army Medical Center) - Poorly differentiated insular carcinoma
Ohio (University of Toledo Residents) - Atypical carcinoid
Oklahoma (Integris Baptist Medical Center) - Medullary carcinoma of thyroid
Pennsylvania (Conemaugh Memorial Medical Center) - Hurthle cell carcinoma
Pennsylvania (Wilkes-Barre General Hospital) - Trebecular carcinoma, thyroid
Puerto Rico (University of Puerto Rico) - Poorly differentiated carcinoma (insular carcinoma)
South Dakota (University of South Dakota Residents) - Poorly differentiated carcinoma
Texas, Lubbock - Anaplastic carcinoma
Texas (Scott & White Memorial Hospital) - Insular carcinoma
Australia (Sullivan Nicolaides Pathology) - Anaplastic thyroid carcinoma
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Insular carcinoma, thyroid
Canada (Pasqua Hospital) - Poorly differentiated carcinoma
Canada (Sherbrooke University) - Oncocytic papillary carcinoma
China (Sir Run Run Shaw Hospital) - Insular carcinoma (1); Poorly-differentiated carcinoma (1)
Japan (Asahi General Hospital) - Carcinoma showing thymus-like differentiation
India, Karnataoka - Insular carcinoma (poorly differentiated), thyroid
Japan (Hamamatsu University School of Medicine) - Insular carcinoma
Qatar (Hamad Medical Corporation) - Poorly differentiated carcinoma
Saudi Arabia (Maternity & Children's Hospital) - Medullary thyroid carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Papillary thyroid carcinoma
Singapore (KK Women's and Children's Hospital) - Poorly differentiated carcinoma ("insular carcinoma")
Spain (Hospital Povisa) - Undifferentiated carcinoma
The Netherland, Amstelveen - Papillary carcinoma
United Kingdom (Radcliffe Hospital) - Insular carcinoma, thyroid

Case 3 - Diagnosis:

Poorly differentiated (insular) carcinoma, thyroid
T-96000, M-80103

Case 3 - References:

Pellegriti G, Giuffrida D, Scollo C, et al. Long-Term Outcome of Patients with Insular Carcinoma of the Thyroid. The Insular Histotype is an Independent Predictor of poor prognosis. *Cancer* 2002; 95(10):2076-2085.

Decaussin M, Bernard MH, Adeleine P, et al. Thyroid Carcinomas with Distant Metastases. A Review of 111 Cases with Emphasis on the Prognostic Significance of an Insular Component. *Am J Surg Pathol* 2002; 26(8):1007-1015.
Falvo L, Catania A, A'Andrea V, et al. Prognostic Factors of Insular Versus Papillary/Follicular Thyroid Carcinoma. *Am Surg* 2004; 70(5):461-466.
Volante M, Landolfi S, Chiusa L, Palestini N, et al. Poorly Differentiated Carcinomas of the Thyroid with Trabecular, Insular, and Solid Patterns. A Clincopathologic Study of 183 Patients. *Cancer* 2004; 100(5):950-957.
Nguyer GK and Akin MR. Cytopathology of Insular Carcinoma of the Thyroid. *Diagn Cytopathol* 2001; 25(5):325-330.

