



CALIFORNIA
TUMOR TISSUE REGISTRY

GENITOURINARY PATHOLOGY

Minutes – Subscription B

May 2010



SUGGESTED READING (General Topics from Recent Literature):

- Nakazato Y, Minami Y, et al. Nuclear Grading of Primary Pulmonary Adenocarcinomas: Correlation Between Nuclear Size and Prognosis. *Cancer* 2010;116:2011-2019.
- Ibarra JA, Rogers LW, et al. Fixation Time Does Not Affect the Expression of Estrogen Receptor. *Am J Clin Pathol* 2010;133:747-755.
- Yamaguchi R, Horii R, et al. Clinicopathologic Study of 53 Metaplastic Breast Carcinomas: Their Elements and Prognostic Implications. *Hum Pathol* 2010;41:679-685.
- Buza N, Cohen PJ, et al. Inverse p16 and p63 Expression in Small Cell Carcinoma and High-Grade Urothelial Cell Carcinoma of the Urinary Bladder. *Int J Surg Pathol* 2010;18:94-102.
- Laury AR, Hornick JL, et al. PAX8 Reliably Distinguishes Ovarian Serous Tumors From Malignant Mesothelioma. *Am J Surg Pathol* 2010;34:627-635.

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

FILE DIAGNOSES

CTTR Subscription B

May 2010

Case 1:

High grade urothelial carcinoma, invasive, bladder
T-74000, M-81203

Case 2:

Mixed germ cell tumor/mature & immature teratoma, testis
T-78000, M-86310

Case 3:

Xanthogranulomatous pyelonephritis
T-71000, M-44070

Case 4:

Cystic nephroma (multilocular cyst), kidney
T-71000, M-89601

Case 5:

Clear cell renal cell carcinoma, kidney
T-71000, M-83123

Case 6:

Mucinous tubular and spindle cell carcinoma, kidney
T-71000, M-80323

Case 7:

Wilms tumor (nephroblastoma), favorable histology, kidney
T-71000, M-89603

Case 8:

Complex basal cell hyperplasia, prostate
T-77100, M-72120

Case 9:

High grade prostatic adenocarcinoma (ductal/"endometrioid" pattern), Gleason 5+5, prostate
T-77100, M-83803

Case 10:

Mucinous (colloid) adenocarcinoma, prostate
T-77100, M-84803

Canoga Park - Poorly differentiated carcinoma with muscle invasion
Chico - Invasive urothelial carcinoma, high grade
Costa Mesa (College Hospital) - Angiosarcoma
Duarte (City of Hope) - Poorly differentiated carcinoma
Glendale - Sarcomatoid TCC
Loma Linda - Bladder, transitional cell carcinoma
Woodland Hills - Spindle cell carcinoma
Alabama (Cunningham Pathology, LLC) - Sarcomatoid carcinoma
Florida (Naples Pathology Associates) - Sarcomatoid urothelial cell carcinoma
Georgia, Atlanta - Invasive urothelial carcinoma
Georgia (Oconee Regional Medical Center) - High grade urothelial carcinoma, rule out angiosarcoma
Kansas (Coffeyville Regional Medical Center) - Poorly differentiated urothelial carcinoma
Kansas (Peterson Laboratory Services) - Invasive high grade urothelial carcinoma
Illinois (Heartland Regional Medical Center) - Invasive high grade urothelial carcinoma
Louisiana (LSUHSC Pathology) - Pleomorphic sarcoma
Maryland, Bethesda - Sarcomatoid carcinoma, urinary bladder
Maryland (University of Maryland) - Urothelial cell carcinoma, poorly differentiated
Michigan (Henry Ford Hospital) - Invasive urothelial carcinoma, high grade
Michigan (University of Michigan) - SCCA
New York (St. Joseph Hospital) - High grade urothelial carcinoma (sarcomatoid)
New York (Albany Medical Center) - Invasive urothelial carcinoma
New York (SUNY Stony Brook) - High grade urothelial carcinoma with sarcomatoid features
North Carolina (Winston-Salem) - Poorly differentiated carcinoma
Ohio, Columbus - High grade urothelial carcinoma
Ohio (The University of Toledo Medical Center) - Invasive high grade urothelial carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Invasive urothelial carcinoma, high grade (2)
Pennsylvania (Drexel University College of Medicine) - Urothelial carcinoma, high grade
Pennsylvania (Magee Women's Hospital) - Sarcomatoid carcinoma
Puerto Rico (University of Puerto Rico) - Sarcomatoid carcinoma/sarcoma (angiosarcoma)
Tennessee, Knoxville - Poorly differentiated carcinoma vs. angiosarcoma
Texas, Crystal Beach - Transitional cell carcinoma, high grade
Texas, Lubbock - Grade 3/1-3 urothelial carcinoma
Texas, San Antonio - Sarcomatoid urothelial carcinoma
Texas (Scott & White Memorial Hospital) - Invasive high grade urothelial carcinoma
Washington Bothell - High grade transitional cell carcinoma
Wisconsin, Madison - Hemangiosarcoma
Australia (St. Vincent's Hospital, Sydney) - High grade invasive urothelial carcinoma
Canada (Pasqua Hospital) - Grade 3, urothelial carcinoma
Canada (University of Sherbrooke) - Undifferentiated urothelial carcinoma
Japan (Asahi General Hospital) - Sarcomatoid carcinoma
Japan (University of Yamanashi) - Urothelial carcinoma, sarcomatoid variant
Singapore (Freeland/Locum Practice) - Invasive urothelial carcinoma, high grade with sarcomatoid features
Spain (Provisa Medical Center) - Sarcomatoid urothelial carcinoma
The Netherlands, Amstelveen - Urothelial cell carcinoma, grade 3
United Kingdom (John Radcliffe Hospital) - Transitional cell carcinoma
United Kingdom (Princes Risborough Study Group) - Sarcomatoid carcinoma

Case 1 - Diagnosis:

High grade urothelial carcinoma, invasive, bladder
T-74000, M-81203

Case 1 - References:

Sung MT; Wang M, et al. Histogenesis of sarcomatoid urothelial carcinoma of the urinary bladder: evidence for a common clonal origin with divergent differentiation. *J Pathol* 2007 Mar;211(4): p420-30.

Wang X; MacLennan GT, et al. Sarcomatoid carcinoma of the upper urinary tract: clinical outcome and molecular characterization. *Hum Pathol* 2009 Feb;40(2): p211-7.

