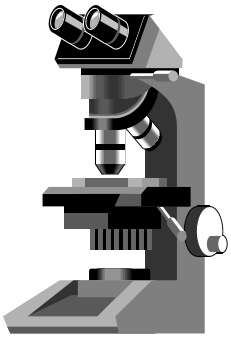
CALIFORNIA
TUMOR TISSUE REGISTRY

URINARY TRACT PATHOLOGY

Minutes – Subscription A

February, 2006



SUGGESTED READING (General Topics from Recent Literature):

Intenzo CM, Jabbour S, Dam HQ, et al. Changing Concepts in the Management of Differentiated Thyroid Cancer. *Sem in Nuclear Med* 2005; 35:257-265.

Grossman HB, Soloway M, Messing E, et al. Surveillance for Recurrent Bladder Cancer Using a Point of Care Proteomic Assay. *JAMA* 2006; 295(3):299-305.

Chen C-J, Yang H-I, Su Jun, et al. Risk of Hepatocellular Carcinoma Across a Biological Gradient of Serum Hepatitis B Virus DNA Level. *JAMA* 2006; 295:65-73.

Carethers JM. Unwinding the Heterogeneous Nature of Hamartomatous Polyposis Syndromes. *JAMA* 2005; 294(19): 2498-2500.

Stojadinovic A, Allen PJ, Protic M, et al. Colon Sentinel Lymph Node Mapping. Practical Surgical Applications. *J Am Coll Surg* 2005; 297-313.

Wright WE, and Shay Jerry. Telomere Biology in Aging and Cancer *JAGS* 2005; 53(9 Sppl):292-294.

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FILE DIAGNOSES

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

CTTR Subscription A February, 2006

Case 1:
Angiomyolipoma, kidney
T-71000, M-88610

Case 2:
Adult polycystic disease
T-71000, M-33800

Case 3:
Renal oncocytoma
T-71000, M-82900

Case 4:
Conventional renal cell carcinoma, clear cell type
T-71020, M-83123

Case 5:
Renal oncocytoma
T-71000, M-83123

Case 6:
Papillary renal cell carcinoma
T-71000, M-83123

Case 7:
Chromophobe renal cell carcinoma
T-71000, M-83123

Case 8:
Sarcomatoid renal cell carcinoma
T-71000, M-83123

Case 9:
Primitive neuroectodermal tumor (PNET)
T-71000, M-93630

Case 10:
Papillary urothelial carcinoma
T-71000, M-81203

Alameda (Alameda County Medical Center) - Angiomyolipoma
Arcadia (Garfield Medical Center) - Angiomyolipoma
Baldwin Park (Kaiser Permanente) - Angiomyolipoma (3)
Fontana (Kaiser Permanente Hospital) - Angiomyolipoma
Glendale - Angiolipoma
Hayward/Fremont - Angiomyolipoma
Loma Linda (Loma Linda University Pathology Residents) - Angiomyolipoma
Long Beach (Lakewood Regional Medical Center) - Angiomyolipoma (9)
Monterey Park (Garfield Medical Center) - Angiomyolipoma
Monterey Park (Monterey Peninsula Pathologists) - Angiomyolipoma
Mountain View (El Camino Pathology Group) - Angiomyolipoma
Oakland (Kaiser Permanente) - Angiomyolipoma (4)
Orange (Orange County Medical Group) - Angiomyolipoma
Oxnard (St. John's Regional Medical Center) - Angiomyolipoma (4)
San Diego (Naval Medical Center) - Angiomyolipoma
San Francisco (San Francisco General Hospital) - Angiomyolipoma
Santa Rosa (Santa Rosa Memorial Hospital) - Angiomyolipoma (3)
Ventura - Angiomyolipoma
Woodland Hills (Kaiser Permanente) - Angiomyolipoma (2)
Arkansas (University of Arkansas Medical Center) - Angiomyolipoma, kidney
Colorado, Evergreen - Angiomyolipoma
Florida (Baptist Hospital) - Angiomyolipoma (5)
Florida (Jackson Memorial Hospital) - Angiomyolipoma
Florida, Tallahassee - Angiomyolipoma (pecoma)
Florida (Winter Haven Hospital) - Angiomyolipoma
Illinois, Burr Ridge - Angiomyolipoma
Illinois (Evanston Hospital) - Angiomyolipoma
Illinois (Loyola University Medical Center) - Angiomyolipoma
Illinois (Naval Hospital Great Lakes) - Angiomyolipoma
Indiana (Kokamo Pathologist Health System) - Angiomyolipoma
Louisiana (Orleans Parish Coroners Office) - Angiomyolipoma
Maryland (Northwest Hospital Center) - Angiomyolipoma
Maryland (University of Maryland) - Angiomyolipoma
Massachusetts (New England Medical Center) - Angiomyolipoma
Michigan, Kalamazoo - Angiomyolipoma
Michigan (Oakwood Hospital) - Angiomyolipoma
Michigan (Pathology Services West Michigan) - Angiomyolipoma
Nebraska (Creighton University School of Medicine) - Angiomyolipoma
New York (Long Island Jewish Medical Center) - Angiomyolipoma
New York (Nassau University Medical Center) - Angiomyolipoma
New York (Stony Brook University Hospital Residents) - Angiomyolipoma (2)
New York (Westchester Medical Center) - Angiomyolipoma
North Carolina (Mountain Area Pathology) - Angiomyolipoma (3)
North Carolina (Pisgah Association of Pathology) - Angiomyolipoma
Oklahoma, Oklahoma City - Angiomyolipoma
Pennsylvania (Conemaugh Memorial Medical Center) - Angiomyolipoma
Pennsylvania (Drexel University College of Medicine) - Angiomyolipoma
Pennsylvania (Mt. Nittany Medical Center) - Angiomyolipoma
Pennsylvania (Pennsylvania Hospital Residents) - Angiomyolipoma
Puerto Rico (University of Puerto Rico) - Angiomyolipoma
Texas, Lubbock - Angiomyolipoma
Texas (Methodist Hospital at Houston) - Angiomyolipoma
Texas (Propath Associates) - Angiomyolipoma (2)
Texas (Scott & White Memorial Hospital) - Angiomyolipoma
Texas (Wilford Hall Medical Center) - Angiomyolipoma
West Virginia (Greenbrier Valley Medical Center) - Angiomyolipoma
West Virginia (Wetzel County Hospital) - Angiomyolipoma
Wisconsin (Bellin Health) - Angiomyolipoma
Wisconsin (Meriter Hospital) - Angiomyolipoma
Wisconsin (Pathology Associates of Wisconsin) - Angiomyolipoma (2)
Australia (North Queensland Pathology) - Angiomyolipoma

Australia (Royal Prince Alfred Hospital) - Angiolipoma
Australia (Sullivan Nicolaides Pathology) - Angiomyolipoma
Brazil, San Paulo - Angiomyolipoma
Germany (UKE Kerninstitut fur Pathologie) - Angiomyolipoma
Jamaica (University of the West Indies) - Angiomyolipoma
Japan (Kyoto University Hospital) - Angiomyolipoma
New Zealand (Otago Diagnostic Labortories) - Angiomyolipoma
Oman (Khoula Hospital) - Angiomyolipoma
Qatar (Hamad Medical Corporation) - Angiomyolipoma
Saudi Arabia (King Fahad National Guard Hospital) - Angiomyolipoma

Case 1 - Diagnosis:

Angiomyolipoma, kidney
T-71000, M-88610

Case 1 – References:

Hung SW and Kinouchi T. Is Higher Contrast-Enhancement on Post-Contrast CT Image Enough to Make the Differential Diagnosis Between AML and RCC? *Int J Clin Oncol* 2004; 9(2):139-141.

Yaldiz M, Kilinc N and Ozdemir E. Strong Association of HMB-45 Expression with Renal Angiomyolipoma. *Saudi Med J* 2004; 25(8):1020-1030.

VenderBrink BA, Munver R, Tash, JA, et al. Renal Angiomyolipoma with Contrast-Enhancing Elements Mimicking Renal Malignancy. Radiographic and Pathologic Evaluation. *Urol* 2004; 63(3):584-586.

Kim JK, Park SY, Shon JH, et al. Angiomyolipoma with Minimal Fat. Differentiation from Renal Cell Carcinoma at Biphasic Helical CT. *Radiol* 2004; 230(3):677-684.

Rubinas TC, Flanigan RC and Picken MM. Pathologic Quiz Case. Renal Mass in an Otherwise Healthy Man. Epithelioid Angiomyolipoma. *Arch Pathol Lab Med* 2004; 128(1):19-20.

Nikaido T, Nakano M, Kato M, et al. Characterization of Smooth Muscle Components in Renal Angiomyolipomas. Histological and Immunohistochemical Comparison with Renal Capsular Leiomyomas. *Pathol Int* 2004; 54(1):1-9.