Case No. 4 - Accession No. 20347 February, 2007

Chatsworth - Neuroendocrine carcinoma, DDx: Carcinoid
Claremont - Carcinoid
El Camino (El Camino Hospital) - Atypical carcinoid
Escondido - Neuroendocrine carcinoma
Glendale - Atypical carcinoid
San Diego (UCSD Medical Center) - Well-differentiated neuroendocrine carcinoma (atypical carcinoid) (1); Well-differentiated neuroendocrine carcinoma/atypical carcinoid (1)
Arkansas (University of Arkansas Medical Center) - Bronchial carcinoid tumor, lung
Georgia, Decatur - Atypical carcinoid
Illinois (Heartland Regional Medical Center) - Atypical carcinoid (neuroendocrine carcinoma, grade 2)
Kansas (Coffeyville Regional Medical Center) - Carcinoid tumor
Kentucky (University of Louisville Hospital) - Atypical carcinoid
Maryland (John's Hopkins Hospital) - Carcinoid
Minnesota (University of Minnesota Medical School) - Atypical carcinoid/low grade neuroendocrine carcinoma
New York (Nassau University Medical Center) - Atypical carcinoid
New York (Stony Brook University Hospital) - Large cell neuroendocrine carcinoma
New York (SUNY Downstate Medical Center) - Neuroendocrine carcinoma
North Carolina (Winston-Salem) - Low grade neuroendocrine carcinoma
North Carolina (WFU Pathology Residents) - Atypical carcinoid tumor
North Carolina (Womack Army Medical Center) - Low grade neuroendocrine carcinoma
Ohio (University of Toledo Residents) - Carcinoid
Oklahoma (Integris Baptist Medical Center) - Large cell neuroendocrine carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Metastatic carcinoid
Pennsylvania (Wilkes-Barre General Hospital) - Atypical carcinoid tumor
Puerto Rico (University of Puerto Rico) - Atypical carcinoid
South Dakota (University of South Dakota Residents) - Atypical carcinoid tumor
Texas, Lubbock - Anaplastic carcinoma
Texas (Scott & White Memorial Hospital) - Pulmonary carcinoid
Australia (Sullivan Nicolaides Pathology) - Atypical carcinoid
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Atypical carcinoid, lung
Canada (Pasqua Hospital) - Carcinoid
Canada (Sherbrooke University) - Well-differentiated neuroendocrine carcinoma
China (Sir Run Run Shaw Hospital) - Atypical carcinoid carcinoma of lung (1); Central carcinoid tumor (1)
Japan (Asahi General Hospital) - Atypical carcinoid tumor
India, Karnataoka - Large cell neuroendocrine carcinoma, lung
Japan (Hamamatsu University School of Medicine) - Adenocarcinoma, poorly differentiated
Qatar (Hamad Medical Corporation) - Atypical carcinoid
Saudi Arabia (Maternity & Children's Hospital) - Carcinoid tumor
Saudi Arabia (King Fahad National Guard Hospital) - Atypical carcinoid
Singapore (KK Women's and Children's Hospital) - Atypical carcinoid
Spain (Hospital Povisa) - Large cell neuroendocrine carcinoma
The Netherland, Amstelveen - Atypical carcinoid
United Kingdom (Radcliffe Hospital) - Atypical carcinoid (6); Neuroendocrine carcinoma (2)

Case 4 - Diagnosis:

Carcinoid tumor (so-called "atypical carcinoid")/well-differentiated neuroendocrine carcinoma, lung
T-28000, M-82403

Case 4 - References:

Kosmidis PA. Treatment of Carcinoid of the Lung. *Curr Opin Oncol* 2004; 16(2):146-149.

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.

Hage R, de la Riviere AB, Seldenrijk CA, et al. Update in Pulmonary Carcinoid Tumors. A Review Article. *Ann Surg Oncol* 2003; 10(6):697-704.

Petzmann S, Ullmann R, Klemen H, et al. Loss of Heterozygosity on Chromosome Arm 11q in Lung Carcinoids. *Hum Pathol* 2001; 32(3):333-338.

Pelosi G, Rodriquez J, Viale G, 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.

Du EZ, Goldstraw P, Zacharias J, 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.

