1129

CALIFORNIA
TUMOR TISSUE REGISTRY

STUDY CASES

MAY 1998

"GENITOURINARY PATHOLOGY"

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
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FAX: (909) 478-4188
E-mail: cttr@linkline.com

Target audience:

Practicing pathologists and pathology residents.

Goal:

To acquaint the participant with the histologic features of a variety of benign and malignant neoplasms and tumor-like conditions.

Objective:

The participant will be able to recognize morphologic features of a variety of benign and malignant neoplasms and tumor-like conditions and relate those processes to pertinent references in the medical literature.

Educational methods and media:

Review of representative glass slides with associated histories.
Feedback on consensus diagnoses from participating pathologists.
Listing of selected references from the medical literature.

Principal faculty:

Weldon K. Bullock, MD
Donald R. Chase, MD

CME Credit:

The CTTR designates this activity for up to 2 hours of continuing medical education. Participants must return their diagnoses to the CTTR as documentation of participation in this activity.

Accreditation:

The California Tumor Tissue Registry is accredited by the California Medical Association as a provider of continuing medical education.

CONTRIBUTOR: Thomas Canfield, M.D.
Montrose, CO

CASE NO. 1 - MAY 1998

TISSUE FROM: Scrotum

ACCESSION #28277

CLINICAL ABSTRACT:

This 64-year old male presented with a six month history of a gradually enlarging scrotal mass and progressive weakness. His general appearance was somewhat Cushingoid. He had hyperglycemia and low serum potassium. Serum PSA was 0, ACTH 1264, cortisol 8300 mcg/24 hours. Work-up showed evidence of bony metastases. CT showed enlarged, hyperplastic adrenal glands bilaterally. An excisional scrotal biopsy was performed. Five years earlier, after the finding of an elevated PSA, he was diagnosed with a poorly differentiated prostatic adenocarcinoma, treated with radiation, bilateral orchiectomy, and flutamide. At that time, the testes showed only atrophic changes.

GROSS PATHOLOGY:

The specimen consisted of an irregular, 10.0 x 4.0 x 4.0 cm, tear-drop shaped nodule which was surrounded by fibroadipose connective tissue. The cut surfaces showed areas of fibrosis and soft, yellow-gray material.

SPECIAL STUDIES:

Cytokeratin (CAM 5.2)	positive	NSE	positive
Chromogranin	positive	ACTH	positive (1+)
PAP	negative	PSA	negative

CONTRIBUTOR: Alexandra Reichman, M.D.
Marysville, CA

CASE NO. 2 - MAY 1998

TISSUE FROM: Testis

ACCESSION #27741

CLINICAL ABSTRACT:

This 25-year old Hispanic male field worker presented with a six month history of a mass in the left scrotal area. Serum alpha fetoprotein was significantly elevated at 3,700 and HCG was 9.

GROSS PATHOLOGY:

The 209 gram specimen included 10.0 x 6.0 x 5.5 cm testis and 9.0 cm of spermatic cord. A 9.5 x 6.0 x 5.5 cm tumor replaced the majority of the testicle. The tumor had a variegated cut surface tissue with areas of hemorrhage, necrosis and cystic degeneration.

CONTRIBUTOR: H.E. Otto, M.D.
Cheboygan, MI

CASE NO. 3 - MAY 1998

TISSUE FROM: Left testis

ACCESSION #27067

CLINICAL ABSTRACT:

This 32-year-old white male had a four month history of left testicular enlargement and presented after one week of testicular pain. A left radical orchiectomy was performed.

GROSS PATHOLOGY:

The 170 gram, 7 x 6 x 3.5 cm testis was 90% replaced by a bulging tan-gray, multinodular tumor. Multiple sections through the tumor showed focal areas of hemorrhage and necrosis up to 2.0 cm in diameter.

CONTRIBUTOR: Michelle Meyer, M.D.
Riverside, CA

CASE NO. 4 - MAY 1998

TISSUE FROM: Left testicle

ACCESSION #27959

CLINICAL ABSTRACT:

This 14-year-old male was found to have an enlarged undescended testicle in the left inguinal region.