Case No. 2, Accession No. 30077 February 2006

Alameda (Alameda County Medical Center) - Acquired cystic kidney disease
Arcadia (Garfield Medical Center) - Polycystic kidney
Baldwin Park (Kaiser Permanente) - Acquired cystic disease (3)
Fontana (Kaiser Permanente Hospital) - End-stage renal disease
Glendale - Acquired cystic kidney disease
Hayward/Fremont - Acquired renal cystic disease (dialysis related)
Loma Linda (Loma Linda University Pathology Residents) - Adult polycystic kidney disease
Long Beach (Lakewood Regional Medical Center) - Adult polycystic kidney (9)
Monterey Park (Garfield Medical Center) - Polycystic kidney
Monterey Park (Monterey Peninsula Pathologists) - Polycystic kidney disease
Mountain View (El Camino Pathology Group) - Adult polycystic kidney disease
Oakland (Kaiser Permanente) - Acquired cystic renal disease (4)
Orange (Orange County Medical Group) - Adult polycystic kidney disease
Oxnard (St. John's Regional Medical Center) - Polycystic kidney (4)
San Diego (Naval Medical Center) - Acquired (dialysis associated) cystic renal disease
San Francisco (San Francisco General Hospital) - Adult polycystic kidney disease
Santa Rosa (Santa Rosa Memorial Hospital) - Polycystic kidney disease (2); Probable acquired renal cystic disease, but cannot exclude autosomal dominant polycystic kidney disease (need kidney weights) (1)
Ventura - Polycystic kidney disease
Woodland Hills (Kaiser Permanente) - Acquired renal cystic disease (1); Polycystic disease (1)
Arkansas (University of Arkansas Medical Center) - Polycystic kidney disease, kidney
Colorado, Evergreen - Acquired cystic kidney disease
Florida (Baptist Hospital) - Polycystic kidney disease (5)
Florida (Jackson Memorial Hospital) - Adult polycystic kidney disease
Florida, Tallahassee - Adult polycystic kidney disease, renal dialysis kidney
Florida (Winter Haven Hospital) - Polycystic disease
Illinois, Burr Ridge - Acquired renal cystic disease
Illinois (Evanston Hospital) - Polycystic kidney vs. cystic nephroma
Illinois (Loyola University Medical Center) - Adult polycystic renal disease

Illinois (Naval Hospital Great Lakes) - Dialysis associated cystic kidney
Indiana (Kokamo Pathologist Health System) - Polycystic kidney disease
Louisiana (Orleans Parish Coroners Office) - Adult renal cystic disease
Maryland (Northwest Hospital Center) - Acquired cystic kidney disease
Maryland (University of Maryland) - Acquired renal cystic disease (1); Autosomal dominant polycystic disease (1)
Massachusetts (New England Medical Center) - Adult polycystic kidney disease
Michigan, Kalamazoo - Cystic renal cell carcinoma
Michigan (Oakwood Hospital) - Polycytic kidney disease
Michigan (Pathology Services West Michigan) - Dialysis kidney
Nebraska (Creighton University School of Medicine) - Acquired cystic disease of kidney
New York (Long Island Jewish Medical Center) - Acquired cystic disease of the kidney
New York (Nassau University Medical Center) - Acquired renal cystic disease
New York (Stony Brook University Hospital Residents) - Polycystic kidney (2)
New York (Westchester Medical Center) - Cystic kidney, associated with dialysis
North Carolina (Mountain Area Pathology) - Acquired cystic kidney disease associated with dialysis (1); Acquired cystic renal disease (2)
North Carolina (Pisgah Association of Pathology) - Adult polycystic kidney disease
Oklahoma, Oklahoma City - Adult polycystic kidney disease
Pennsylvania (Conemaugh Memorial Medical Center) - Acquired cystic disease
Pennsylvania (Drexel University College of Medicine) - Benign multilocular cyst of kidney
Pennsylvania (Mt. Nittany Medical Center) - Acquired renal cystic disease
Pennsylvania (Pennsylvania Hospital Residents) - Cystic nephroma
Puerto Rico (University of Puerto Rico) - Acquired renal cystic disease
Texas, Lubbock - Mesoblastic nephroma
Texas (Methodist Hospital at Houston) - Cystic nephroma
Texas (Propath Associates) - Polycystic kidney disease (2)
Texas (Scott & White Memorial Hospital) - Adult polycystic kidney disease
Texas (Wilford Hall Medical Center) - Adult polycystic kidney disease vs. acquired cystic kidney disease
West Virginia (Greenbrier Valley Medical Center) - Acquired cystic kidney disease
West Virginia (Wetzel County Hospital) - Acquired renal cystic disease
Wisconsin (Bellin Health) - Cystic kidney disease
Wisconsin (Meriter Hospital) - Adult polycystic kidney disease
Wisconsin (Pathology Associates of Wisconsin) - Polycystic kidney, cystic kidney (1); Cystic kidney 2° to dialysis (1)
Australia (North Queensland Pathology) - Adult polycystic disease
Australia (Royal Prince Alfred Hospital) - Favor cystic change of chronic renal failure, cannot exclude adult polycystic disease of kidney
Australia (Sullivan Nicolaides Pathology) - Acquired renal cystic disease
Brazil, San Paulo - End stage kidney
Germany (UKE Kerninstitut fur Pathologie) - Polycystic disease (adult type)
Jamaica (University of the West Indies) - Acquired renal cysts
Japan (Kyoto University Hospital) - Acquired cystic disease of the kidney
New Zealand (Otago Diagnostic Laboratories) - Acquired cystic disease
Oman (Khoula Hospital) - Acquired renal cystic disease
Qatar (Hamad Medical Corporation) - Acquired cystic disease of kidney
Saudi Arabia (King Fahad National Guard Hospital) - Autosomal dominant polycystic kidney disease

Case 2 - Diagnosis:

Adult polycystic kidney disease
T-71000, M-33800

Case 2 - References:

Markhardt BK, Winter TC and Lee FT, Jr. Autosomal Dominant Polycystic Kidney Disease Developing in Transplanted Pediatric Kidneys. *J Ultrasound Med* 2004; 23(9):1235-1238.

Belibi FA, Reif G, Wallace DP, et al. Cyclic AMP Promotes Growth and Secretion in Human Polycystic Kidney Epithelial Cells. *Kidney Int* 2004; 66(3):964-973.

Kubo S, Nakajima M, Fukuda K, et al. A 4-Year-Old Girl with Autosomal Dominant Polycystic Kidney Disease Complicated by a Ruptured Intracranial Aneurysm. *Eur J Pediatr* 2004; 163(11):675-677.

Reiterova J, Miroslav M, Stekrova J, et al. The Influence of G-Protein Beta3-Subunit Gene and Endothelial Nitric Oxide Synthesis Gene in Exon 7 Polymorphisms on Progression of Autosomal Dominant Polycystic Kidney Disease. *Ren Fail* 2004; 26(2):119-125.

Case No. 3, Accession No. 28930 **February 2006**

Alameda (Alameda County Medical Center) - Low-grade collecting duct carcinoma
Arcadia (Garfield Medical Center) - Oncocytoma
Baldwin Park (Kaiser Permanente) - Renal cell carcinoma (3)
Fontana (Kaiser Permanente Hospital) - Renal cell carcinoma with granular cytoplasm
Glendale - Renal cell carcinoma. collecting duct type
Hayward/Fremont - Oncocytoma
Loma Linda (Loma Linda University Pathology Residents) - Tubular oncocytoma
Long Beach (Lakewood Regional Medical Center) - Renal cell carcinoma collecting duct type (7); Oncocytoma (2)
Monterey Park (Garfield Medical Center) - Oncocytoma
Monterey Park (Monterey Peninsula Pathologists) - Oncocytoma
Mountain View (El Camino Pathology Group) - Oncocytoma vs. oncocytic renal cell carcinoma
Oakland (Kaiser Permanente) - Oncotyoma (4)
Orange (Orange County Medical Group) - Renal cell carcinoma, oncocytic type
Oxnard (St. John's Regional Medical Center) - Oncocytoma (4)
San Diego (Naval Medical Center) - Collecting duct carcinoma
San Francisco (San Francisco General Hospital) - Chromophobe renal cell carcinoma, eosinophilic type
Santa Rosa (Santa Rosa Memorial Hospital) - Renal cell carcinoma, granular type (1); Renal oncocytoma (1); Renal cell carcinoma, granular vs. collecting duct type (1)
Ventura - Oncocytoma
Woodland Hills (Kaiser Permanente) - Renal cell carcinoma with oncocytic features (1); Oncocytoma vs. RCC, chromphobe (1)
Arkansas (University of Arkansas Medical Center) - Oncocytoma, kidney
Colorado, Evergreen - Renal cell carcinoma
Florida (Baptist Hospital) - Renal cell carcinoma, collecting duct type (3); Collecting duct carcinoma (2)
Florida (Jackson Memorial Hospital) - Renal cell carcinoma with oncocytic features
Florida, Tallahassee - Oncocytoma
Florida (Winter Haven Hospital) - Oncocytoma
Illinois, Burr Ridge - Medullary carcinoma
Illinois (Evanston Hospital) - Renal cell carcinoma, NOS
Illinois (Loyola University Medical Center) - Low grade collecting duct carcinoma
Illinois (Naval Hospital Great Lakes) - Oncocytoma
Indiana (Kokamo Pathologist Health System) - Tubular adenoma
Louisiana (Orleans Parish Coroners Office) - Collecting duct carcinoma, kidney
Maryland (Northwest Hospital Center) - Collecting duct carcinoma, low grade vs. renal cell
Maryland (University of Maryland) - Papillary renal cell carcinoma consistent with oncocytic features
Massachusetts (New England Medical Center) - Renal cell carcinoma with oncocytic features
Michigan, Kalamazoo - Oncocytoma
Michigan (Oakwood Hospital) - Clear cell renal cell carcinoma, granular variant
Michigan (Pathology Services West Michigan) - Oncocytoma
Nebraska (Creighton University School of Medicine) - Renal cell carcinoma, granular cell type
New York (Long Island Jewish Medical Center) - Oncocytoma
New York (Nassau University Medical Center) - Chromophobe carcinoma, eosinophic variant
New York (Stony Brook University Hospital Residents) - Papillary renal cell carcinoma, type 2 (1); Chromophobe renal cell carcinoma, eosinophilic variant vs. oncocytoma with atypical features (1)
New York (Westchester Medical Center) - Papillary renal cell carcinoma, type 2 with oncocytic features
North Carolina (Mountain Area Pathology) - Chromophobe renal cell carcinoma, eosinophilic type (1); Renal cell carcinoma, chromophobe type (1); Oncocytoma (1)
North Carolina (Pisgah Association of Pathology) - Renal cell carcinoma, granular cell type
Oklahoma, Oklahoma City - Renal cell carcinoma, tubulopapillary type (chromophil)
Pennsylvania (Conemaugh Memorial Medical Center) - Oncocytosis
Pennsylvania (Drexel University College of Medicine) - Oncocytoma
Pennsylvania (Mt. Nittany Medical Center) - Chromophobe renal cell carcinoma, eosinophilic type
Pennsylvania (Pennsylvania Hospital Residents) - Papilloma adenoma
Puerto Rico (University of Puerto Rico) - Oncocytoma
Texas, Lubbock - Oncocytoma
Texas (Methodist Hospital at Houston) - Chromophobe renal cell carcinoma
Texas (Propath Associates) - Tubulocystic oncocytoma (2)
Texas (Scott & White Memorial Hospital) - Collecting duct carcinoma
Texas (Wilford Hall Medical Center) - Oncocytoma
West Virginia (Greenbrier Valley Medical Center) - Oncocytoma
West Virginia (Wetzel County Hospital) - Chromophobe carcinoma