Shanks JH; Iczkowski KA. Divergent differentiation in urothelial carcinoma and other bladder cancer subtypes with selected mimics. *Histopathology* 2009 Jun;54(7): p885-900.

Wright JL; Black PC, et al. Differences in survival among patients with sarcomatoid carcinoma, carcinosarcoma and urothelial carcinoma of the bladder. *J Urol* 2007 Dec;178(6): p2302-6; discussion 2307.

McKenney JK. An approach to the classification of spindle cell proliferations in the urinary bladder. *Adv Anat Pathol* 2005 Nov;12(6): p312-23.

Case No. 2, Accession No. 30260

May 2010

Canoga Park - Mature teratoma

Chico - Teratoma

Costa Mesa (College Hospital) - Benign teratoma

Duarte (City of Hope) - Immature teratoma

Glendale - Immature teratoma

Loma Linda - Teratoma, testis

Woodland Hills - Teratoma (testicle)

Alabama (Cunningham Pathology, LLC) - Teratoma

Florida (Naples Pathology Associates) - Teratoma

Georgia, Atlanta - Teratoma

Georgia (Oconee Regional Medical Center) - Mixed germ cell tumor of testis, teratoma and yolk sac tumor

Kansas (Coffeyville Regional Medical Center) - Teratoma

Kansas (Peterson Laboratory Services) - Teratoma

Illinois (Heartland Regional Medical Center) - Malignant mixed germ cell neoplasm (predominantly teratoma)

Louisiana (LSUHSC Pathology) - Immature teratoma

Maryland, Bethesda - Secondary invasive carcinoma in immature teratoma, testis

Maryland (University of Maryland) - Pure immature teratoma with intratubular germ cell neoplasia, undetermined

Michigan (Henry Ford Hospital) - Mixed germ cell tumor (teratoma and yolk sac components)

Michigan (University of Michigan) - Angiomyolipoma

New York (St. Joseph Hospital) - Immature teratoma

New York (Albany Medical Center) - Mature teratoma

New York (SUNY Stony Brook) - Mature teratoma

North Carolina (Winston-Salem) - Immature teratoma

Ohio, Columbus - Mature cystic teratoma

Ohio (The University of Toledo Medical Center) - Immature teratoma

Pennsylvania (Conemaugh Memorial Medical Center) - Sex cord tumor with annular tubules (2)

Pennsylvania (Drexel University College of Medicine) - Immature teratoma

Pennsylvania (Magee Women's Hospital) - Malignant mixed germ cell tumor consistent with adenocarcinoma, NOS

Puerto Rico (University of Puerto Rico) - Mature teratoma probably malignant

Tennessee, Knoxville - Teratoma

Texas, Crystal Beach - Testicular teratoma

Texas, Lubbock - Mixed germ cell tumor with 90% mature teratoma and 10% seminoma

Texas, San Antonio - Mixed germ cell tumor

Texas (Scott & White Memorial Hospital) - Mixed germ cell tumor with immature teratoma and yolk sac

Washington Bothell - Yolk sac tumor/granulosa cell tumor

Wisconsin, Madison - Immature teratoma

Australia (St. Vincent's Hospital, Sydney) - Immature teratoma, testis

Canada (Pasqua Hospital) - Teratoma IGCNU

Canada (University of Sherbrooke) - Mixed germ cell tumor

Japan (Asahi General Hospital) - Teratoma

[Japan \(University of Yamanashi\)](#) - Immature teratoma and yolk sac tumor
[Singapore \(Freeland/Locum Practice\)](#) - Immature teratoma and intratubular germ cell neoplasia
[Spain \(Provisa Medical Center\)](#) - Immature teratoma with malignant component
[The Netherlands, Amstelveen](#) - Malignant teratoma and seminoma
[United Kingdom \(John Radcliffe Hospital\)](#) - Mixed germ cell tumor, mature teratoma and seminoma
[United Kingdom \(Princes Risborough Study Group\)](#) - Immature teratoma with ITGCN

Case 2 - Diagnosis:

Mixed germ cell tumor/mature & immature teratoma, testis
 T-78000, M-86310

Case 2 - References:

Bahrami A; Ro JY, et al. An overview of testicular germ cell tumors. *Arch Pathol Lab Med* 2007 Aug;131(8): p1267-80.

Mann JR; Gray ES, et al. Mature and immature extracranial teratomas in children: the UK Children's Cancer Study Group Experience. *J Clin Oncol* 2008 Jul 20;26(21): p3590-7.

Balco MT; Burroughs FH, et al. Cytopathologic findings in an immature cystic teratoma: report of an unusual case. *Diagn Cytopathol* 2007 Feb;35(2): p120-2.

Shahidi H; Robia M. Bilateral germ cell tumors and androgen insensitivity syndrome. *J Clin Oncol* 2007 Oct 10;25(29): p4686-8.

Carver BS; Al-Ahmadie H, et al. Adult and pediatric testicular teratoma. *Urol Clin North Am* 2007 May;34(2): p245-51; abstract x.

Karam JA; Raj GV. Growing teratoma syndrome. *Urology* 2009 Oct;74(4): p783-4.

Case No. 3, Accession No. 30612

May 2010

[Canoga Park](#) - Xanthogranulomatous pyelonephritis
[Chico](#) - Xanthogranulomatous pyelonephritis
[Costa Mesa \(College Hospital\)](#) - Chronic pyelonephritis
[Duarte \(City of Hope\)](#) - Pyelonephritis
[Glendale](#) - Xanthogranulomatous pyelonephritis
[Loma Linda](#) - Suppurative pyelonephritis, kidney
[Woodland Hills](#) - Xanthogranulomatous pyelonephritis
[Alabama \(Cunningham Pathology, LLC\)](#) - Malakoplakia
[Florida \(Naples Pathology Associates\)](#) - Acute and chronic pyelonephritis
[Georgia, Atlanta](#) - Xanthogranulomatous pyelonephritis
[Georgia \(Oconee Regional Medical Center\)](#) - Xanthogranulomatous pyelonephritis
[Kansas \(Coffeyville Regional Medical Center\)](#) - Inflammatory pseudotumor
[Kansas \(Peterson Laboratory Services\)](#) - Xanthogranulomatous pyelonephritis
[Illinois \(Heartland Regional Medical Center\)](#) - Severe pyelonephritis
[Louisiana \(LSUHSC Pathology\)](#) - Xanthogranulomatous
[Maryland, Bethesda](#) - Xanthogranulomatous pyelonephritis, right kidney
[Maryland \(University of Maryland\)](#) - Xanthogranulomatous pyelonephritis
[Michigan \(Henry Ford Hospital\)](#) - Xanthogranulomatous pyelonephritis
[Michigan \(University of Michigan\)](#) - RCCA, clear cell type
[New York \(St. Joseph Hospital\)](#) - Xanthogranulomatous pyelonephritis
[New York \(Albany Medical Center\)](#) - Xanthogranulomatous pyelonephritis
[New York \(SUNY Stony Brook\)](#) - Xanthogranulomatous pyelonephritis
[North Carolina \(Winston-Salem\)](#) - Xanthogranulomatous pyelonephritis