GROSS PATHOLOGY:

The specimen consisted of a 155 gram, 9.0 x 7.0 x 5.5 cm mass with a 7.0 cm length of vas deferens. The mass was covered by a membranous tan-gray capsule with prominent vascularity. The cut surface was fleshy and pale pink-tan with a 4.0 cm area of variegated red-gray and opaque yellow apparent necrosis. The circumscribed mass surrounded a 4.0 cm testis and appeared to be confined by the capsule.

CONTRIBUTOR: Mark J. DeMeo, M.D.
Santa Rosa, CA

CASE NO. 5 - MAY 1998

TISSUE FROM: Left testicle

ACCESSION #28228

CLINICAL ABSTRACT:

This 35-year-old male presented with a left testicular mass, which was noted on self examination. He was entirely asymptomatic and denied any history of trauma to the area, pain or scrotal surgery. A left radical orchiectomy was performed.

GROSS PATHOLOGY:

The 5.0 x 3.5 x 2.8 cm testis contained a palpable mobile mass within the distal pole. A second nodule was found near the opposite end of the testis on serial sectioning. Neither tumor site was greater than 1.0 cm in diameter.

CONTRIBUTOR: Arno Roscher, M.D.
Granada Hills, CA

CASE NO. 6 - MAY 1998

TISSUE FROM: Bladder

ACCESSION #28137

CLINICAL ABSTRACT:

This 79-year-old male presented with gross hematuria. A transrethral resection of the bladder was performed, followed by a radical cystectomy.

GROSS PATHOLOGY:

The TUR specimen consisted of a 16 gram aggregate of multiple tissue fragments up to 0.5 cm in greatest diameter.

CONTRIBUTOR: Howard E. Otto, M.D.
Cheboygen, MI

CASE NO. 7 - MAY 1998

TISSUE FROM: Bladder

ACCESSION #26940

CLINICAL ABSTRACT:

This 87-year-old female was found on IVP to have severe left sided hydronephrosis and mild right hydronephrosis. CT scan revealed an irregular mass involving the floor of the urinary bladder and bladder neck. Following biopsy, a radical cystectomy with ileal conduit was performed. She had had a TAH-BSO for an ovarian mass (diagnosis not available) one year earlier.

GROSS PATHOLOGY:

The previously opened bladder was 8 x 7 cm. In the fundal portion was a 3 x 3 cm indurated area which extended through to the serosal surface. The serosa in that region was fixed to firm fat. The remaining portions of bladder wall were also indurated, up to 1 cm thick. Cut surfaces were firm, gray and gritty.

CONTRIBUTOR: Douglas A. Kahn, M.D.
Sylmar, CA

CASE NO. 8 - MAY 1998

TISSUE FROM: Bladder

ACCESSION #27953

CLINICAL ABSTRACT:

This 63-year-old male patient presented with gross hematuria. Cystoscopy revealed two large bladder tumors. CT showed no lymphadenopathy. Following bladder biopsy, a radical cystectomy and ileal conduit was performed.

GROSS PATHOLOGY:

The 10.0 x 7.0 x 5.0 cm bladder contained a 3.5 x 3.0 cm polypoid tumor. The biopsy specimens of the two tumors visualized on cystoscopy were 2.5 and 5 cm aggregates of soft gray-tan tissue fragments.

CONTRIBUTOR: William Herrick, M.D.
La Mesa, CA

CASE NO. 9 - MAY 1998

TISSUE FROM: Bladder

ACCESSION #26921

CLINICAL ABSTRACT:

This 20-year-old female was 10 weeks post-partum when she presented with 4 days of gross hematuria. Delivery had been vaginal and required the use of forceps. Hemoglobin was 5.6 with a hematocrit of 16. A firm mass was noted in the anterior vaginal wall on the left side. Ultrasound revealed numerous clots in the bladder and a mass on the left side of the posterior bladder wall. Cystoscopy showed a large fungating mass extending from the left posterolateral bladder wall. A partial cystectomy was performed.

GROSS PATHOLOGY:

An ovoid portion of soft, red-brown tissue was 3.8 x 3.9 x 3.0 cm. The cut surface showed an ovoid, yellow-tan mass within the center of the tissue.