Wisconsin (Bellin Health) - Renal cell carcinoma
Wisconsin (Meriter Hospital) - Oncocytoma
Wisconsin (Pathology Associates of Wisconsin) - Oncocytoma (1); Renal cell carcinoma, granular cell type (1)
Australia (North Queensland Pathology) - Oncocytoma
Australia (Royal Prince Alfred Hospital) - Chromophobe renal cell carcinoma, oncocytoma (2
Australia (Sullivan Nicolaides Pathology) - Oncocytoma
Brazil, San Paulo - Papillary carcinoma, type II
Germany (UKE Kerninstitut fur Pathologie) - Oncocytoma
Jamaica (University of the West Indies) - Papillary renal cell carcinoma
Japan (Kyoto University Hospital) - Oncocytosis
New Zealand (Otago Diagnostic Laboratories) - Renal cell carcinoma, chromophobe, eosinophilic type
Oman (Khoula Hospital) - Renal cell carcinoma, papillary type, multicystic renal cell carcinoma
Qatar (Hamad Medical Corporation) - Conventional granular cell renal cell carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Oncocytoma

Case 3 - Diagnosis:

Renal oncocytoma
T-71000, M-82900

Case 3 - References:

Patton KT, Tretiakova MS, Yao JL, et al. Expression of RON Proto-Oncogene in Renal Oncocytoma and Chromophobe Renal Cell Carcinoma. *Am J Surg Pathol* 2004; 28(8):1045-1050.

Kuroda N, Toi M, Hiroi M, et al. Review of Renal Oncocytoma with Focus on Clinical and Pathologic Aspects. *Histol Histopathol* 2003; 18(3):935-942.

Tickoo SK, Reuter VE, Amin MB, et al. Renal Oncocytosis. A Morphologic Study of Fourteen Cases. *Am J Surg Pathol* 1999; 23(9):1094-101.

Hebers J, Schullerus D. Chudek J, et al. Lack of Genetic Changes at Specific Genomic Sites Separates Renal Oncocytomas from Renal Cell Carcinoma. *J Pathol* 1998; 184(1):58-62.

Kuroda N, Tio M, Yamamoto, et al. Immunohistochemical Identification of Intracytoplasmic Lumens by Cytokeratin Typing May Differentiate Renal Oncocytomas from Chromphobe Renal Cell Carcinomas. *Histol Histopathol* 2004; 19(1):23-28.

Schwerdtle RF, Winterpacht A, Storkels S, et al. Loss of Heterogeneity Studies and Deletion Mapping Identify Two Putative Chromosome 14q Tumor Suppressor Loci in Renal Oncocytomas. *Cancer Res* 1997; (22):5009-5012.

Case No. 4, Accession No. 29030 February 2006

Alameda (Alameda County Medical Center) - Renal cell carcinoma, clear cell type
Arcadia (Garfield Medical Center) - Clear cell carcinoma
Baldwin Park (Kaiser Permanente) - Renal cell carcinoma, clear cell type (3)
Fontana (Kaiser Permanente Hospital) - Conventional renal cell carcinoma
Glendale - Renal cell carcinoma, clear cell type
Hayward/Fremont - Renal cell carcinoma, grade II
Loma Linda (Loma Linda University Pathology Residents) - Clear cell renal cell carcinoma, Fuhrman, grade 2
Long Beach (Lakewood Regional Medical Center) - Renal cell carcinoma, clear cell type (9)
Monterey Park (Garfield Medical Center) - Clear cell carcinoma
Monterey Park (Monterey Peninsula Pathologists) - Renal cell carcinoma, clear cell
Mountain View (El Camino Pathology Group) - Renal cell carcinoma, clear cell type, grade 2
Oakland (Kaiser Permanente) - Renal cell carcinoma, clear cell type, grade 2
Orange (Orange County Medical Group) - Renal cell carcinoma, clear cell type
Oxnard (St. John's Regional Medical Center) - Renal cell carcinoma (clear cell carcinoma) (3); Low grade renal cell carcinoma, clear cell type (1)
San Diego (Naval Medical Center) - Conventional (clear cell) renal cell carcinoma
San Francisco (San Francisco General Hospital) - Clear cell renal cell carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Renal cell carcinoma, clear cell type (3)
Ventura - Renal cell carcinoma
Woodland Hills (Kaiser Permanente) - Renal cell carcinoma, clear cell type (1); Clear cell renal cell carcinoma, grade 2/4 (1)
Arkansas (University of Arkansas Medical Center) - Renal cell carcinoma, clear cell type, kidney
Colorado, Evergreen - Renal cell carcinoma
Florida (Baptist Hospital) - Renal cell carcinoma, clear cell type (5)
Florida (Jackson Memorial Hospital) - Renal cell carcinoma, clear cell type
Florida, Tallahassee - Clear cell renal carcinoma

Florida (Winter Haven Hospital) - Clear cell carcinoma
Illinois, Burr Ridge - Renal cell carcinoma, clear cell type
Illinois (Evanston Hospital) - Renal cell carcinoma, clear cell
Illinois (Loyola University Medical Center) - Renal cell carcinoma, clear cell type
Illinois (Naval Hospital Great Lakes) - Renal cell carcinoma, grade II
Indiana (Kokamo Pathologist Health System) - Clear cell renal carcinoma
Louisiana (Orleans Parish Coroners Office) - Kidney, renal cell carcinoma, clear cell type
Maryland (Northwest Hospital Center) - Renal cell carcinoma, clear cell
Maryland (University of Maryland) - Clear cell renal cell carcinoma
Massachusetts (New England Medical Center) - Renal cell carcinoma, clear cell variant
Michigan, Kalamazoo - Low grade clear cell renal cell carcinoma
Michigan (Oakwood Hospital) - Clear cell renal cell carcinoma
Michigan (Pathology Services West Michigan) - Clear cell carcinoma, Fuhrman, Grade 2
Nebraska (Creighton University School of Medicine) - Renal cell carcinoma, clear cell type
New York (Long Island Jewish Medical Center) - Clear cell renal cell carcinoma
New York (Nassau University Medical Center) - Renal cell carcinoma
New York (Stony Brook University Hospital Residents) - Renal cell carcinoma, conventional type (1); Renal cell carcinoma, clear cell type (1)
New York (Westchester Medical Center) - Renal cell carcinoma, clear cell type Fuhrman, Grade 2
North Carolina (Mountain Area Pathology) - Clear cell renal cell carcinoma (3)
North Carolina (Pisgah Association of Pathology) - Clear cell renal cell carcinoma, Fuhrman, nuclear Grade 2 (1)
Oklahoma, Oklahoma City - Renal cell carcinoma, clear cell type
Pennsylvania (Conemaugh Memorial Medical Center) - Renal cell carcinoma, clear cell type
Pennsylvania (Drexel University College of Medicine) - Clear cell carcinoma, grade III
Pennsylvania (Mt. Nittany Medical Center) - Clear cell renal cell carcinoma, Fuhrman nuclear, Grade 2
Pennsylvania (Pennsylvania Hospital Residents) - Renal cell carcinoma, clear cell type
Puerto Rico (University of Puerto Rico) - Renal cell carcinoma, clear cell type
Texas, Lubbock - Renal carcinoma, clear cell type
Texas (Methodist Hospital at Houston) - Conventional renal cell carcinoma, Fuhrman nuclear, grade 2
Texas (Propath Associates) - Renal cell carcinoma (2)
Texas (Scott & White Memorial Hospital) - Renal cell carcinoma, clear cell type
Texas (Wilford Hall Medical Center) - Renal cell carcinoma, clear cell type
West Virginia (Greenbrier Valley Medical Center) - Clear cell renal cell carcinoma
West Virginia (Wetzel County Hospital) - Renal cell carcinoma, clear cell type
Wisconsin (Bellin Health) - Clear cell renal cell carcinoma
Wisconsin (Meriter Hospital) - Renal cell cafrcinoma, Grade 1
Wisconsin (Pathology Associates of Wisconsin) - Renal cell carcinoma (1); RCC, clear cell type (1)
Australia (North Queensland Pathology) - Clear cell carcinoma
Australia (Royal Prince Alfred Hospital) - Conventional clear cell renal cell carcinoma (Furhman nuclear grade 2)
Australia (Sullivan Nicolaides Pathology) - Renal cell carcinoma, clear cell type, Grade 3
Brazil, San Paulo - Renal cell carcinoma, clear cell
Germany (UKE Kerninstitut fur Pathologie) - Renal cell carcinoma
Jamaica (University of the West Indies) - Clear cell renal cell carcinoma, Furhmann, grade 2
Japan (Kyoto University Hospital) - Clear cell renal cell carcinoma, grade 2/grade 3
New Zealand (Otago Diagnostic Laboratories) - Renal cell carcinoma, clear cell, Fuhrman grade 2
Oman (Khoula Hospital) - Clear cell renal cell carcinoma, DDx: Multilocular cystic renal cell carcinoma
Qatar (Hamad Medical Corporation) - Conventional clear cell renal cell carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Renal cell carcinoma , clear cell type