Case No. 5 - Accession No. 30435 February, 2007

Chatsworth - Neuroendocrine carcinoma, DDx: Carcinoid
Claremont - Carcinoid
El Camino (El Camino Hospital) - Neuroendocrine carcinoma (carcinoid tumor)
Escondido - Neuroendocrine carcinoma
Glendale - Renal carcinoid
San Diego (UCSD Medical Center) - Well-differentiated neuroendocrine carcinoma (atypical carcinoid) (1); Carcinoid (1)
Arkansas (University of Arkansas Medical Center) - Renal carcinoid tumor, kidney
Georgia, Decatur - Carcinoid tumor
Illinois (Heartland Regional Medical Center) - Atypical carcinoid (neuroendocrine carcinoma , grade 2)
Kansas (Coffeyville Regional Medical Center) - Renal carcinoid tumor
Kentucky (University of Louisville Hospital) - Renal carcinoid
Maryland (John's Hopkins Hospital) - Malignant neuroendocrine neoplasm
Minnesota (University of Minnesota Medical School) - Carcinoid
New York (Nassau University Medical Center) - Neuroendocrine carcinoma
New York (Stony Brook University Hospital) - Carcinoid tumor
New York (SUNY Downstate Medical Center) - Carcinoid tumor
North Carolina (Winston-Salem) - Low grade neuroendocrine carcinoma
North Carolina (WFU Pathology Residents) - Carcinoid tumor
North Carolina (Womack Army Medical Center) - Carcinoid
Ohio (University of Toledo Residents) - Paraganglioma/juxtaglomerular tumor
Oklahoma (Integris Baptist Medical Center) - Renal carcinoid tumor
Pennsylvania (Conemaugh Memorial Medical Center) - Carcinoid
Pennsylvania (Wilkes-Barre General Hospital) - Carcinoid tumor, kidney
Puerto Rico (University of Puerto Rico) - Neuroendocrine carcinoma of kidney
South Dakota (University of South Dakota Residents) - Carcinoid tumor
Texas, Lubbock - Carcinoid tumor
Texas (Scott & White Memorial Hospital) - Renal carcinoid tumor
Australia (Sullivan Nicolaides Pathology) - Carcinoid
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Carcinoid tumor, kidney
Canada (Pasqua Hospital) - Carcinoid
Canada (Sherbrooke University) - High grade neuroendocrine carcinoma
China (Sir Run Run Shaw Hospital) - Malignant carcinoid carcinoma of kidney (2)
Japan (Asahi General Hospital) - Renal carcinoid tumor
India, Karnataoka - Carcinoid kidney
Japan (Hamamatsu University School of Medicine) - Carcinoid tumor
Qatar (Hamad Medical Corporation) - Neuroendocrine carcinoma
Saudi Arabia (Maternity & Children's Hospital) - Neuroendocrine carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Neuroendocrine carcinoma, moderately differentiated
Singapore (KK Women's and Children's Hospital) - Carcinoid
Spain (Hospital Povisa) - Renal carcinoid tumor
The Netherland, Amstelveen - Carcinoid
United Kingdom (Radcliffe Hospital) - Renal carcinoid

Case 5 - Diagnosis:

Carcinoid tumor/neuroendocrine carcinoma, kidney
T-71000, M-82403

Case 5 - References:

Cole EE, De Souza R, Shappell S, et al. Primary Renal Carcinoid Tumor. *J Urol* 2004; 171(1):338.
Quinchon JF, Aubert S, Biserte J, et al. Primary Atypical Carcinoid of the Kidney. A Classification is Needed. *Pathol* 2003; 35(4):353-355.
Kurzer E, Leveillee RJ and Morillo G. Rare Case of Carcinoid Tumor Arising Within Teratoma in Kidney. *Urol* 2005; 66(3):658.
Kawajiri H, Onoda N, Ohira M, et al. Carcinoid Tumor of the Kidney Presenting as a Large Abdominal Mass. Report of a Case. *Surg Today* 2004; 34(1):86-89.