CONTRIBUTOR: Phil Gruskin/J.N. Carberry, M.D.'s
Los Angeles, CA

CASE NO. 10 - MAY 1998

TISSUE FROM: Bladder

ACCESSION #23687

CLINICAL ABSTRACT:

This 78-year-old male presented with gross hematuria. Following work-up and a bladder biopsy, a partial cystectomy was performed. The patient had no known exposure to chemicals, nor previous radiation.

GROSS PATHOLOGY:

The partial cystectomy was 4.0 x 3.5 x 2.9 cm with a central 1.0 cm firm tan-white area.

CALIFORNIA
TUMOR TISSUE REGISTRY

MINUTES

FOR

MAY 1998

GENITOURINARY PATHOLOGY

SUGGESTED READING (General Topics from Recent Literature):

The DCDN2A Tumor-Suppressor Locus—A Tale of Two Proteins. *New England Journal of Medicine* 1998; 338 (13):910-912. Clurman BE and Groudine M.

Predicting Clinical Outcome for Uterine Smooth Muscle Neoplasms with a Reasonable Degree of Certainty. Clinicopathologic Study of 28 Uterine Leiomyosarcomas with Metastasis. Jones MW, Norris HJ. *Int J Gynecol Pathol* 1995; 14:243-249.

Small Intestinal Stromal Tumors. A Clinicopathologic Study of 20 Cases with Immunohistochemical Assessment of Cell Differentiation and the Prognostic Role of Proliferation Antigens. MA, CK, De Peralta MN, Amin MB, et al. *Anatomic Pathol* 1997; 108(6):641-651.

Prostate-Specific Antigen. What's New in 1997. Pannek, J and Partin AW. *Oncol* 1997; 11(9):1273-1282.

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INLAND (Riverside/San Bernardino) - Neuroectodermal tumor (1); Adrenal cortical carcinoma, metastatic (1); Undifferentiated carcinoma (Merkel's)? (1).

ORANGE - Neuroendocrine carcinoma (5).

BALDWIN PARK (Kaiser) - Neuroendocrine carcinoma (1); Neuroendocrine carcinoma, ACTH secreting (1).

PALM SPRINGS - Leydig cell tumor.

BAY AREA - Neuroendocrine carcinoma (ACTH secreting) (3).

SANTA ROSA - Malignant neuroendocrine neoplasm, secreting ACTH (1); Neuroendocrine carcinoma (2).

SANTA BARBARA (Cottage Hospital) - Neuroendocrine carcinoma (metastatic).

LONG BEACH - Neuroendocrine carcinoma with ACTH secretion (5).

SAN DIEGO (Naval Medical Center) - Poorly differentiated carcinoma with neuroendocrine features (11)

SACRAMENTO (UC Davis) - Neuroendocrine carcinoma (high grade), ACTH producing.

BAKERSFIELD (Central Valley Study Group) - Metastatic undifferentiated carcinoma (neuroendocrine type).

NEVADA (Reno) - Poorly differentiated neuroendocrine carcinoma (small cell carcinoma)(1); Neuroendocrine carcinoma (1).

WYOMING - Neuroendocrine carcinoma ? Merkel cell.

NEBRASKA (Creighton University) - Metastatic small cell carcinoma.

ILLINOIS (DPA Study Group) - Small cell carcinoma; Merkel cell carcinoma, pheochromocytoma (prob met).

MICHIGAN (Oakwood Hospital) - Small cell carcinoma.

FLORIDA (Tallahassee) - Neuroendocrine carcinoma.

MARYLAND (Bethesda Naval Medical Center) - Small cell neuroendocrine carcinoma with ectopic ACTH production (12).

MARYLAND (Sinai Hospital) - Metastatic ACTH producing small cell carcinoma of probable prostatic origin.

WASHINGTON, DC (Walter Reed) - Poorly differentiated carcinoma with neuroendocrine features.

NEW HAMPSHIRE (Manchester) - Poorly differentiated carcinoma (small cell carcinoma vs Merkel cell carcinoma).

NEW JERSEY (Overlook Hospital) - Metastatic small cell carcinoma (neuroendocrine carcinoma) (3).

NEW YORK (VA Northport) - High grade neuroendocrine tumor –favor pheochromocytoma.

MASSACHUSETTS (Berkshire Medical Ctr) - Neuroendocrine carcinoma.