Case 4 - Diagnosis:

Conventional renal cell carcinoma, clear cell type
T-71020, M-83123

Case 4 - References:

Morris MR, Maina E, Morgan NV, Gentle D, et al. Molecular Genetic Analysis of FIH-1, FH and SDHB Candidate Tumour Suppressor Genes in Renal Cell Carcinoma. *J Clin Pathol* 2004; 57(7):706-711.

Haberal I, Su S, Recant W, et al. Radiology Quiz Case 1. Metastatic Renal Cell Carcinoma, Clear Cell Type. *Arch Otolaryngol Head Neck Surg* 2004; 130(7):892-894.

Blute ML, Leibovich BC, Cheville JC, et al. A Protocol for Performing Extended Lymph Node Dissection Using Primary Tumor Pathological Features for Patients Treated with Radical Nephrectomy for Clear Cell Renal Cell Carcinoma. *J Urol* 2004; 172(2):465-469.

Grabmaier K, A de Weijert MC, Verhaegh GW, et al. Strict Regulation of CAIX(G250/MN) by HIF-Lalpha in Clear Cell Renal Cell Carcinoma. *Oncogen* 2004; 23(33):5624-5631.

Zimmermann U, Balabanov S, Giebel J, et al. Increased Expression and Altered Location of Annexin IV in Renel Clear Cell Carcinoma. A Possible Role in Tumour Dissemination. *Cancer Lett* 2004; 209(1):111-118.

Case No. 5, Accession No. 30020 February 2006

Alameda (Alameda County Medical Center) - Oncocytoma
Arcadia (Garfield Medical Center) - Chromophobe renal cell carcinoma
Baldwin Park (Kaiser Permanente) - Oncocytoma (3)
Fontana (Kaiser Permanente Hospital) - Oncocytoma
Glendale - Oncocytoma
Hayward/Fremont - Oncocytoma
Loma Linda (Loma Linda University Pathology Residents) - Oncocytoma
Long Beach (Lakewood Regional Medical Center) - Oncocytoma (9)
Monterey Park (Garfield Medical Center) - Chromophobe renal cell carcinoma
Monterey Park (Monterey Peninsula Pathologists) - Oncocytoma
Mountain View (El Camino Pathology Group) - Oncocytoma
Oakland (Kaiser Permanente) - Oncocytoma (4)
Orange (Orange County Medical Group) - Oncocytoma
Oxnard (St. John's Regional Medical Center) - Oncocytoma (4)
San Diego (Naval Medical Center) - Oncocytoma
San Francisco (San Francisco General Hospital) - Oncocytoma
Santa Rosa (Santa Rosa Memorial Hospital) - Renal oncocytoma (3)
Ventura - Carcinoid
Woodland Hills (Kaiser Permanente) - Oncocytoma (2)
Arkansas (University of Arkansas Medical Center) - Oncocytoma, kidney
Colorado, Evergreen - Renal oncocytoma
Florida (Baptist Hospital) - Oncocytoma (5)
Florida (Jackson Memorial Hospital) - Oncocytoma
Florida, Tallahassee - Oncocytoma
Florida (Winter Haven Hospital) - Oncocytoma
Illinois, Burr Ridge - Oncocytoma
Illinois (Evanston Hospital) - Oncocytoma
Illinois (Loyola University Medical Center) - Oncocytoma
Illinois (Naval Hospital Great Lakes) - Oncocytoma
Indiana (Kokamo Pathologist Health System) - Oncocytoma
Louisiana (Orleans Parish Coroners Office) - Oncocytoma
Maryland (Northwest Hospital Center) - Oncocytoma
Maryland (University of Maryland) - Oncocytoma
Massachusetts (New England Medical Center) - Oncocytoma
Michigan, Kalamazoo - Eosinophilic renal cell carcinoma
Michigan (Oakwood Hospital) - Oncocytoma
Michigan (Pathology Services West Michigan) - Chromophobe renal cell carcinoma
Nebraska (Creighton University School of Medicine) - Oncocytoma
New York (Long Island Jewish Medical Center) - Oncocytoma
New York (Nassau University Medical Center) - Oncocytoma
New York (Stony Brook University Hospital Residents) - Oncocytoma (1); Oncocytoma with oncoblastic features (1)
New York (Westchester Medical Center) - Oncocytoma
North Carolina (Mountain Area Pathology) - Oncocytoma (3)
North Carolina (Pisgah Association of Pathology) - Oncocytoma
Oklahoma, Oklahoma City - Oncocytoma
Pennsylvania (Conemaugh Memorial Medical Center) - Oncocytoma
Pennsylvania (Drexel University College of Medicine) - Renal cell carcinoma with oncocytic features
Pennsylvania (Mt. Nittany Medical Center) - Oncocytoma, kidney
Pennsylvania (Pennsylvania Hospital Residents) - Oncocytoma
Puerto Rico (University of Puerto Rico) - Oncocytoma
Texas, Lubbock - Granular cell carcinoma
Texas (Methodist Hospital at Houston) - Oncocytoma
Texas (Propath Associates) - Chromophobe renal cell carcinoma (2)
Texas (Scott & White Memorial Hospital) - Oncocytoma
Texas (Wilford Hall Medical Center) - Oncocytoma
West Virginia (Greenbrier Valley Medical Center) - Renal cell carcinoma, unclassified

West Virginia (Wetzel County Hospital) - Oncocytoma
Wisconsin (Bellin Health) - Oncocytoma
Wisconsin (Meriter Hospital) - Oncocytoma
Wisconsin (Pathology Associates of Wisconsin) - Oncocytoma (2)
Australia (North Queensland Pathology) - Renal carcinoid
Australia (Royal Prince Alfred Hospital) - Oncocytoma
Australia (Sullivan Nicolaides Pathology) - Chromophobe carcinoma, eosinophilic variant
Brazil, San Paulo - Oncocytoma
Germany (UKE Kerninstitut fur Pathologie) - Oncocytoma
Jamaica (University of the West Indies) - Oncocytoma
Japan (Kyoto University Hospital) - Oncocytoma
New Zealand (Otago Diagnostic Laboratories) - Oncocytoma
Oman (Khoula Hospital) - Oncocytoma
Qatar (Hamad Medical Corporation) - Oncocytoma
Saudi Arabia (King Fahad National Guard Hospital) - Oncocytoma

Case 5 - Diagnosis:

Renal oncocytoma
T-71000, M-83123

Case 5 - References:
See references from Case #3

Case No. 6, Accession No. 30032 February 2006

Alameda (Alameda County Medical Center) - Renal cell carcinoma, papillary type
Arcadia (Garfield Medical Center) - Papillary renal cell carcinoma
Baldwin Park (Kaiser Permanente) - Renal cell carcinoma, papillary type (3)
Fontana (Kaiser Permanente Hospital) - Papillary renal cell carcinoma
Glendale - Renal cell carcinoma, papillary type
Hayward/Fremont - Papillary renal cell carcinoma
Loma Linda (Loma Linda University Pathology Residents) - Papillary renal cell carcinoma, Fuhrman, Grade 1-2
Long Beach (Lakewood Regional Medical Center) - Papillary renal cell carcinoma (9)
Monterey Park (Garfield Medical Center) - Papillary renal cell carcinoma
Monterey Park (Monterey Peninsula Pathologists) - Renal cell carcinoma, papillary
Mountain View (El Camino Pathology Group) - Papillary renal cell carcinoma
Oakland (Kaiser Permanente) - Papillary renal cell carcinoma (4)
Orange (Orange County Medical Group) - Renal cell carcinoma, papillary
Oxnard (St. John's Regional Medical Center) - Renal cell carcinoma, papillary type (4)
San Diego (Naval Medical Center) - Papillary renal cell carcinoma
San Francisco (San Francisco General Hospital) - Papillary renal cell carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Renal cell carcinoma, papillary type (3)
Ventura - Papillary renal cell carcinoma
Woodland Hills (Kaiser Permanente) - Papillary renal cell carcinoma (1); Tubulo-papillary variant, renal cell carcinoma (1)
Arkansas (University of Arkansas Medical Center) - Renal cell carcinoma, papillary type, kidney
Colorado, Evergreen - Metanephric adenoma
Florida (Baptist Hospital) - Renal cell carcinoma, papillary type (5)
Florida (Jackson Memorial Hospital) - Papillary renal cell carcinoma
Florida, Tallahassee - Papillary renal cell carcinoma
Florida (Winter Haven Hospital) - Papillary renal cell carcinoma
Illinois, Burr Ridge - Papillary carcinoma
Illinois (Evanston Hospital) - Renal cell carcinoma, papillary
Illinois (Loyola University Medical Center) - Papillary renal cell carcinoma, type I
Illinois (Naval Hospital Great Lakes) - Papillary renal cell carcinoma
Indiana (Kokamo Pathologist Health System) - Papillary carcinoma
Louisiana (Orleans Parish Coroners Office) - Renal cell carcinoma, papillary type
Maryland (Northwest Hospital Center) - Papillary renal cell carcinoma
Maryland (University of Maryland) - Papillary renal cell carcinoma
Massachusetts (New England Medical Center) - Renal cell carcinoma, papillary cell variant

Michigan, Kalamazoo - Papillary renal cell carcinoma
Michigan (Oakwood Hospital) - Papillary renal cell carcinoma
Michigan (Pathology Services West Michigan) - Papillary renal cell carcinoma
Nebraska (Creighton University School of Medicine) - Renal cell carcinoma, papillary type
New York (Long Island Jewish Medical Center) - Papillary renal cell carcinoma
New York (Nassau University Medical Center) - Papillary renal cell carcinoma
New York (Stony Brook University Hospital Residents) - Papillary renal cell carcinoma, type I (1); Papillary renal cell carcinoma (1)
New York (Westchester Medical Center) - Papillary renal cell carcinoma, type I
North Carolina (Mountain Area Pathology) - Papillary renal cell carcinoma (3)
North Carolina (Pisgah Association of Pathology) - Chromophil (papillary) renal cell carcinoma
Oklahoma, Oklahoma City - Metanephric adenoma
Pennsylvania (Conemaugh Memorial Medical Center) - Renal cell carcinoma, papillary
Pennsylvania (Drexel University College of Medicine) - Papillary renal cell carcinoma
Pennsylvania (Mt. Nittany Medical Center) - Papillary renal cell carcinoma
Pennsylvania (Pennsylvania Hospital Residents) - Papillary renal cell carcinoma
Puerto Rico (University of Puerto Rico) - Papillary renal cell carcinoma
Texas, Lubbock - Papillary carcinoma
Texas (Methodist Hospital at Houston) - Papillary renal cell carcinoma, type I, Fuhrman nuclear, grade 3
Texas (Propath Associates) - Papillary renal cell carcinoma (1); Papillary renal cell carcinoma, type I (1)
Texas (Scott & White Memorial Hospital) - Papillary renal cell carcinoma
Texas (Wilford Hall Medical Center) - Renal cell carcinoma, papillary type
West Virginia (Greenbrier Valley Medical Center) - Papillary renal cell carcinoma
West Virginia (Wetzel County Hospital) - Papillary renal cell carcinoma
Wisconsin (Bellin Health) - Papillary renal cell carcinoma
Wisconsin (Meriter Hospital) - Papillary renal cell carcinoma
Wisconsin (Pathology Associates of Wisconsin) - Collect duct carcinoma vs. papillary carcinoma (1); Renal cell carcinoma, papillary type (1)
Australia (North Queensland Pathology) - Papillary carcinoma
Australia (Royal Prince Alfred Hospital) - Papillary renal cell carcinoma (Fuhrman nuclear, grade 2)
Australia (Sullivan Nicolaides Pathology) - Papillary renal cell carcinoma
Brazil, San Paulo - Papillary carcinoma
Germany (UKE Kerninstitut fur Pathologie) - Papillary renal cell carcinoma
Jamaica (University of the West Indies) - Papillary renal cell carcinoma
Japan (Kyoto University Hospital) - Suggestive of PRCC-TFE3 renal carcinoma
New Zealand (Otago Diagnostic Laboratories) - Renal cell carcinoma, papillary type, Fuhrman, grade 3
Oman (Khoula Hospital) - Papillary renal cell carcinoma
Qatar (Hamad Medical Corporation) - Papillary renal cell carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Renal cell carcinoma, papillary type

Case 6 - Diagnosis:

Papillary renal cell carcinoma
T-71000, M-83123

Case 6 - References:

Chow GK, Myles J and Novick AC. The Cleveland Clinic Experience with Papillary (Chromophil) Renal Cell Carcinoma. Clinical Outcome with Histopathological Correlation. *Can J Urol* 2001; 8(2):1223-1228.

Delong MJ, Schmitt D, Scott KM, et al. Multicentric Papillary Renal Carcinoma in Renal Allograft. *Am J Kidney Dis* 2003; 42(2):381-384.

Ng WK. Nuclear Grooves In Papillary (Chromophil) Renal Cell Carcinoma. *Am J Surg Pathol* 1998; 22(10):1298-1300.

Val-Bernal JF, Mayorga M, Garcia-Arranz P, et al. Mucin Secretion in Papillary (Chromophil) Renal Cell Carcinoma. *Am J Surg Pathol* 1998; 22(8):1037-1040.

Renshaw AA, Zhang H, Corless CL, et al. Solid Variants of Papillary (Chromophil) Renal Cell Carcinoma. Clinicopathologic and Genetic Features. *Am J Surg Pathol* 1997; 21(10):1203-1209.

Amin MB, Corless CL, Renshaw AA, et al. Papillary (Chromophil) Renal Cell Carcinoma. Histomorphologic Characteristics and Evaluation of Conventional Pathologic Prognostic Parameters in 62 Cases. *Am J Surg Pathol* 1997; 21(6):621-635.