Case No. 6 - Accession No. 23492 February, 2007

Chatsworth - Metastatic oat cell carcinoma
Claremont - Metastatic small cell carcinoma
El Camino (El Camino Hospital) - Small cell neuroendocrine carcinoma
Escondido - Small cell carcinoma
Glendale - Ewing's/PNET
San Diego (UCSD Medical Center) - PNET/Askin tumor
Arkansas (University of Arkansas Medical Center) - Metastatic pulmonary small cell carcinoma, chest wall
Georgia, Decatur - PNET/Askin tumor
Illinois (Heartland Regional Medical Center) - Small cell anaplastic carcinoma
Kansas (Coffeyville Regional Medical Center) - Metastatic neuroendocrine carcinoma
Kentucky (University of Louisville Hospital) - Small cell carcinoma
Maryland (John's Hopkins Hospital) - Small cell carcinoma
Minnesota (University of Minnesota Medical School) - Metastatic small cell carcinoma
New York (Nassau University Medical Center) - Small cell carcinoma, neuroendocrine type
New York (Stony Brook University Hospital) - Metastatic small cell carcinoma
New York (SUNY Downstate Medical Center) - Small cell carcinoma
North Carolina (Winston-Salem) - Small cell carcinoma
North Carolina (WFU Pathology Residents) - Small cell carcinoma
North Carolina (Womack Army Medical Center) - Small cell carcinoma
Ohio (University of Toledo Residents) - Small cell carcinoma
Oklahoma (Integris Baptist Medical Center) - Small cell carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Metastatic small cell carcinoma
Pennsylvania (Wilkes-Barre General Hospital) - Metastatic small cell carcinoma
Puerto Rico (University of Puerto Rico) - Small cell carcinoma, metastatic from lung
South Dakota (University of South Dakota Residents) - Small cell carcinoma
Texas, Lubbock - Small cell carcinoma
Texas (Scott & White Memorial Hospital) - Small cell carcinoma
Australia (Sullivan Nicolaides Pathology) - Metastatic small cell undifferentiated carcinoma
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Recurrence of small cell lung carcinoma (oat cell)
Canada (Pasqua Hospital) - Small cell carcinoma
Canada (Sherbrooke University) - PNET (Askin's tumor)
China (Sir Run Run Shaw Hospital) - Small cell carcinoma (2)
Japan (Asahi General Hospital) - Small cell carcinoma
India, Karnataoka - Small cell carcinoma, lung
Japan (Hamamatsu University School of Medicine) - Atypical carcinoid
Qatar (Hamad Medical Corporation) - Small cell carcinoma
Saudi Arabia (Maternity & Children's Hospital) - Small cell carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Metastatic small cell carcinoma
Singapore (KK Women's and Children's Hospital) - Small cell carcinoma
Spain (Hospital Povisa) - Small cell carcinoma
The Netherland, Amstelveen - Small cell lung cancer
United Kingdom (Radcliffe Hospital) - Metastatic small cell carcinoma

Case 6 - Diagnosis:

Metastatic small cell carcinoma (poorly differentiated neuroendocrine carcinoma), chest wall
T-Y2100, M-80413

Case 6 - References:

Chu PG, Cerilli L, Chen YY, et al. Epstein-Barr Virus Plays No Role in the Tumorigenesis of Small Cell Carcinoma of the Lung. *Mod Pathol* 2004; 17(2):158-164.

Huang Q, Muzitansky A and Mark EJ. Pulmonary Neuroendocrine Carcinomas. A Review of 234 Cases and A Statistical Analysis of 50 Cases Treated at Once Institution Using a Simple Clinicopathologic Classification. *Arch Pathol Lab Med* 2002; 126(11):1268.

Mitry E and Rougier P. The Treatment of Undifferentiated Neuroendocrine Tumors. *Crit Rev Oncol Hematol* 2001; 37(1):47-51.

Pedersen N, Pedersen MW, Poulsen TT, et al. New Targets for Detection and Treatment of Small Cell Lung Cancer. *Chest* 2004;125(5 Suppl) 154S.

Positron Emission Tomography in the Staging of Small-Cell Lung Cancer. A Preliminary Study. *Chest* 2001; 119(3):950-954.