CONNECTICUT (U Conn Health Ctr) - Poorly differentiated neuroendocrine carcinoma.

DIAGNOSIS:

NEUROENDOCRINE CARCINOMA, PARATESTICULAR REGION
T78000,M80103

REFERENCES:

Morimoto Y, Hiwada K, Nanahoshi, M, Yano S, et al. Cushing's Syndrome Caused by Malignant Tumor in Scrotum. Clinical, Pathologic and Biochemical Studies. *J Clin Endocr* 1971; 32:201.

Walker AN and Mills SE. Surgical Pathology of the Tunica Vaginalis Testis and Embryologically Related Mesothelium. *Pathol Ann* (Part 2) 1988; 125-152

INLAND (Riverside/San Bernardino) - Teratocarcinoma with yolk sac component (1); Mixed yolk sac tumor and immature teratoma (1); Teratoma, immature (1).

ORANGE - Mixed germ cell tumor (teratoma, embryonal carcinoma, endodermal sinus tumor) (5).

BALDWIN PARK (Kaiser) - Mixed germ cell tumor (immature teratoma yolk sac) (1); Immature teratoma with yolk sac tumor (1).

PALM SPRINGS - Teratocarcinoma.

BAY AREA - Mixed germ cell tumor with teratocarcinoma, yolk sac and embryonal components (3).

SANTA ROSA - Mixed germ cell tumor, multiple components (1); Mixed germ cell tumor (1); Mixed germ cell tumor with immature teratoma, seminoma, embryonal carcinoma, and yolk sac components (1).

SANTA BARBARA (Cottage Hospital) - Immature teratoma.

LONG BEACH - Mixed germ cell tumor (teratocarcinoma) (5).

SAN DIEGO (Naval Medical Center) - Mixed germ cell tumor (predominantly yolk sac with mature teratomatous elements (11).

SACRAMENTO (UC Davis) - Immature teratoma with yolk sac tumor vs malignant mixed germ cell tumor.

BAKERSFIELD (Central Valley Study Group) - Teratocarcinoma.

NEVADA (Reno) - Mixed germ cell tumor (predominantly yolk sac tumor, minor component of mature teratoma) (1); Yolk sac with teratoma (1).

WYOMING - Yolk sac tumor with teratoma.

NEBRASKA - Mixed germ cell tumor , predominantly immature teratoma and yolk sac tumor.

ILLINOIS (DPA Study Group) - Mixed germ cell tumor with features of Sertoli-Leydig tumor, possible embryonal component, teratocarcinoma.

MICHIGAN (Oakwood Hospital) - Mixed germ cell tumor, with teratoma, seminoma, embryonal carcinoma and yolk sac components.

FLORIDA (Tallahassee) - Mixed germ cell tumor; seminoma; teratoma; embryonal carcinoma.

MARYLAND (Bethesda) - Mixed germ cell tumor, teratoma and yolk sac (8); MGCT, immature teratoma and yolk sac (3); MGCT, mature teratoma and yolk sac (1).

MARYLAND (Sinai Hospital) - Teratocarcinoma with yolk-sac elements (hepatic carcinoma).

WASHINGTON, DC (Walter Reed) - Malignant mixed germ cell tumor.

NEW HAMPSHIRE (Manchester) - Mixed germ cell tumor and teratoma.

NEW JERSEY (Overlook Hospital) - Malignant mixed germ cell tumor (yolk sac and teratoma) (3).

NEW YORK (VA Northport) - Mixed germ cell tumor (immature teratoma and yolk sac tumor).

MASSACHUSETTS (Berkshire Medical Ctr) - Mixed germ cell tumor with mature and immature teratoma yolk sac tumor and embryonal carcinoma.

CONNECTICUT (U Conn Health Ctr) - Teratocarcinoma.

DIAGNOSIS:

MALIGNANT MIXED GERM CELL TUMOR (PREDOMINANTLY YOLK SAC TUMOR AND TERATOMA), TESTIS
T78000, M90713

REFERENCES:

van Echten J, Oosterhuis JW, Looijenga LHJ, et al. Mixed Testicular Germ Cell tumors. Monoclonal or Polyclonal. *Mod Pathol* 1996; 9:371-374.