Case No. 7, Accession No. 30008 **February 2006**

Alameda (Alameda County Medical Center) - Renal cell carcinoma, chromophobe cell type
Arcadia (Garfield Medical Center) - Chromophobe renal cell carcinoma
Baldwin Park (Kaiser Permanente) - Renal cell carcinoma, chromophobe (3)
Fontana (Kaiser Permanente Hospital) - Chromophobe renal cell carcinoma
Glendale - Renal cell carcinoma, chromophobe type
Hayward/Fremont - Chromophobe renal cell carcinoma, eos (onc) variant
Loma Linda (Loma Linda University Pathology Residents) - Chromophobe renal cell carcinoma, Fuhrman, grade 1-2
Long Beach (Lakewood Regional Medical Center) - Chromophobe renal cell carcinoma (9)
Monterey Park (Garfield Medical Center) - Chromophobe renal cell carcinoma
Monterey Park (Monterey Peninsula Pathologists) - Renal cell carcinoma, chromophobe
Mountain View (El Camino Pathology Group) - Chromophobe cell carcinoma
Oakland (Kaiser Permanente) - Chromophobe renal cell carcinoma (4)
Orange (Orange County Medical Group) - Renal cell carcinoma, chromophobe
Oxnard (St. John's Regional Medical Center) - Renal cell carcinoma, chromophobe type (3); Moderate to high grade renal cell carcinoma with granular cell features (1)
San Diego (Naval Medical Center) - Chromophobe renal cell carcinoma
San Francisco (San Francisco General Hospital) - Chromophobe renal cell carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Renal cell carcinoma (3)
Ventura - Granular renal cell carcinoma
Woodland Hills (Kaiser Permanente) - Renal cell carcinoma, chromophobe type (2)
Arkansas (University of Arkansas Medical Center) - Renal cell carcinoma, chromophobe type, kidney
Colorado, Evergreen - Chromophobe renal cell carcinoma
Florida (Baptist Hospital) - Renal cell carcinoma, chromophobe type (4); Renal cell carcinoma, mixed chromophobe and clear cell pattern (1)
Florida (Jackson Memorial Hospital) - Renal cell carcinoma, chromophobe type
Florida, Tallahassee - Chromophobe renal carcinoma
Florida (Winter Haven Hospital) - Chromophobe renal cell carcinoma
Illinois, Burr Ridge - Chromophobe cell carcinoma
Illinois (Evanston Hospital) - Renal cell carcinoma, chromophobe
Illinois (Loyola University Medical Center) - Chromophobe
Illinois (Naval Hospital Great Lakes) - Chromophobe renal cell carcinoma
Indiana (Kokamo Pathologist Health System) - Chromophobe cell carcinoma
Louisiana (Orleans Parish Coroners Office) - Renal cell carcinoma, chromophobe type
Maryland (Northwest Hospital Center) - Chromophobe renal cell carcinoma
Maryland (University of Maryland) - Renal cell carcinoma, chromophobe
Massachusetts (New England Medical Center) - Renal cell carcinoma, chromophobe cell variant
Michigan, Kalamazoo - Chromophobe renal cell carcinoma
Michigan (Oakwood Hospital) - Chromophobe renal cell carcinoma
Michigan (Pathology Services West Michigan) - Clear cell renal cell carcinoma
Nebraska (Creighton University School of Medicine) - Renal cell carcinoma, chromophobe type
New York (Long Island Jewish Medical Center) - Chromophobe carcinoma
New York (Nassau University Medical Center) - Chromophobe carcinoma
New York (Stony Brook University Hospital Residents) - Chromophobe renal cell carcinoma (2)
New York (Westchester Medical Center) - Chromophobe renal cell carcinoma
North Carolina (Mountain Area Pathology) - Chromophobe renal cell carcinoma (3)
North Carolina (Pisgah Association of Pathology) - Chromophobe renal cell carcinoma with cystic degeneration
Oklahoma, Oklahoma City - Renal cell carcinoma, chromophobe type
Pennsylvania (Conemaugh Memorial Medical Center) - Renal cell carcinoma, chromophobic
Pennsylvania (Drexel University College of Medicine) - Chromophobe renal cell carcinoma
Pennsylvania (Mt. Nittany Medical Center) - Chromophobe renal cell carcinoma, classic type
Pennsylvania (Pennsylvania Hospital Residents) - Renal cell carcinoma, chromophobe type
Puerto Rico (University of Puerto Rico) - Chromophobe renal cell carcinoma
Texas, Lubbock - Chromophobe carcinoma
Texas (Methodist Hospital at Houston) - Chromophobe renal cell carcinoma
Texas (Propath Associates) - Clear cell carcinoma (2)
Texas (Scott & White Memorial Hospital) - Chromophobe renal cell carcinoma
Texas (Wilford Hall Medical Center) - Renal cell carcinoma, chromophobe cell type
West Virginia (Greenbrier Valley Medical Center) - Chromophobe renal cell carcinoma
West Virginia (Wetzel County Hospital) - Chromophobe carcinoma
Wisconsin (Bellin Health) - Renal cell carcinoma
Wisconsin (Meriter Hospital) - Chromophobe renal cell carcinoma

Wisconsin (Pathology Associates of Wisconsin) - Renal cell carcinoma (1); Renal cell carcinoma, chromophobe type (1)
Australia (North Queensland Pathology) - Chromophobe carcinoma
Australia (Royal Prince Alfred Hospital) - Chromophobe renal cell carcinoma
Australia (Sullivan Nicolaides Pathology) - Chromophobe carcinoma
Brazil, San Paulo - Chromophobe carcinoma
Germany (UKE Kerninstitut fur Pathologie) - Renal cell carcinoma (chromophobe)
Jamaica (University of the West Indies) - Chromophobe renal cell carcinoma
Japan (Kyoto University Hospital) - Chromophobe renal cell carcinoma
New Zealand (Otago Diagnostic Laboratories) - Renal cell carcinoma, chromophobe type, Fuhrman, Grade 3
Oman (Khoula Hospital) - Chromophobe renal cell carcinoma
Qatar (Hamad Medical Corporation) - Chromophobe renal cell carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Renal cell carcinoma, chromophobe type

Case 7 - Diagnosis:

Chromophobe renal cell carcinoma
T-71000, M-83123

Case 7 - References:

Martignoni G, Pea M, Brunelli M, Chilosi M, et al. CD10 is Expressed in a Subset of Chromophobe Renal Cell Carcinomas. *Mod Pathol* 2004; 17(12):1455-1463.

Guven S, Guven ES, Islamoglu E, et al. Successful Management of Chromophobe Type Renal Cell Carcinoma in Pregnancy. *Aust NZ J Obstet Gynaecol* 2004; 44(4):362-363.

Bruder E, Passera O, Harms D, Leuschner I, et al. Morphologic and Molecular Characterization of Renal Cell Carcinoma in Children and Young Adults. *Am J Surg Pathol* 2004; 28(9):1117-1132.

Petit A, Castillo M, Santo M, et al. KIT Expression in Chromophobe Renal Cell Carcinoma. Comparative Immunohistochemical Analysis of KIT Expression in Different Renal Cell Neoplasms. *Am J Surg Pathol* 2004; 28(5):676-678.

Peyromaure M, Misrai V, Thiounn N, et al. Chromophobe Renal Cell Carcinoma. Analysis of 61 Cases. *Cancer* 2004; 100(7):1406-1410.

Case No. 8, Accession No. 29083 February 2006

Alameda (Alameda County Medical Center) - Renal cell carcinoma, sarcomatoid type
Arcadia (Garfield Medical Center) - Sarcomatoid renal cell carcinoma vs. sarcoma require immunos
Baldwin Park (Kaiser Permanente) - Renal cell carcinoma, sarcomatoid (3)
Fontana (Kaiser Permanente Hospital) - Sarcomatoid renal cell carcinoma
Glendale - Renal cell carcinoma, sarcomatoid type
Hayward/Fremont - Sarcomatoid renal cell carcinoma
Loma Linda (Loma Linda University Pathology Residents) - Inflammatory malignant fibrous histiocytoma (MFH)
Long Beach (Lakewood Regional Medical Center) - Sarcomatoid renal cell carcinoma (9)
Monterey Park (Garfield Medical Center) - Sarcomatoid renal cell carcinoma vs. sarcoma require immunos
Monterey Park (Monterey Peninsula Pathologists) - Renal cell carcinoma, sarcomatoid
Mountain View (El Camino Pathology Group) - Sarcomatoid renal cell carcinoma
Oakland (Kaiser Permanente) - Sarcomatoid renal cell carcinoma (4)
Orange (Orange County Medical Group) - Renal cell carcinoma, sarcomatoid
Oxnard (St. John's Regional Medical Center) - Renal cell carcinoma, sarcomatoid type (1); Renal cell carcinoma, granular cell type (2); Poorly differentiated renal cell carcinoma with sarcomatoid features (1)
San Diego (Naval Medical Center) - Probable sarcomatoid renal cell carcinoma, rule out alv rhabdomyosarcoma, rule out leiomyosarcoma
San Francisco (San Francisco General Hospital) - Sarcomatoid renal cell carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Renal cell carcinoma, sarcomatoid type (3)
Ventura - Sarcomatoid renal cell carcinoma
Woodland Hills (Kaiser Permanente) - Sarcomatoid renal cell carcinoma (1); Renal cell carcinoma, spindle cell/sarcomatoid (1)
Arkansas (University of Arkansas Medical Center) - Sarcomatoid renal cell carcinoma, kidney
Colorado, Evergreen - Sarcomatoid renal cell carcinoma
Florida (Baptist Hospital) - Renal cell carcinoma, sarcomatoid type (5)
Florida (Jackson Memorial Hospital) - Renal cell carcinoma with sarcomatoid features
Florida, Tallahassee - Sarcomatoid renal carcinoma
Florida (Winter Haven Hospital) - Sarcomatoid renal cell carcinoma
Illinois, Burr Ridge - Pleomorphic sarcomatoid carcinoma
Illinois (Evanston Hospital) - Renal cell carcinoma, sarcomatoid