Case No. 7 - Accession No. 23767 February, 2007

Chatsworth - Neuroendocrine carcinoma, carcinoid
Claremont - Neuroendocrine carcinoma
El Camino (El Camino Hospital) - Carcinoid tumor
Escondido - Carcinoid tumor
Glendale - Carcinoid
San Diego (UCSD Medical Center) - Carcinoid (well-differentiated tumor) (1); Carcinoid (1)
Arkansas (University of Arkansas Medical Center) - Carcinoid tumor, small intestine
Georgia, Decatur - Carcinoid tumor
Illinois (Heartland Regional Medical Center) - Carcinoid tumor
Kansas (Coffeyville Regional Medical Center) - Carcinoid tumor of small bowel
Kentucky (University of Louisville Hospital) - Carcinoid
Maryland (John's Hopkins Hospital) - Well-differentiated neuroendocrine neoplasm
Minnesota (University of Minnesota Medical School) - Low grade neuroendocrine carcinoma (malignant carcinoid)
New York (Nassau University Medical Center) - Carcinoid with vascular invasion
New York (Stony Brook University Hospital) - Neuroendocrine carcinoma (low grade)
New York (SUNY Downstate Medical Center) - Carcinoid
North Carolina (Winston-Salem) - Carcinoid tumor
North Carolina (WFU Pathology Residents) - Carcinoid tumor
North Carolina (Womack Army Medical Center) - Low grade neuroendocrine carcinoma
Ohio (University of Toledo Residents) - Carcinoid
Oklahoma (Integris Baptist Medical Center) - Carcinoid tumor
Pennsylvania (Conemaugh Memorial Medical Center) - Carcinoid
Pennsylvania (Wilkes-Barre General Hospital) - Carcinoid tumor, small bowel
Puerto Rico (University of Puerto Rico) - Well-differentiated neuroendocrine tumor (carcinoid)
South Dakota (University of South Dakota Residents) - Carcinoid tumor
Texas, Lubbock - Desmoplastic small cell carcinoma
Texas (Scott & White Memorial Hospital) - Gastrointestinal carcinoid
Australia (Sullivan Nicolaides Pathology) - Carcinoid
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Well-differentiated neuroendocrine tumor, small bowel
Canada (Pasqua Hospital) - Carcinoid
Canada (Sherbrooke University) - Well-differentiated neuroendocrine carcinoma
China (Sir Run Run Shaw Hospital) - Carcinoid carcinoma (1); Involving muscular layer (malignant) (1)
Japan (Asahi General Hospital) - Carcinoid tumor
India, Karnataoka - Carcinoid jejunum
Japan (Hamamatsu University School of Medicine) - Carcinoid tumor
Qatar (Hamad Medical Corporation) - Carcinoid tumor, classical
Saudi Arabia (Maternity & Children's Hospital) - Carcinoid tumor
Saudi Arabia (King Fahad National Guard Hospital) - Neuroendocrine tumor (carcinoid)
Singapore (KK Women's and Children's Hospital) - Well-differentiated endocrine tumour
Spain (Hospital Povisa) - Classic carcinoid tumor
The Netherland, Amstelveen - Carcinoid of the small bowel
United Kingdom (Radcliffe Hospital) - Well-differentiated neuroendocrine tumor (carcinoid)

Case 7 - Diagnosis:

Carcinoid tumor ("low grade neuroendocrine carcinoma"), intra-abdominal
T-Y4500, M-82403

Case 7 - References:

Elgersma OE. Diagnostic Image (43). Carcinoid of Mesentery of Small Intestine and Hepatic Metastases. *Ned Tijdschr Geneeskd* (Netherlands) 2001; 145(25):1204.

Akerstrom G, Helliman P, Hessman O, et al. Management of Midgut Carcinoids. *J Surg Oncol* 2005; 89(3):161-169.

Carpenter SS and Grillis ME. Meckel's Diverticulitis Secondary to Carcinoid Tumor. An Unusual Presentation of the Acute Abdomen in an Adult. *Curr Surg* 2003; 60(3):301-303.

Zhang PJ Furth EE, Cai X, et al. The Role of Beta-Catenin, TGF Beta 3 NGF2, FGF2, IGFR2, and BMP4 in the Patholgenesis of Mesenteric Sclerosis and Angiopathy in Midgut Carcinoids. *Hum Pathol* 2004; 35(6):670-674.

Modlin IM, Shapiro MD and Kidd M. Carcinoid Tumors and Fibrosis. An Association with No Explanation. *Am J Gastroenterol* 2004; 99(12):2466-2478.