Chaganti RSK and Bosc GJ. Germ Cell Tumors. Unraveling a Biological Paradox. *Lab Invest* 1995; 73:593-595.

Gondos B and Migliozzi JA. Intratubular Germ Cell Neoplasia. *Semin Diag Pathol* 1987; 4:292-303.

Damjanov I. Pathogenesis of Testicular Germ Cell Tumours. *Eur-Urol* 1993; 23(1):2-5.

Nato O, Winkle IZ, Farrow GM, et al. Clinical Significance of Nuclear DNA Ploidy Pattern in Nonseminomatous Germ Cell Testicular Tumors. *Urology* 1994; 43(2):197-201.

INLAND (Riverside/San Bernardino) - Seminoma (3).
ORANGE - Seminoma (5).
BALDWIN PARK (Kaiser) - Seminoma (1); Seminoma with possible ITGCN.
PALM SPRINGS - Seminoma.
BAY AREA - Seminoma (anaplastic) (3).
SANTA ROSA - Seminoma (malignant) (1); Seminoma (1); Seminoma, classic type (1).
SANTA BARBARA (Cottage Hospital) - Seminoma.
LONG BEACH - Seminoma.
SAN DIEGO (Naval Medical Center) - Seminoma with intratubular germ cell neoplasia (11).
SACRAMENTO (UC Davis) - Seminoma (? anaplastic).
BAKERSFIELD (Central Valley Study Group) - Seminoma.
NEVADA (Reno) - Seminoma (2).
WYOMING - Seminoma.
NEBRASKA (Creighton University) - Seminoma, classic type.
ILLINOIS (DPA Study Group) - Seminoma (Usual or "classic type).
MICHIGAN (Oakwood Hospital) - Seminoma with intratubular germ cell neoplasia.
FLORIDA (Tallahassee) - Seminoma.
MARYLAND (Bethesda Naval Medical Center) - Classic seminoma with intratubular (IGCN) germ cell neoplasm (12).
MARYLAND (Sinai Hospital) - Seminoma, classic
WASHINGTON, DC (Walter Reed) - Seminoma.
NEW HAMPSHIRE (Manchester) - Seminoma.
NEW JERSEY(Overlook Hospital) - Seminoma (3).
NEW YORK (VA Northport) - Classic seminoma.
MASSACHUSETTS (Berkshire Med Ctr) - Seminoma and intratubular germ cell neoplasia.
CONNECTICUT (U Conn Health Ctr) - Seminoma.

DIAGNOSIS:

SEMINOMA, TESTIS
Note: Some study sets showed intratubular germ cell neoplasia.
T78000, M90613

REFERENCES:

Rukstalis DB. Molecular Mechanisms of Testicular Carcinogenesis. *World J Urol* 1996; 14:347-352.
Friedman NB and Moore RA. Tumors of the Testes. A Report of 922 Cases. *Mil Surgeon* 1946; 99:573-575.
Czaja JT and Ulbright TM. Evidence for Transformation of Seminoma to Yolk Sac Tumor with Histogenic Considerations. *Am J Clin Pathol* 1992; 97:468-477.
Suzuki T, Sasano H, Aoki H, et al. Immunohistochemical Comparison Between Anaplastic Seminoma and Typical Seminoma. *Acta Pathol.* 1993; 43:751-757.