Illinois (Loyola University Medical Center) - High grade spindle cell neoplasm, favor metastatic adrenal; Diff Dx: Sarcomatoid carcinoma
Illinois (Naval Hospital Great Lakes) - Sarcomatoid renal cell carcinoma
Indiana (Kokamo Pathologist Health System) - Sarcomatoid renal carcinoma
Louisiana (Orleans Parish Coroners Office) - Renal cell carcinoma, sarcomatoid type
Maryland (Northwest Hospital Center) - Sarcomatoid tumor
Maryland (University of Maryland) - Sarcomatoid renal cell carcinoma
Massachusetts (New England Medical Center) - Renal cell carcinoma, sarcomatoid type
Michigan, Kalamazoo - Sarcomatoid renal cell carcinoma
Michigan (Oakwood Hospital) - Sarcomatoid renal cell carcinoma
Michigan (Pathology Services West Michigan) - Sarcomatoid renal cell carcinoma
Nebraska (Creighton University School of Medicine) - Malignant tumor consistent with renal cell carcinoma, sarcomatoid type
New York (Long Island Jewish Medical Center) - Sarcomatoid renal cell carcinoma
New York (Nassau University Medical Center) - Rhabdoid tumor
New York (Stony Brook University Hospital Residents) - Sarcomatoid renal cell carcinoma (2)
New York (Westchester Medical Center) - Sarcomatoid renal cell carcinoma
North Carolina (Mountain Area Pathology) - Sarcomatoid renal cell carcinoma (3)
North Carolina (Pisgah Association of Pathology) - Sarcomatoid renal cell carcinoma
Oklahoma, Oklahoma City - Sarcomatoid renal cell carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Renal cell carcinoma, sarcomatoid
Pennsylvania (Drexel University College of Medicine) - Sarcomatoid renal cell carcinoma
Pennsylvania (Mt. Nittany Medical Center) - Sarcomatoid renal cell carcinoma
Pennsylvania (Pennsylvania Hospital Residents) - Rhabdoid tumor
Puerto Rico (University of Puerto Rico) - Sarcomatoid renal cell carcinoma/sarcoma
Texas, Lubbock - Sarcomatoid carcinoma
Texas (Methodist Hospital at Houston) - Sarcomatoid renal cell carcinoma, unclassified
Texas (Propath Associates) - Rhabdoid tumor (2)
Texas (Scott & White Memorial Hospital) - Sarcomatoid renal cell carcinoma
Texas (Wilford Hall Medical Center) - Renal cell carcinoma, sarcomatoid type
West Virginia (Greenbrier Valley Medical Center) - Sarcomatoid renal cell carcinoma
West Virginia (Wetzel County Hospital) - Sarcomatoid variant of renal cell carcinoma
Wisconsin (Bellin Health) - Sarcomatoid renal cell carcinoma
Wisconsin (Meriter Hospital) - Sarcomatoid renal cell carcinoma
Wisconsin (Pathology Associates of Wisconsin) - Rhabdomyosarcoma (1); Renal cell carcinoma, poorly differentiated high grade (1)
Australia (North Queensland Pathology) - Sarcomatoid renal cell carcinoma
Australia (Royal Prince Alfred Hospital) - Sarcomatoid renal cell carcinoma
Australia (Sullivan Nicolaides Pathology) - Sarcomatoid renal cell carcinoma
Brazil, San Paulo - Sarcomatoid carcinoma
Germany (UKE Kerninstitut fur Pathologie) - Sarcomatoid renal cell carcinoma
Jamaica (University of the West Indies) - Sarcomatoid renal cell carcinoma
Japan (Kyoto University Hospital) - Sarcomatoid clear cell renal cell carcinoma (or renal cell carcinoma unclassified)
New Zealand (Otago Diagnostic Laboratories) - Renal cell carcinoma sarcomatoid type, Fuhrman grade 4
Oman (Khoula Hospital) - Sarcomatoid renal cell carcinoma
Qatar (Hamad Medical Corporation) - Sarcomatoid renal cell carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Renal cell carcinoma, unclassified

Case 8 - Diagnosis:

Sarcomatoid renal cell carcinoma
T-71000, M-83123

Case 8 – References:

Said JW, Thomas G and Zisman A. Kidney Pathology. Current Classification of Renal Cell Carcinoma. *Curr Urol Rep* 2002; 3(1):25-30.
Castillo M, Petit A, Mellado B, et al. C-Kit Expression in Sarcomatoid Renal Cell Carcinoma. Potential Therapy with Imatinib. *J Urol* 2004; 171(6 Pt 1):2176-2180.
Cheville JC, Lohse CM, Zincke H, et al. Sarcomatoid Renal Cell Carcinoma. An Examination of Underlying Histologic Subtype and an Analysis of Associations with Patient Outcome. *Am J Surg Pathol* 2004; 28(4):435-441.
Zigeuner R, Ratschek M, Rehak P, et al. Value of p53 as a Prognostic Marker in Histologic Subtypes of Renal Cell Carcinoma. A Systematic Analysis of Primary and Metastatic Tumor Tissue. *Urol* 2004; 63(4):651-655.
Auger M, Katz RL, Sella A, et al. Fine Needle Aspiration Cytology of Sarcomatoid Renal Cell Carcinoma. A Morphologic and Immunocytochemical Study of 15 Cases. *Diagn Cytopathol* 1993; 9(1):46-51.

Case No. 9, Accession No. 28845 **February 2006**

Alameda (Alameda County Medical Center) - Primitive neuroectodermal tumor
Arcadia (Garfield Medical Center) - Primitive neuroectodermal tumor/Ewing's sarcoma, rule out embryonal rhabdomyosarcoma
Baldwin Park (Kaiser Permanente) - Primitive neuroectodermal tumor (PNET); Peripheral neuroectodermal tumor (1); Invasive papillary urothelial carcinoma, high grade (1)
Fontana (Kaiser Permanente Hospital) - Primitive neuroectodermal tumor (PNET)
Glendale - Primitive neuroectodermal tumor
Hayward/Fremont - Small blue cell tumor (ML, primitive neuroectodermal tumor)
Loma Linda (Loma Linda University Pathology Residents) - Synovial sarcoma
Long Beach (Lakewood Regional Medical Center) - Primitive neuroectodermal tumor (PNET) (9)
Monterey Park (Garfield Medical Center) - PNET/Ewing's sarcoma, rule out embryonal rhabdomyosarcoma
Monterey Park (Monterey Peninsula Pathologists) - Primitive neuroectodermal tumor
Mountain View (El Camino Pathology Group) - Small cell neuroendocrine carcinoma
Oakland (Kaiser Permanente) - Primitive neuroectodermal tumor (4)
Orange (Orange County Medical Group) - Primitive neuroectodermal tumor
Oxnard (St. John's Regional Medical Center) - Primitive neuroectodermal tumor (2); Rhabdoid neoplasm (1); Rhabdoid tumor, lymphomatoid type (1)
San Diego (Naval Medical Center) - Primitive neuroectodermal tumor/Ewing's
San Francisco (San Francisco General Hospital) - Lymphoblastic lymphoma vs. Ewing's sarcoma
Santa Rosa (Santa Rosa Memorial Hospital) - Small cell tumor, Ewing type (2); primitive neuroectodermal tumor (Ewing sarcoma)
Ventura - Large cell lymphoma
Woodland Hills (Kaiser Permanente) - Primitive neuroectodermal tumor (1); Small blue round cell neoplasm (PNET) vs. met vs. small cell carcinoma (1)
Arkansas (University of Arkansas Medical Center) - Primitive neuroectodermal tumor/Ewing's sarcoma, kidney
Colorado, Evergreen - Large cell lymphoma
Florida (Baptist Hospital) - Primitive neuroectodermal tumor (3); Small round cell sarcoma, favor primitive neuroectodermal tumor (1); Clear cell sarcoma (1)
Florida (Jackson Memorial Hospital) - Primitive neuroectodermal tumor (PNET)
Florida, Tallahassee - PNET, lymphoma, transitional cell carcinoma collision tumor
Florida (Winter Haven Hospital) - Undifferentiated carcinoma
Illinois, Burr Ridge - Primitive neuroectodermal tumor (PNET)
Illinois (Evanston Hospital) - Primitive neuroectodermal tumor
Illinois (Loyola University Medical Center) - Primitive neuroectodermal tumor
Illinois (Naval Hospital Great Lakes) - Renal cell carcinoma, unclassified
Indiana (Kokamo Pathologist Health System) - Small cell carcinoma
Louisiana (Orleans Parish Coroners Office) - Peripheral neuroectodermal tumor
Maryland (Northwest Hospital Center) - Primitive neuroectodermal tumor
Maryland (University of Maryland) - Ewing's sarcoma/primitive neuroectodermal tumor
Massachusetts (New England Medical Center) - Primitive neuroectodermal tumor
Michigan, Kalamazoo - Primitive neuroectodermal tumor
Michigan (Oakwood Hospital) - Diffuse large cell lymphoma, transitional cell carcinoma, in-situ
Michigan (Pathology Services West Michigan) - Primitive neuroectodermal tumor
Nebraska (Creighton University School of Medicine) - Primitive neuroectodermal tumor
New York (Long Island Jewish Medical Center) - Transitional cell carcinoma involving tubules with dedifferentiated Ewings/PNET
New York (Nassau University Medical Center) - Primitive neuroectodermal tumor
New York (Stony Brook University Hospital Residents) - Primitive neuroectodermal tumor (1); Ewing/PNET vs. lymphoma (main tumor), collecting duct carcinoma (another tumor in other areas of renal parenchyma)
New York (Westchester Medical Center) - Ewing's sarcoma/primitive neuroectodermal tumor
North Carolina (Mountain Area Pathology) - Small cell carcinoma with neuroendocrine features vs. primitive neuroectodermal tumor (2); Small round blue cell tumor, probably primitive neuroectodermal tumor (1)
North Carolina (Pisgah Association of Pathology) - Small cell carcinoma with associated high grade urothelial cell carcinoma
Oklahoma, Oklahoma City - Urothelial carcinoma, high-grade (WHO)
Pennsylvania (Conemaugh Memorial Medical Center) - Ewing's sarcoma/PNET tumor
Pennsylvania (Drexel University College of Medicine) - Primitive neuroectodermal tumor
Pennsylvania (Mt. Nittany Medical Center) - Primitive neuroectodermal tumor (PNET)
Pennsylvania (Pennsylvania Hospital Residents) - Ewing's/primitive neuroectodermal tumor
Puerto Rico (University of Puerto Rico) - Primitive neuroectodermal tumor (PNET)
Texas, Lubbock - Peripheral neuroectodermal tumor
Texas (Methodist Hospital at Houston) - Ewing's/primitive neuroectodermal tumor
Texas (Propath Associates) - Primitive neuroectodermal tumor (2)
Texas (Scott & White Memorial Hospital) - Primitive neuroectodermal tumor
Texas (Wilford Hall Medical Center) - Primitive neuroectodermal tumor