Case No. 8 - Accession No. 23999 February, 2007

Chatsworth - Undifferentiated blue cell tumor, DDx: Adrenal cortical carcinoma
Claremont - Paraganglioma
El Camino (El Camino Hospital) - Paraganglioma
Escondido - Metastatic papillary carcinoma
Glendale - Paraganglioma
San Diego (UCSD Medical Center) - Paraganglioma, extra-adrenal
Arkansas (University of Arkansas Medical Center) - Pheochromocytoma, retroperitoneum
Georgia, Decatur - Paraganglioma
Illinois (Heartland Regional Medical Center) - Paraganglioma
Kansas (Coffeyville Regional Medical Center) - Adrenal cortical tumor
Kentucky (University of Louisville Hospital) - Pheochromocytoma
Maryland (John's Hopkins Hospital) - Paraganglioma
Minnesota (University of Minnesota Medical School) - Paraganglioma
New York (Nassau University Medical Center) - Paraganglioma
New York (Stony Brook University Hospital) - Paraganglioma
New York (SUNY Downstate Medical Center) - Paraganglioma vs. oncocytic carcinoid vs. pancreatic endocrine tumor
North Carolina (Winston-Salem) - Alveolar rhabdomyosarcoma
North Carolina (WFU Pathology Residents) - Adrenal cortical carcinoma vs. pheochromocytoma
North Carolina (Womack Army Medical Center) - Paraganglioma
Ohio (University of Toledo Residents) - Pancreatic endocrine neoplasm
Oklahoma (Integris Baptist Medical Center) - Paraganglioma
Pennsylvania (Conemaugh Memorial Medical Center) - Paraganglioma
Pennsylvania (Wilkes-Barre General Hospital) - Papillary carcinoma, kidney
Puerto Rico (University of Puerto Rico) - Paraganglioma/solid-pseudopapillary tumor of pancreas
South Dakota (University of South Dakota Residents) - Paraganglioma
Texas, Lubbock - Paraganglioma
Texas (Scott & White Memorial Hospital) - Paraganglioma
Australia (Sullivan Nicolaides Pathology) - Paraganglioma
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Paraganglioma, retroperitoneum
Canada (Pasqua Hospital) - Pheochromocytoma
Canada (Sherbrooke University) - Neuroendocrine lesion (paraganglioma)
China (Sir Run Run Shaw Hospital) - Pheochromocytoma (2)
Japan (Asahi General Hospital) - Paraganglioma
India, Karnataoka - Pheochromocytoma
Japan (Hamamatsu University School of Medicine) - Paraganglioma
Qatar (Hamad Medical Corporation) - Extra renal paraganglioma
Saudi Arabia (Maternity & Children's Hospital) - Pheochromocytoma
Saudi Arabia (King Fahad National Guard Hospital) - Paraganglioma
Singapore (KK Women's and Children's Hospital) - Paraganglioma
Spain (Hospital Povisa) - Extra-adrenal paraganglioma
The Netherland, Amstelveen - Pancreatic endocrine neoplasm
United Kingdom (Radcliffe Hospital) - Paraganglioma

Case 8 - Diagnosis:

Paraganglioma, retroperitoneum
T-Y4600, M-86801

Case 8 - References:

Gong Y, De Frias DV and Nayer R. Pitfalls in Fine Needle Aspiration Cytology of Extra-Adrenal Paraganglioma. A Report of 2 Cases. *Acta Cytol* 2003; 47(6):1082-1086.

Barfield R, Hill DA, Hoffer FA, et al. Retroperitoneal Paraganglioma. *Med Pediatr Oncol* 2002; 39(2):120-124.

Mikolaenko I and Conner MG. A Retroperitoneal Mass in a 44-Year-Old Woman with Recurrent Myocardial Infarctions. Arch *Pathol Lab Med* 2001; 125(10):1387-1388.

Akdamar MK, Eltoum I and Eloubeidi MA. Retroperitoneal Paraganglioma. EUS Appearance and Risk Associated with EUS-Guided FNA. *Gastrointest Endosc* 2004; 60(6):1018-1021.

Absher KJ, Witte DA, Truong LD, et al. Aspiration Biopsy of Osseous Metastasis of Retroperitoneal Paraganglioma. Report of a Case with Cytologic Features and Differential Diagnostic Considerations. *Acta Cytol* 2001; 45(2):249-253.