Ohio, Columbus - Plasmacytoma
Ohio (The University of Toledo Medical Center) - Xanthogranulomatous pyelonephritis
Pennsylvania (Conemaugh Memorial Medical Center) - Xanthogranulomatous pyelonephritis (2)
Pennsylvania (Drexel University College of Medicine) - Xanthogranulomatous pyelonephritis
Pennsylvania (Magee Women's Hospital) - Xanthogranulomatous pyelonephritis
Puerto Rico (University of Puerto Rico) - Xanthogranulomatous pyelonephritis
Tennessee, Knoxville - Xanthogranulomatous pyelonephritis
Texas, Crystal Beach - Xanthogranulomatous pyelonephritis
Texas, Lubbock - Xanthomatous pyelonephritis
Texas, San Antonio - Xanthogranulomatous pyelonephritis
Texas (Scott & White Memorial Hospital) - Acute and chronic pyelonephritis
Washington Bothell - Plasmacytoma
Wisconsin, Madison - Xanthogranulomatous pyelonephritis
Australia (St. Vincent's Hospital, Sydney) - Xanthogranulomatous pyelonephritis (amyloid)
Canada (Pasqua Hospital) - Xanthogranulomatous pyelonephritis
Canada (University of Sherbrooke) - Xanthogranulomatous pyelonephritis
Japan (Asahi General Hospital) - Xanthogranulomatous pyelonephritis
Japan (University of Yamanashi) - Xanthogranulomatous pyelonephritis
Singapore (Freeland/Locum Practice) - Xanthogranulomatous inflammation
Spain (Provisa Medical Center) - Xanthogranulomatous pyelonephritis
The Netherlands, Amstelveen - Pyelonephritis
United Kingdom (John Radcliffe Hospital) - Xanthogranulomatous pyelonephritis
United Kingdom (Princes Risborough Study Group) - Xanthogranulomatous pyelonephritis

Case 3 - Diagnosis:

Xanthogranulomatous pyelonephritis
 T-71000, M-44070

Case 3 - References:

- Hussein N; Osman Y, et al. Xanthogranulomatous pyelonephritis in pediatric patients: effect of surgical approach. *Urology* 2009 Jun;73(6): p1247-50.
- Taskinen S; Giordano S, et al. Xanthogranulomatous pyelonephritis infiltrating the liver. *J Pediatr Surg* 2008 Oct;43(10): pe7-9.
- Bottalico T; Parks S, et al. Pediatric xanthogranulomatous pyelonephritis masquerading as complex renal mass. *Urology* 2007 Aug;70(2): p372.e11-2.
- Yigiter M; Ilgici D, et al. Renal parenchymal malacoplakia: a different stage of xanthogranulomatous pyelonephritis? *J Pediatr Surg* 2007 Jul;42(7): p35-8.
- Mohanty A; Kim O. Nonfunctional right kidney in a 50-year-old woman. Xanthogranulomatous pyelonephritis. *Arch Pathol Lab Med* 2005 Dec;129(12): p209-11.
- Korkes F; Favoretto RL, et al. Xanthogranulomatous pyelonephritis: clinical experience with 41 cases. *Urology* 2008 Feb;71(2): p178-80.
- Zugor V; Schott GE, et al. Xanthogranulomatous pyelonephritis in childhood: a critical analysis of 10 cases and of the literature. *Urology* 2007 Jul;70(1): p157-60.

Case No. 4, Accession No. 31116

May 2010

Canoga Park - Cystic nephroma
Chico - Cystic nephroma

Costa Mesa (College Hospital) - Angiomyoma
Duarte (City of Hope) - Cystic nephroma
Glendale - Mixed epithelial stromal tumor
Loma Linda - Atrophic cysts, kidney
Woodland Hills - Cystic nephroma
Alabama (Cunningham Pathology, LLC) - Cystic, partially differentiated nephroblastoma (cystic nephroma)
Florida (Naples Pathology Associates) - Polycystic kidney disease
Georgia, Atlanta - Mixed epithelial stromal tumor
Georgia (Oconee Regional Medical Center) - Cystic partially differentiated nephroma
Kansas (Coffeyville Regional Medical Center) - Inflammatory complex cyst
Kansas (Peterson Laboratory Services) - Cystic nephroma
Illinois (Heartland Regional Medical Center) - Multilocular cyst (cystic nephroma)
Louisiana (LSUHSC Pathology) - Cystic nephroma
Maryland, Bethesda - Renal dysplasia with cysts, right kidney
Maryland (University of Maryland) - Mixed epithelial stromal tumor
Michigan (Henry Ford Hospital) - Cystic nephroma
Michigan (University of Michigan) - Papillary RCCA
New York (St. Joseph Hospital) - Cystic nephroma (multilocular cyst)
New York (Albany Medical Center) - Mixed epithelial and stromal tumor
New York (SUNY Stony Brook) - Cystic nephroma (MEST)
North Carolina (Winston-Salem) - Multicystic nephroma
Ohio, Columbus - Cystic nephroma
Ohio (The University of Toledo Medical Center) - Cystic nephroma
Pennsylvania (Conemaugh Memorial Medical Center) - Mixed stromal and epithelial tumor (2)
Pennsylvania (Drexel University College of Medicine) - Cystic nephroma
Pennsylvania (Magee Women's Hospital) - Cystic nephroma
Puerto Rico (University of Puerto Rico) - Cystic nephroma
Tennessee, Knoxville - Cystic nephroma
Texas, Crystal Beach - Cortical cyst, fibrous
Texas, Lubbock - Multilocular cyst
Texas, San Antonio - Cystic nephroma
Texas (Scott & White Memorial Hospital) - Mixed epithelial and stromal tumor
Washington Bothell - Cystic nephroma
Wisconsin, Madison - Multiloculated cystic nephroma
Australia (St. Vincent's Hospital, Sydney) - Cystic nephroma
Canada (Pasqua Hospital) - Cystic nephroma
Canada (University of Sherbrooke) - Mixed epithelial and stromal tumor
Japan (Asahi General Hospital) - Cystic nephroma
Japan (University of Yamanashi) - Cystic nephroma
Singapore (Freeland/Locum Practice) - Cystic nephroma
Spain (Provisa Medical Center) - Multilocular cystic nephroma
The Netherlands, Amstelveen - Multicystic clear cell, renal cell carcinoma
United Kingdom (John Radcliffe Hospital) - Cystic nephroma
United Kingdom (Princes Risborough Study Group) - Cystic nephroma