West Virginia (Greenbrier Valley Medical Center) - Granulocytic sarcoma
West Virginia (Wetzel County Hospital) - Primitive neuroectodermal tumor (PNET)
Wisconsin (Bellin Health) - Ewing's sarcoma
Wisconsin (Meriter Hospital) - Primitive neuroectodermal tumor
Wisconsin (Pathology Associates of Wisconsin) - Primitive neuroectodermal tumor (2)
Australia (North Queensland Pathology) - Primitive neuroectodermal tumor
Australia (Royal Prince Alfred Hospital) - Primitive neuroectodermal tumor
Australia (Sullivan Nicolaides Pathology) - Peripheral neuroectodermal tumor
Brazil, San Paulo - Primitive neuroetodermal tumor
Germany (UKE Kerninstitut fur Pathologie) - Small cell tumors (PNET)
Jamaica (University of the West Indies) - Collecting duct carcinoma; Diff: urothelial carcinoma, high grade, grade III WHO/I SUP)
Japan (Kyoto University Hospital) - Primitive neuroectodermal tumor
New Zealand (Otago Diagnostic Laboratories) - Peripheral neuroectodermal tumor
Oman (Khoula Hospital) - Primitive neuroectodermal tumor/Ewing sarcoma
Qatar (Hamad Medical Corporation) - Primitive neuroectodermal tumor
Saudi Arabia (King Fahad National Guard Hospital) - Primitive neuroectodermal tumor of kidney

Case 9 - Diagnosis:

Primitive neuroectodermal tumor (PNET)
T-71000, M-93630

Case 9 – References:

Ng AW, Lee PS and Howard RG. Primitive Neuroectodermal Kidney Tumour. *Australas Radiol* 2004; 48(2):211-213.
Sivaramakrishna B, Mundada OP, Aron M, et al. Primary Primitive Neuroectodermal Tumor (PNET) of the Kidney with Venous Thrombus. *Int Urol Nephrol* 2003; 35(3):311-312.

Case No. 10, Accession No. 29988 February 2006

Alameda (Alameda County Medical Center) - Urothelial carcinoma, high grade
Arcadia (Garfield Medical Center) - Papillary transitional cell carcinoma, grade II, out of III
Baldwin Park (Kaiser Permanente) - Non-invasive papillary urothelial carcinoma, low grade (3)
Fontana (Kaiser Permanente Hospital) - Papillary transitional cell carcinoma, grade 2/3
Glendale - Transitional cell carcinoma
Hayward/Fremont - Transitional cell carcinoma, focally high grade
Loma Linda (Loma Linda University Pathology Residents) - Low grade urothelial cell carcinoma without invasion
Long Beach (Lakewood Regional Medical Center) - Papillary transitional cell carcinoma of ureter (9)
Monterey Park (Garfield Medical Center) - Papillary transitional cell carcinoma, grade II out of III
Monterey Park (Monterey Peninsula Pathologists) - Urothelial papillary carcinoma, low grade
Mountain View (El Camino Pathology Group) - Papillary transitional cell carcinoma
Oakland (Kaiser Permanente) - Transitional cell carcinoma, low grade papillary (4)
Orange (Orange County Medical Group) - Papillary transitional cell carcinoma
Oxnard (St. John's Regional Medical Center) - Papillary transitional cell carcinoma, low grade (4)
San Diego (Naval Medical Center) - Low grade papillary urothelial neoplasm
San Francisco (San Francisco General Hospital) - High grade papillary urothelial carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Transitional cell carcinoma (1); Papillary urothelial (transitional cell) carcinoma (1); Papillary transitional carcinoma, grade II/III (1)
Ventura - Transitional cell ureteral carcinoma
Woodland Hills (Kaiser Permanente) - Papillary transitional cell carcinoma, non-invasive grade 2 out of 3 (1); Transitional cell carcinoma, high grade 2-3/3, papillary (1)
Arkansas (University of Arkansas Medical Center) - Non-invasive papillary urothelial cell carcinoma, low grade, ureter
Colorado, Evergreen - Papillary transitional cell carcinoma, grade II/III
Florida (Baptist Hospital) - Papillary transitional cell carcinoma, predominantly low grade (2); Papillary transitional cell carcinoma, grade III-IV, non-invasive (1); Papillary transitional cell carcinoma, non-invasive (1); Non-invasive high grade papillary urothelial cell carcinoma (1);
Florida (Jackson Memorial Hospital) - High grade, papillary urothelial carcinoma
Florida, Tallahassee - Papillary urothelial carcinoma, non-invasive, high grade
Florida (Winter Haven Hospital) - Papillary grade II transitional cell carcinoma
Illinois, Burr Ridge - Papillary transitional cell carcinoma
Illinois (Evanston Hospital) - Papillary urothelial carcinoma

Illinois (Loyola University Medical Center) - Urothelial carcinoma
Illinois (Naval Hospital Great Lakes) - High grade papillary urothelial carcinoma
Indiana (Kokamo Pathologist Health System) - Low grade papillary urothelial carcinoma
Louisiana (Orleans Parish Coroners Office) - Transitional cell carcinoma, ureter
Maryland (Northwest Hospital Center) - Papillary urothelial carcinoma
Maryland (University of Maryland) - Urothelial carcinoma, papillary high grade
Massachusetts (New England Medical Center) - Transitional cell carcinoma, moderately differentiated
Michigan, Kalamazoo - Transitional cell carcinoma
Michigan (Oakwood Hospital) - Papillary urothelial carcinoma, high grade
Michigan (Pathology Services West Michigan) - Transitional cell carcinoma, grade 2 of 4
Nebraska (Creighton University School of Medicine) - Urothelial carcinoma, papillary, low grade
New York (Long Island Jewish Medical Center) - Transitional cell carcinoma, high grade
New York (Nassau University Medical Center) - Ureteral urothelial carcinoma, high grade, focally invasive
New York (Stony Brook University Hospital Residents) - Papillary urothelial carcinoma, transitional cell carcinoma (1); Papillary urothelial carcinoma, high grade (1)
New York (Westchester Medical Center) - Urothelial carcinoma, low grade
North Carolina (Mountain Area Pathology) - Transitional cell carcinoma (3)
North Carolina (Pisgah Association of Pathology) - High grade papillary urothelial cell carcinoma
Oklahoma, Oklahoma City - Urothelial carcinoma, low-grade (WHO) papillary
Pennsylvania (Conemaugh Memorial Medical Center) - Transitional cell carcinoma with squamous differentiation
Pennsylvania (Drexel University College of Medicine) - Papillary urothelial carcinoma, low grade
Pennsylvania (Mt. Nittany Medical Center) - High grade urothelial carcinoma, ureter
Pennsylvania (Pennsylvania Hospital Residents) - Low grade papillary transitional cell carcinoma
Puerto Rico (University of Puerto Rico) - Papillary urothelial carcinoma, low grade
Texas, Lubbock - Grade II/I-III transitional cell carcinoma
Texas (Methodist Hospital at Houston) - Papillary urothelial carcinoma/non-invasive, high grade
Texas (Propath Associates) - Papillary transitional cell carcinoma (1); Papillary urothelial carcinoma (1)
Texas (Scott & White Memorial Hospital) - Low grade non-invasive papillary urothelial carcinoma
Texas (Wilford Hall Medical Center) - Papillary urothelial carcinoma, high grade
West Virginia (Greenbrier Valley Medical Center) - Papillary non-infiltrative urothelial cell carcinoma
West Virginia (Wetzel County Hospital) - Transitional cell carcinoma
Wisconsin (Bellin Health) - Papillary transitional cell carcinoma
Wisconsin (Meriter Hospital) - Papillary urothelial carcinoma, focally high grade
Wisconsin (Pathology Associates of Wisconsin) - Transitional cell carcinoma (1); Papillary transitional cell carcinoma, grade II (1)
Australia (North Queensland Pathology) - Papillary urothelial carcinoma
Australia (Royal Prince Alfred Hospital) - Predominantly low grade non-invasive papillary urothelial carcinoma with focal high grade areas (? clonal dedifferentiation)
Australia (Sullivan Nicolaides Pathology) - Papillary transitional cell carcinoma
Brazil, San Paulo - Low grade papillary urothelial carcinoma
Germany (UKE Kerninstitut fur Pathologie) - Papillary transitional cell carcinoma
Jamaica (University of the West Indies) - Papillary uothelial neoplasm, low grade, grade II (WHO/ISUP)
Japan (Kyoto University Hospital) - Urothelial carcinoma, grade 2 (high grade), non-invasive, papillary
New Zealand (Otago Diagnostic Laboratories) - Urothelial carcinoma, papillary, non-invasive, low grade
Oman (Khoula Hospital) - Low grade papillary urothelial carcinoma
Qatar (Hamad Medical Corporation) - Low grade papillary urothelial carcinoma
Saudi Arabia (King Fahad National Guard Hospital) - Papillary urothelial carcinoma, high grade

Case 10 - Diagnosis:

Papillary urothelial carcinoma
T-71000, M-81203

Case 10 - References:

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