Case No. 9 - Accession No. 30346 February, 2007

Chatsworth - Metastatic carcinoma neuroendocrine
Claremont - Neuroendocrine carcinoma
El Camino (El Camino Hospital) - Paraganglioma vs. alveolar soft part sarcoma
Escondido - Malignant paraganglioma
Glendale - Paraganglioma
San Diego (UCSD Medical Center) - Paraganglioma (2)
Arkansas (University of Arkansas Medical Center) - Extra-adrenal paraganglioma, chest wall
Georgia, Decatur - Paraganglioma
Illinois (Heartland Regional Medical Center) - Paraganglioma
Kansas (Coffeyville Regional Medical Center) - Alveolar soft part sarcoma
Kentucky (University of Louisville Hospital) - Alveolar rhabdomyosarcoma
Maryland (John's Hopkins Hospital) - Paraganglioma
Minnesota (University of Minnesota Medical School) - Paraganglioma
New York (Nassau University Medical Center) - Paraganglioma
New York (Stony Brook University Hospital) - Paraganglioma
New York (SUNY Downstate Medical Center) - Paraganglioma vs. alveolar soft part sarcoma
North Carolina (Winston-Salem) - Paraganglioma
North Carolina (WFU Pathology Residents) - Pheochromocytoma vs. alveolar soft part sarcoma
North Carolina (Womack Army Medical Center) - Paraaganglioma
Ohio (University of Toledo Residents) - Paraganglioma
Oklahoma (Integris Baptist Medical Center) - Paraganglioma
Pennsylvania (Conemaugh Memorial Medical Center) - Paraganglioma
Pennsylvania (Wilkes-Barre General Hospital) - Paraganglioma
Puerto Rico (University of Puerto Rico) - Paraganglioma
South Dakota (University of South Dakota Residents) - Paraganglioma
Texas, Lubbock - Malignant granular cell tumor
Texas (Scott & White Memorial Hospital) - Alveolar rhabdomyosarcoma
Australia (Sullivan Nicolaides Pathology) - Alveolar soft part sarcoma
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Paraganglioma, chest wall
Canada (Pasqua Hospital) - Paraganglioma
Canada (Sherbrooke University) - Alveolar soft part sarcoma
China (Sir Run Run Shaw Hospital) - Paraganglioma (2)
Japan (Asahi General Hospital) - Alveolar soft part sarcoma
India, Karnataoka - Paraganglioma mets
Japan (Hamamatsu University School of Medicine) - Paraganglioma
Qatar (Hamad Medical Corporation) - Paraganglioma
Saudi Arabia (Maternity & Children's Hospital) - Pheochromocytoma
Saudi Arabia (King Fahad National Guard Hospital) - Paraganglioma
Singapore (KK Women's and Children's Hospital) - Paraganglioma
Spain (Hospital Povisa) - Extra-adrenal paraganglioma
The Netherland, Amstelveen - Paraganglioma
United Kingdom (Radcliffe Hospital) - Paraganglioma

Case 9 - Diagnosis:

Paraganglioma, chest wall
T-Y2100, M-86801

Case 9 - References:

Tateishi U, Gladish GW, Kusumoto M, et al. Chest Wall Tumors. Radiologic Findings and Pathologic Correlation, Part 2. Malignant Tumors. *Radiographics* 2003; 23(6):1491-1508.
Goel A, Gupta SK, Dey P, et al. Cytologic Spectrum of 227 Fine-Needle Aspiration Cases of Chest-Wall Lesions. *Diagn Cytopathol* 2001; 24(6):384-388.
Safford SD, Coleman RE, Gockerman JP, et al. Iodine-131 Metaiodobenzylguanidine is an Effective Treatment for Malignant Pheochromocytoma and Paraganglioma. *Surg* 2003; 134(6):956-962.
Auertine CL and Flieder DB. Primary Paraganglioma of the Lung. *Ann Diagn Pathol* 2004; 8(4):237-241.