Case 4 - Diagnosis:

Cystic nephroma (multilocular cyst), kidney
 T-71000, M-89601

Case 4 - References:

Gupta R; Dhingra K, et al. Multicystic nephroma: a case report. *Acta Cytol* 2007 Jul-Aug;51(4): p651-3.

Chen KT. Cytology of cystic nephroma: a case report. *Acta Cytol* 2008 Jan-Feb;52(1): p91-3.

Omar AM; Khattak AQ, et al. Cystic renal cell carcinoma arising from multilocular cystic nephroma of the same kidney. *Int Braz J Urol* 2006 Mar-Apr;32(2): p187-9; discussion 189.

Bal N; Kayaselcuk F, et al. Familial cystic nephroma in two siblings with pleuropulmonary blastoma. *Pathol Oncol Res* 2005;11(1): p53-6.

Bisceglia M; Galliani CA, et al. Renal cystic diseases: a review. *Adv Anat Pathol* 2006 Jan;13(1): p26-56.

Zhou M; Kort E, et al. Adult cystic nephroma and mixed epithelial and stromal tumor of the kidney are the same disease entity: molecular and histologic evidence. *Am J Surg Pathol* 2009 Jan;33(1): p72-80.

Turbiner J; Amin MB, et al. Cystic nephroma and mixed epithelial and stromal tumor of kidney: a detailed clinicopathologic analysis of 34 cases and proposal for renal epithelial and stromal tumor (REST) as a unifying term. *Am J Surg Pathol* 2007 Apr;31(4): p489-500.

Argani P. Metanephric neoplasms: the hyperdifferentiated, benign end of the Wilms tumor spectrum? *Clin Lab Med* 2005 Jun;25(2): p379-92.

Case No. 5, Accession No. 30710

May 2010

Canoga Park - Clear cell carcinoma of kidney

Chico - Renal cell carcinoma (clear cell vs. association with translocation Xp11.2)

Costa Mesa (College Hospital) - Renal cell carcinoma, clear cell type

Duarte (City of Hope) - Renal cell carcinoma

Glendale - Renal cell carcinoma, Xp11 translocation

Loma Linda - Renal cell carcinoma, kidney

Woodland Hills - Renal cell carcinoma, clear cell type, Fuhrman grade 3

Alabama (Cunningham Pathology, LLC) - Renal cell carcinoma, chromophobe

Florida (Naples Pathology Associates) - Renal cell carcinoma, clear cell type

Georgia, Atlanta - Clear cell/conventional renal cell carcinoma

Georgia (Oconee Regional Medical Center) - Clear cell renal cell carcinoma

Kansas (Coffeyville Regional Medical Center) - Clear cell renal carcinoma

Kansas (Peterson Laboratory Services) - Clear cell renal cell carcinoma

Illinois (Heartland Regional Medical Center) - Renal cell carcinoma, clear cell type

Louisiana (LSUHSC Pathology) - Papillary clear cell carcinoma

Maryland, Bethesda - Clear cell (conventional) renal cell carcinoma, left kidney

Maryland (University of Maryland) - Clear cell papillary renal cell carcinoma

Michigan (Henry Ford Hospital) - Clear cell papillary renal cell carcinoma

Michigan (University of Michigan) - Mucinous tubular carcinoma

New York (St. Joseph Hospital) - Renal cell carcinoma, clear cell type

New York (Albany Medical Center) - Renal cell carcinoma, clear cell type

New York (SUNY Stony Brook) - Xp11.2 translocation carcinoma with focal rhabdoid features

North Carolina (Winston-Salem) - Renal cell carcinoma

Ohio, Columbus - Renal cell carcinoma, clear cell type

Ohio (The University of Toledo Medical Center) - Renal cell carcinoma, clear cell type, grade 2

Pennsylvania (Conemaugh Memorial Medical Center) - Renal cell carcinoma, clear cell type (2)

Pennsylvania (Drexel University College of Medicine) - Papillary renal cell carcinoma

Pennsylvania (Magee Women's Hospital) - Clear cell renal cell carcinoma

Puerto Rico (University of Puerto Rico) - Clear cell renal carcinoma associated with Xp11.2 translocation/TFE3 gene fusions

Tennessee, Knoxville - Clear cell renal cell carcinoma

Texas, Crystal Beach - Renal cell carcinoma, clear cell type

Texas, Lubbock - Chromophobe carcinoma

Texas, San Antonio - Clear cell carcinoma

Texas (Scott & White Memorial Hospital) - Clear cell renal cell carcinoma

Washington Bothell - Clear cell renal cell carcinoma

Wisconsin, Madison - Renal cell carcinoma, chromophobe type

Australia (St. Vincent's Hospital, Sydney) - Favor translocation carcinoma, kidney
Canada (Pasqua Hospital) - Renal cell carcinoma with features of Xp11.2 translocation
Canada (University of Sherbrooke) - Clear cell carcinoma
Japan (Asahi General Hospital) - Renal cell carcinoma associated with Xp11.2 translocations
Japan (University of Yamanashi) - Clear cell carcinoma
Singapore (Freeland/Locum Practice) - Papillary renal cell carcinoma, type II
Spain (Provisa Medical Center) - Clear cell renal cell carcinoma
The Netherlands, Amstelveen - Clear cell renal cell carcinoma, Fuhrmans grade 2
United Kingdom (John Radcliffe Hospital) - Clear cell renal cell carcinoma
United Kingdom (Princes Risborough Study Group) - Papillary renal cell carcinoma; DDx: Xp11.2 translocation carcinoma

Case 5 - Diagnosis:

Clear cell renal cell carcinoma, kidney

T-71000, M-83123

Director's note: Molecular studies/chromosomal analysis were not performed on this case. (drc)

Case 5 - References:

Meyer PN; Clark JI, et al. Xp11.2 translocation renal cell carcinoma with very aggressive course in five adults. *Am J Clin Pathol* 2007 Jul;128(1): p70-9.