Case No. 10 - Accession No. 30368 February, 2007

Chatsworth - Undifferentiated blue cell tumor vs. neuroendocrine carcinoma
Claremont - Merkle cell carcinoma
El Camino (El Camino Hospital) - Merkle cell carcinoma
Escondido - Neuroendocrine carcinoma
Glendale - Merkel cell carcinoma
San Diego (UCSD Medical Center) - Merkel cell carcinoma (2)
Arkansas (University of Arkansas Medical Center) - Metastatic cutaneous neuroendocrine (Merkel cell) carcinoma, lymph node
Georgia, Decatur - Merkel cell carcinoma
Illinois (Heartland Regional Medical Center) - Small cell malignant neoplasm, favor Merkel cell tumor
Kansas (Coffeyville Regional Medical Center) - Metastatic chondroblastoma
Kentucky (University of Louisville Hospital) - Metastatic Merkel cell carcinoma
Maryland (John's Hopkins Hospital) - Merkel cell carcinoma
Minnesota (University of Minnesota Medical School) - Metastatic Merkel cell carcinoma
New York (Stony Brook University Hospital) - Merkel cell carcinoma
New York (SUNY Downstate Medical Center) - Merkel cell carcinoma
North Carolina (Winston-Salem) - Merkel cell carcinoma
North Carolina (WFU Pathology Residents) - Metastatic Merkel cell carcinoma
North Carolina (Womack Army Medical Center) - Merkel cell carcinoma
Ohio (University of Toledo Residents) - Merkel cell
Oklahoma (Integris Baptist Medical Center) - Metastatic Merkel cell carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Metastatic Merkel cell carcinoma/small cell carcinoma
Pennsylvania (Wilkes-Barre General Hospital) - Metastatic Merkel cell tumor
Puerto Rico (University of Puerto Rico) - Neuroendocrine carcinoma (Merkel cell carcinoma), metastatic
South Dakota (University of South Dakota Residents) - Merkel cell tumor
Texas, Lubbock - Merkel cell carcinoma
Texas (Scott & White Memorial Hospital) - Merkel cell carcinoma
Australia (Sullivan Nicolaides Pathology) - Metastatic Merkel cell carcinoma
Brazil (Laboratorio Antomia Pathologica Citologia Ltda) - Metasatic Merkel cell carcinoma
Canada (Pasqua Hospital) - Merkel cell carcinoma
Canada (Sherbrooke University) - Small round cell tumor
China (Sir Run Run Shaw Hospital) - Merkel cell carcinoma (1); Merkel cell tumor, metastasis in lymph node (1)
Japan (Asahi General Hospital) - Merkel cell carcinoma
India, Karnataoka - Mets small cell carcinoma lung/PNET
Japan (Hamamatsu University School of Medicine) - Merkel cell carcinoma
Qatar (Hamad Medical Corporation) - Metastatic small round blue cell tumor, favor Merkel cell carcinoma
Saudi Arabia (Maternity & Children's Hospital) - Small round cell tumor
Saudi Arabia (King Fahad National Guard Hospital) - Merkel cell carcinoma
Singapore (KK Women's and Children's Hospital) - Metastatic Merkel cell carcinoma
Spain (Hospital Povisa) - Merkel cell carcinoma (metastatic tumors)
The Netherland, Amstelveen - Metastatic Merkel cell carcinoma
United Kingdom (Radcliffe Hospital) - Metastatic Merkel cell carcinoma (7); Metastatic PNET/Ewing (1)

Case 10 - Diagnosis:

Merkel cell tumor/carcinoma, groin
T-Y7000, M-80423

Case 10 - References:

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

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 Carcinomas. *Am J Surg Pathol* 2005; 687-692.

Strong S, Shalders K, Carr R, et al. KIT Receptor (CD117) Expression in Merkel Cell Carcinoma. *Br J Dermatol* 2004; 150(2):384-385.

Krasagakis K and Tosca AD. Overview of Merkel Cell Carcinoma and Recent Advances In Research. *Int J Dermatol* 2003; 42(9):669-676.

Herbst A, Haynes HA and Hghiem P. The Standard of Care for Merkel Cell Carcinoma Should Include Adjuvant Radiation and Lymph Node Surgery. *J am Acad Dermatol* 2002; 46(4):640-642.

Leech SN, Kolar AJ, Barrett PD, et al. Merkel Cell Carcinoma Can Be Distinguished From Metastatic Small Cell Carcinoma Using Antibodies to Cytokeratin 20 and Thyroid Transcription Factor 1. *J Clin Pathol* 2001; 54(9):727-729.