Rakheja D; Kapur P, et al. Pediatric renal cell carcinomas with Xp11.2 rearrangements are immunoreactive for hMLH1 and hMSH2 proteins. *Pediatr Dev Pathol* 2005 Nov-Dec;8(6): p615-20.

Kuroda N; Tamura M, et al. Adult-onset renal cell carcinoma associated with Xp11.2 translocations/TFE3 gene fusion with smooth muscle stroma and abnormal vessels. *Pathol Int* 2009 Jul;59(7): p486-91.

Altinok G; Kattar MM, et al. Pediatric renal carcinoma associated with Xp11.2 translocations/TFE3 gene fusions and clinicopathologic associations. *Pediatr Dev Pathol* 2005 Mar-Apr;8(2): p168-80.

Argani P; Ladanyi M. Translocation carcinomas of the kidney. *Clin Lab Med* 2005 Jun;25(2): p363-78.

Mansouri D; Dimet S, et al. Renal cell carcinoma with an Xp11.2 translocation in a 16-year-old girl: a case report with cytological features. *Diagn Cytopathol* 2006 Nov;34(11): p757-60.

Case No. 6, Accession No. 31088

May 2010

Canoga Park - Tubular/spindle cell carcinoma
Chico - Collecting duct carcinoma
Costa Mesa (College Hospital) - Renal cell carcinoma, collecting duct type
Duarte (City of Hope) - Papillary renal cell carcinoma
Glendale - Mucinous tubular and spindle cell carcinoma
Loma Linda - Tubular renal cell carcinoma, kidney
Woodland Hills - Medullary carcinoma (renal cell carcinoma, medullary type)
Alabama (Cunningham Pathology, LLC) - Renal cell carcinoma, papillary with osseous metaplasia
Florida (Naples Pathology Associates) - Collecting duct carcinoma with osseous metaplasia
Georgia, Atlanta - Renal cell carcinoma, unclassified
Georgia (Oconee Regional Medical Center) - Collecting duct carcinoma
Kansas (Coffeyville Regional Medical Center) - Collecting duct carcinoma
Kansas (Peterson Laboratory Services) - Papillary renal cell carcinoma
Illinois (Heartland Regional Medical Center) - Renal cell carcinoma, collecting duct type
Louisiana (LSUHSC Pathology) - Papillary renal cell carcinoma
Maryland, Bethesda - Papillary & clear cell (conventional) renal cell carcinoma, right kidney
Maryland (University of Maryland) - Mucinous tubular spindle cell carcinoma

Michigan (Henry Ford Hospital) - Papillary renal cell carcinoma
Michigan (University of Michigan) - Wilms
New York (St. Joseph Hospital) - Renal cell carcinoma, papillary type
New York (Albany Medical Center) - Collecting duct carcinoma
New York (SUNY Stony Brook) - Mucinous tubular and spindle cell carcinoma
North Carolina (Winston-Salem) - Renal cell carcinoma with oncocytic papillary and sarcomatous features
Ohio, Columbus - Mucinous tubular and spindle cell carcinoma
Ohio (The University of Toledo Medical Center) - Collecting duct carcinoma of the kidney
Pennsylvania (Conemaugh Memorial Medical Center) - Collecting duct carcinoma, favor mucinous tubular and spindle cell carcinoma (2)
Pennsylvania (Drexel University College of Medicine) - Collecting duct carcinoma
Pennsylvania (Magee Women's Hospital) - Mucinous tubular and spindle cell carcinoma
Puerto Rico (University of Puerto Rico) - Carcinoma of the collecting ducts of Bellini
Tennessee, Knoxville - Mucinous tubular and spindle cell carcinoma
Texas, Crystal Beach - Collecting duct renal carcinoma
Texas, Lubbock - Collecting duct carcinoma
Texas, San Antonio - Mucinous tubular and spindle cell carcinoma
Texas (Scott & White Memorial Hospital) - Papillary renal cell carcinoma
Washington Bothell - Collecting duct carcinoma
Wisconsin, Madison - Renal cell carcinoma, collecting duct carcinoma
Australia (St. Vincent's Hospital, Sydney) - Favor papillary renal cell carcinoma
Canada (Pasqua Hospital) - Metanephric adenoma
Canada (University of Sherbrooke) - Adenocarcinoma
Japan (Asahi General Hospital) - Mucinous tubular and spindle cell carcinoma
Japan (University of Yamanashi) - Mucinous tubular and spindle cell
Singapore (Freeland/Locum Practice) - Collecting duct carcinoma
Spain (Provisa Medical Center) - Collecting ducts of Bellini carcinoma
The Netherlands, Amstelveen - Mucinous tubulo spindle cell carcinoma
United Kingdom (John Radcliffe Hospital) - Collecting duct carcinoma
United Kingdom (Princes Risborough Study Group) - Collecting duct carcinoma

Case 6 - Diagnosis:

Mucinous tubular and spindle cell carcinoma, kidney
 T-71000, M-80323

Director's note: This recently described tumor was originally dx'd as a variant of collecting duct carcinoma. (drc)

Case 6 - References:

Fine SW; Argani P; Reuter VE; Epstein JI. Expanding the histologic spectrum of mucinous tubular and spindle cell carcinoma of the kidney. *Am J Surg Pathol* 2006 Dec;30(12): p1554-60.

Pillay N; Ramdial PK, et al. Mucinous tubular and spindle cell carcinoma with aggressive histomorphology--a sarcomatoid variant. *Hum Pathol* 2008 Jun;39(6): p966-9.

Owens CL; Argani P; Ali SZ. Mucinous tubular and spindle cell carcinoma of the kidney: cytopathologic findings. *Diagn Cytopathol* 2007 Sep;35(9): p593-6.

Argani P; Netto GJ; Parwani AV. Papillary renal cell carcinoma with low-grade spindle cell foci: a mimic of mucinous tubular and spindle cell carcinoma. *Am J Surg Pathol* 2008 Sep;32(9): p1353-9.

Farah R; Ben-Izhak O, et al. Low-grade renal collecting duct carcinoma. A case report with histochemical, immunohistochemical, and ultrastructural study. *Ann Diagn Pathol* 2005 Feb;9(1): p46-8.

Case No. 7, Accession No. 31159

May 2010

Canoga Park - Wilms tumor
Chico - Nephroblastoma (Wilms tumor)
Costa Mesa (College Hospital) - Wilms tumor
Duarte (City of Hope) - Peripheral neuro-ectodermal tumor
Glendale - Wilms
Loma Linda - Wilms tumor
Woodland Hills - Nephroblastoma
Alabama (Cunningham Pathology, LLC) - Wilms tumor
Florida (Naples Pathology Associates) - Wilms tumor
Georgia, Atlanta - Wilms tumor
Georgia (Oconee Regional Medical Center) - Wilms tumor vs. PNET/neuroblastoma
Kansas (Coffeyville Regional Medical Center) - Nephroblastoma (Wilms tumor)
Kansas (Peterson Laboratory Services) - Nephroblastoma
Illinois (Heartland Regional Medical Center) - Nephroblastoma
Louisiana (LSUHSC Pathology) - Wilms tumor
Maryland, Bethesda - Wilms tumor, left kidney
Maryland (University of Maryland) - Nephroblastoma (Wilms tumor)
Michigan (Henry Ford Hospital) - Wilms tumor
Michigan (University of Michigan) - Urothelial carcinoma
New York (St. Joseph Hospital) - Wilms tumor
New York (Albany Medical Center) - Wilms tumor
New York (SUNY Stony Brook) - Wilms tumor
North Carolina (Winston-Salem) - Wilms tumor
Ohio, Columbus - Wilms tumor
Ohio (The University of Toledo Medical Center) - Nephroblastoma
Pennsylvania (Conemaugh Memorial Medical Center) - Wilms tumor (2)
Pennsylvania (Drexel University College of Medicine) - Wilms tumor
Pennsylvania (Magee Women's Hospital) - Wilms tumor, blastoma dominant
Puerto Rico (University of Puerto Rico) - Wilms tumor, favorable histology
Tennessee, Knoxville - Wilms tumor
Texas, Crystal Beach - Transitional cell carcinoma
Texas, Lubbock - Wilms tumor
Texas, San Antonio - Wilms tumor
Texas (Scott & White Memorial Hospital) - Wilms tumor
Washington Bothell - Nephroblastoma/Wilms
Wisconsin, Madison - Wilms tumor
Australia (St. Vincent's Hospital, Sydney) - Nephroblastoma
Canada (Pasqua Hospital) - Nephroblastoma
Canada (University of Sherbrooke) - Wilms tumor
Japan (Asahi General Hospital) - Nephroblastoma
Japan (University of Yamanashi) - Nephroblastoma
Singapore (Freeland/Locum Practice) - Wilms tumor
Spain (Provisa Medical Center) - Nephroblastoma/tumor of Wilms
The Netherlands, Amstelveen - Wilms tumor (nephroblastoma)
United Kingdom (John Radcliffe Hospital) - Wilms tumor
United Kingdom (Princes Risborough Study Group) - Wilms tumor (nephroblastoma)

Case 7 - Diagnosis:

Wilms tumor (nephroblastoma), favorable histology, kidney
 T-71000, M-89603

Case 7 - References:

Lazarus J; Moolman C. Renal cell carcinoma as second malignancy in patient with previous Wilms tumor.
Urology 2009 Sep;74(3): p598-600.

Giordano G; Campanini N, et al. C-kit protein expression in Wilms tumour: an immunohistochemical study. *Eur J Surg Oncol* 2009 Jun;35(6): p629-35.

van den Hoek J; de Krijger R, et al. Cystic nephroma, cystic partially differentiated nephroblastoma and cystic Wilms tumor in children: a spectrum with therapeutic dilemmas. *Urol Int* 2009;82(1): p65-70.

Okasho K; Nishiyama H, et al. Adult Wilms tumor in the renal pelvis: case report with review of the literature. *Urology* 2008 Nov;72(5): p1185.e5-7.

Fukuzawa R; Anaka MR, et al. Wilms tumour histology is determined by distinct types of precursor lesions and not epigenetic changes. *J Pathol* 2008 Aug;215(4): p377-87.

D'Angio GJ. The National Wilms Tumor Study: a 40 year perspective. *Lifetime Data Anal* 2007 Dec;13(4): p463-70.

Khayyata S; Grignon DJ, et al. Metanephric adenoma vs. Wilms tumor: a report of 2 cases with diagnosis by fine needle aspiration and cytologic comparisons. *Acta Cytol* 2007 May-Jun;51(3): p464-7.

Case No. 8, Accession No. 23996

May 2010

Canoga Park - Incomplete basal cell hyperplasia

Chico - Benign prostatic hyperplasia

Costa Mesa (College Hospital) - Atypical hyperplasia

Duarte (City of Hope) - Ductal adenocarcinoma

Glendale - Basal cell hyperplasia

Loma Linda - Prostate tubular carcinoma with psammoma bodies

Woodland Hills - Basal cell hyperplasia of prostate

Alabama (Cunningham Pathology, LLC) - Prostatic adenocarcinoma

Florida (Naples Pathology Associates) - Benign prostatic hyperplasia

Georgia, Atlanta - Prostatic adenocarcinoma with calcifications

Georgia (Oconee Regional Medical Center) - Basal cell hyperplasia

Kansas (Coffeyville Regional Medical Center) - Atypical adenomatous hyperplasia

Kansas (Peterson Laboratory Services) - Basal cell hyperplasia

Illinois (Heartland Regional Medical Center) - Prostatic hyperplasia

Louisiana (LSUHSC Pathology) - Sclerosing adenoma of prostate

Maryland, Bethesda - Chronic prostatitis and prostatic calculi, prostate gland

Maryland (University of Maryland) - Stromal tumor of unknown malignant potential, basal cell hyperplasia

Michigan (Henry Ford Hospital) - Benign prostatic tissue with basal cell hyperplasia

Michigan (University of Michigan) - Invasive urothelial consistent with squamous differentiation

New York (St. Joseph Hospital) - Fibroadenoma of prostate

New York (Albany Medical Center) - Prostate adenocarcinoma (3+4)

New York (SUNY Stony Brook) - Adenoid basal cell tumor

North Carolina (Winston-Salem) - Complex basal cell hyperplasia

Ohio, Columbus - Nodular hyperplasia

Ohio (The University of Toledo Medical Center) - Benign prostatic hyperplasia

Pennsylvania (Conemaugh Memorial Medical Center) - Adenoid basal cell tumor (2)

Pennsylvania (Drexel University College of Medicine) - Prostatic adenocarcinoma

Pennsylvania (Magee Women's Hospital) - Cribriform hyperplasia and sclerosing adenosis

Puerto Rico (University of Puerto Rico) - Basal cell hyperplasia, rule out adenocarcinoma

Tennessee, Knoxville - Hyperplasia of mesonephric remnants

Texas, Crystal Beach - Prostatic adenocarcinoma, mostly intraepithelial

Texas, Lubbock - Nodular hyperplasia

Texas, San Antonio - Urothelial metaplasia of prostate

Texas (Scott & White Memorial Hospital) - Nodular prostatic hyperplasia with prominent calcifications

Washington Bothell - Benign prostatic hyperplasia

Wisconsin, Madison - Benign prostatic hyperplasia

Australia (St. Vincent's Hospital, Sydney) - Adenomyomatous hyperplasia
Canada (Pasqua Hospital) - Basal cell hyperplasia
Canada (University of Sherbrooke) - Benign adenomatous hyperplasia
Japan (Asahi General Hospital) - Nephrogenic adenoma
Japan (University of Yamanashi) - Nodular hyperplasia
Singapore (Freeland/Locum Practice) - Prostatic adenocarcinoma, Gleason score 3+3
Spain (Provisa Medical Center) - Basal cell hyperplasia with psammoma bodies/benign nodular hyperplasia, small glandular variant
United Kingdom (John Radcliffe Hospital) - Mesonephric remnant hyperplasia
United Kingdom (Princes Risborough Study Group) - Atypical adenomatous hyperplasia

Case 8 - Diagnosis:

Complex basal cell hyperplasia, prostate
 T-77100, M-72120

Case 8 - References:

Garcia FU; Haber MM, et al. Prostatic basal cells in the peripheral and transitional zones: zonal variation in morphology and in immunophenotype. *Prostate* 2007 Nov 1;67(15): p1686-92.

 Zhou M; Magi-Galluzzi C; Epstein JI. Prostate basal cell lesions can be negative for basal cell keratins: a diagnostic pitfall. *Anal Quant Cytol Histol* 2006 Jun;28(3): p125-9.

 Hosler GA; Epstein JI. Basal cell hyperplasia: an unusual diagnostic dilemma on prostate needle biopsies. *Hum Pathol* 2005 May;36(5): p480-5.

 McKenney JK; Amin MB; Srigley JR, et al. Basal cell proliferations of the prostate other than usual basal cell hyperplasia: a clinicopathologic study of 23 cases, including four carcinomas, with a proposed classification. *Am J Surg Pathol* 2004 Oct;28(10): p1289-98.

 Rioux-Leclercq NC; Epstein JI. Unusual morphologic patterns of basal cell hyperplasia of the prostate. *Am J Surg Pathol* 2002 Feb;26(2): p237-43.

Case No. 9, Accession No. 23872

May 2010

Canoga Park - Apocrine carcinoma
Chico - Prostatic adenocarcinoma (with Gleason pattern 5a)
Costa Mesa (College Hospital) - Adenocarcinoma, Gleason 3+3
Duarte (City of Hope) - Adenocarcinoma, Gleasons grade 5, comedo type
Glendale - Prostatic adenocarcinoma
Loma Linda - Prostatic intraductal carcinoma
Woodland Hills - Prostatic adenocarcinoma, grade 5+5+10
Alabama (Cunningham Pathology, LLC) - Collecting duct carcinoma
Florida (Naples Pathology Associates) - Prostatic ductal carcinoma
Georgia, Atlanta - Prostatic adenocarcinoma with intraductal features
Georgia (Oconee Regional Medical Center) - Intraductal carcinoma of prostate
Kansas (Coffeyville Regional Medical Center) - Adenocarcinoma (Gleasons 4)
Kansas (Peterson Laboratory Services) - Ductal adenocarcinoma, Gleason 5
Illinois (Heartland Regional Medical Center) - Prostatic adenocarcinoma, ductal type
Louisiana (LSUHSC Pathology) - Adenocarcinoma
Maryland, Bethesda - Cribiform prostatic duct adenocarcinoma, prostate gland
Maryland (University of Maryland) - Prostatic adenocarcinoma (5+4=9)
Michigan (Henry Ford Hospital) - Intraductal urothelial carcinoma, high grade
Michigan (University of Michigan) - Granuloma
New York (St. Joseph Hospital) - Prostatic adenocarcinoma, poorly differentiated
New York (Albany Medical Center) - Prostate adenocarcinoma (5+4)

New York (SUNY Stony Brook) - Prostatic adenocarcinoma, Gleason score 10 (5+5)
North Carolina (Winston-Salem) - Adenocarcinoma
Ohio, Columbus - Prostate adenocarcinoma
Ohio (The University of Toledo Medical Center) - Intraductal carcinoma of the prostate, Gleason score 5+5+10
Pennsylvania (Conemaugh Memorial Medical Center) - Ductal adenocarcinoma of prostate (2)
Pennsylvania (Drexel University College of Medicine) - Prostatic adenocarcinoma
Pennsylvania (Magee Women's Hospital) - Ductal adenocarcinoma
Puerto Rico (University of Puerto Rico) - Adenocarcinoma, consistent with prostatic duct carcinoma
Tennessee, Knoxville - Prostatic adenocarcinoma (4+5=9)
Texas, Crystal Beach - Prostatic duct carcinoma
Texas, Lubbock - Cribriform acinar carcinoma
Texas, San Antonio - Urothelial carcinoma
Texas (Scott & White Memorial Hospital) - Prostatic adenocarcinoma, Gleason score 5+5+10
Washington Bothell - Prostate adenocarcinoma
Wisconsin, Madison - Prostate duct carcinoma
Australia (St. Vincent's Hospital, Sydney) - Adenocarcinoma prostate (Gleason pattern 5) + intraductal carcinoma
Canada (Pasqua Hospital) - Prostatic carcinoma, high grade
Canada (University of Sherbrooke) - Adenocarcinoma
Japan (Asahi General Hospital) - Prostatic duct adenocarcinoma
Japan (University of Yamanashi) - Intraductal carcinoma
Singapore (Freeland/Locum Practice) - Prostatic adenocarcinoma, Gleason score 5+4
Spain (Provisa Medical Center) - Prostatic adenocarcinoma, Gleason 5+5+10 with comedo necrosis
The Netherlands, Amstelveen - Adenocarcinoma (Gleasons 8)
United Kingdom (John Radcliffe Hospital) - High grade PIN
United Kingdom (Princes Risborough Study Group) - Prostatic carcinoma, Gleason 5+5

Case 9 - Diagnosis:

High grade prostatic adenocarcinoma (ductal/"endometrioid" pattern), Gleason 5+5, prostate
 T- 77100, M-83803

Case 9 - References:

- Cheng CJ; Chen KC, et al. Ductal adenocarcinoma of the prostate with endometrioid features in a 69-year-old man. *J Formos Med Assoc* (China 2001 Oct;100(10): p707-11.
- Mai KT; Landry DC, et al. Secondary colonic adenocarcinoma of the prostate histologically mimicking prostatic ductal adenocarcinoma. *Tumori* 2002 Jul-Aug;88(4): p341-4.
- Fan CY; Wang J; Barnes EL. Expression of androgen receptor and prostatic specific markers in salivary duct carcinoma: an immunohistochemical analysis of 13 cases and review of the literature. *Am J Surg Pathol* 2000 Apr;24(4): p579-86.
- MacLennan GT; Eisenberg R, et al. The influence of chronic inflammation in prostatic carcinogenesis: a 5-year followup study. *J Urol* 2006 Sep;176(3): p1012-6.
- Pickup M; Van der Kwast TH. My approach to intraductal lesions of the prostate gland. *J Clin Pathol* 2007 Aug;60(8): p856-65.
- Huan Y; Idrees M, et al. Sarcomatoid carcinoma after radiation treatment of prostatic adenocarcinoma. *Ann Diagn Pathol* 2008 Apr;12(2): p142-5.

Case No. 10, Accession No. 19173

May 2010

Canoga Park - Colloid carcinoma
Chico - Mucinous carcinoma

Costa Mesa (College Hospital) - Mucinous secreting adenocarcinoma
Duarte (City of Hope) - Colloid carcinoma
Glendale - Mucinous carcinoma
Loma Linda - Mucinous producing
Woodland Hills - Mucinous carcinoma
Alabama (Cunningham Pathology, LLC) - Mucinous (colloid) adenocarcinoma
Florida (Naples Pathology Associates) - Mucinous adenocarcioma
Georgia, Atlanta - Mucinous adenocarcinoma of the prostate
Georgia (Oconee Regional Medical Center) - Mucious adenocarcinoma of prostate, rule out metastasis
Kansas (Coffeyville Regional Medical Center) - Mucinous adenocarcinoma
Kansas (Peterson Laboratory Services) - Mucinous carcinoma, Gleason 4
Illinois (Heartland Regional Medical Center) - Invasive mucinous adenocarcinoma
Louisiana (LSUHSC Pathology) - Mucinous producing adenocarcinoma
Maryland, Bethesda - Mucinous (colloid) adenocarcinoma, prostate gland
Maryland (University of Maryland) - Mucinous adenocarcinoma, origin undetermined
Michigan (Henry Ford Hospital) - Prostatic mucinous (colloid) carcinoma
Michigan (University of Michigan) - Angiosarcoma
New York (St. Joseph Hospital) - Mucinous adenocarcinoma
New York (Albany Medical Center) - Mucinous carcinoma
New York (SUNY Stony Brook) - Mucinous carcinoma
North Carolina (Winston-Salem) - Mucinous adenocarcinoma
Ohio, Columbus - Mucinous adenocarcinoma
Ohio (The University of Toledo Medical Center) - Mucinous adenocarcinoma of the prostate, Gleason score 5+5=10
Pennsylvania (Conemaugh Memorial Medical Center) - Mucinous carcinoma of prostate (2)
Pennsylvania (Drexel University College of Medicine) - Mucinous adenocarcinoma with signet-ring cells
Pennsylvania (Magee Women's Hospital) - Mucinous carcinoma
Puerto Rico (University of Puerto Rico) - Mucinous adenocarcinoma of prostate
Tennessee, Knoxville - Mucinous (colloid) carcinoma
Texas, Crystal Beach - Mucinous cell adenocarcinoma (probably rectal)
Texas, Lubbock - Mucinous carcinoma
Texas, San Antonio - Prostatic adenocarcinoma, colloid variant
Texas (Scott & White Memorial Hospital) - Mucinous adenocarcinoma with signet ring cells
Washington Bothell - Mucinous prostate adenocarcinoma
Wisconsin, Madison - Mucinous carcinoma
Australia (St. Vincent's Hospital, Sydney) - Mucinous carcinoma, prostate
Canada (Pasqua Hospital) - Mucinous adenocarcinoma, rectal primary
Canada (University of Sherbrooke) - Mucinous adenocarcinoma consistent with pseudomyxoma peritonei
Japan (Asahi General Hospital) - Mucinous adenocarcinoma
Japan (University of Yamanashi) - Mucinous adenocarcinoma
Singapore (Freeland/Locum Practice) - Mucinous adenocarcinoma
Spain (Provisa Medical Center) - Mucinous/colloid adenocarcinoma
The Netherlands, Amstelveen - Mucinous adenocarcinoma and mucinous dissection
United Kingdom (John Radcliffe Hospital) - Mucinous carcinoma
United Kingdom (Princes Risborough Study Group) - Mucinous adenocarcinoma

Case 10 - Diagnosis:

Mucinous (colloid) adenocarcinoma, prostate
 T-77100, M-84803

Case 10 - References:

Lane BR; Magi-Galluzzi C, et al. Mucinous adenocarcinoma of the prostate does not confer poor prognosis.
Urology 2006 Oct;68(4): p825-30.

Osunkoya AO; Epstein JI. Primary mucin-producing urothelial-type adenocarcinoma of prostate: report of 15 cases. *Am J Surg Pathol* 2007 Sep;31(9): p1323-9.

Osunkoya AO; Nielsen ME; Epstein JI. Prognosis of mucinous adenocarcinoma of the prostate treated by radical prostatectomy: a study of 47 cases. *Am J Surg Pathol* 2008 Mar;32(3): p468-72.

Osunkoya AO; Adsay NV, et al. MUC2 expression in primary mucinous and nonmucinous adenocarcinoma of the prostate: an analysis of 50 cases on radical prostatectomy. *Mod Pathol* 2008 Jul;21(7): p789-94.

Perez-Guillermo M; Acosta-Ortega J, et al. Pitfalls and infrequent findings in fine-needle aspiration of the prostate gland. *Diagn Cytopathol* 2005 Aug;33(2): p126-37.