INLAND (Riverside/San Bernardino) - Rhabdomyosarcoma (3).
ORANGE - Malignant spindle cell tumor r/o rhabdomyosarcoma (5).
BALDWIN PARK (Kaiser) - Embryonal rhabdomyosarcoma (2).
PALM SPRINGS - Paratesticular rhabdomyosarcoma.
BAY AREA - Rhabdomyosarcoma (3).
SANTA ROSA - Alveolar rhabdomyosarcoma (1); Rhabdomyosarcoma (2).
SANTA BARBARA (Cottage Hospital) - Yolk sac tumor with rhabdoid features.
LONG BEACH - Rhabdomyosarcoma (5).
SAN DIEGO (Naval Medical Center) - Embryonal rhabdomyosarcoma (11).
SACRAMENTO (UC Davis) - Rhabdomyosarcoma – embryonal type.
BAKERSFIELD (Central Valley Study Group) - Sarcoma (paratesticular).
NEVADA (Reno) - Anaplastic rhabdomyosarcoma (2).
WYOMING - Embryonal rhabdomyosarcoma.
NEBRASKA (Creighton University) - Rhabdomyosarcoma, embryonal type.
ILLINOIS (DPA Study Group) - Rhabdomyosarcoma.
MICHIGAN (Oakwood Hospital) - Embryonal rhabdomyosarcoma.
FLORIDA (Tallahassee) - Rhabdomyosarcoma.
MARYLAND (Bethesda Naval Medical Center) - Embryonal rhabdomyosarcoma, spindle cell variant (12).
MARYLAND (Sinai Hospital) - Rhabdomyosarcoma, embryonal type.
WASHINGTON, DC (Walter Reed) - Rhabdomyosarcoma.
NEW HAMPSHIRE (Manchester) - Pleomorphic rhabdomyosarcoma.
NEW JERSEY (Overlook Hospital) - Rhabdomyosarcoma (3).
NEW YORK (VA Northport) - Embryonal rhabdomyosarcoma.
MASSACHUSETTS (Berkshire Medical Ctr) - Embryonal rhabdomyosarcoma.
CONNECTICUT (U Conn Health Ctr) - Embryonal rhabdomyosarcoma.

DIAGNOSIS:

EMBRYONAL RHABDOMYOSARCOMA, PARATESTICULAR REGION
T78000, M89103

REFERENCES:

Cromie WJ, Raney RA and Duckett JW. Paratesticular Rhabdomyosarcoma in Children. *J Urol* 1979; 122:80-82.
Raney RB Jr., Lefft M, Laurence W, Jr., et al. Paratesticular Sarcoma in Childhood and Adolescence. A Report From the Intergroup Rhabdomyosarcoma Studies I and II 1973-1983. *Cancer* 1987; 60:2337-2343.
Coffin CM. The New International Rhabdomyosarcoma Classification, Its Progenitors and Consideration Beyond Morphology. *Adv Anat Pathol* 1997; 4(1):1-16.

CASE NO. 5, ACCESSION NO. 28228 **MAY 1998**

INLAND (Riverside/San Bernardino) - Spermatocytic seminoma (1); Seminoma (1); Seminoma, multifocal (1).

ORANGE - Seminoma (3); Seminoma with ITGCT (2).

BALDWIN PARK (Kaiser) - Seminoma with intratubular germ cell neoplasm (2).

PALM SPRINGS - Seminoma.

BAY AREA - Seminoma (3).

SANTA ROSA - Seminoma with dysplastic precursor (1); Seminoma and intratubular seminoma (1); Seminoma, classic type and intratubular germ cell neoplasm (1).

SANTA BARBARA (Cottage Hospital) - Seminoma (with IGCNV).

LONG BEACH - Seminoma with intratubular in-situ component (5).

SAN DIEGO (Naval Medical Center) - Seminoma with intratubular germ cell neoplasia (11).

SACRAMENTO (UC Davis) - Mixed germ cell tumor with seminoma component and other component which we favor embryonal carcinoma also forms of intratubular germ cell neoplasia.

BAKERSFIELD (Central Valley Study Group) - Seminoma (spermatocytic).

NEVADA (Reno) - Seminoma (2).

WYOMING - Seminoma.

NEBRASKA (Creighton University) - Seminoma.

ILLINOIS (DPA Study Group) - Seminoma with necrosis, with ITGCN.

MICHIGAN (Oakwood Hospital) - Seminoma with intratubular germ cell neoplasia.

FLORIDA (Tallahassee) - Seminoma with intratubular germ cell neoplasia.

MARYLAND (Bethesda Naval Medical Center) - Classic seminoma with regressive change and IGCN (10); Seminoma and embryonal carcinoma with IGCN (2).

MARYLAND (Sinai Hospital) - Atypical seminoma with intratubular seminoma.

WASHINGTON, DC (Walter Reed) - Seminoma with trophoblastic differentiation.

NEW HAMPSHIRE (Manchester) - Seminoma.

NEW JERSEY (Overlook Hospital) - Seminoma with in-situ germ cell neoplasia (3).

NEW YORK (VA Northport) - Classic seminoma.

MASSACHUSETTS (Berkshire Medical Ctr) - Seminoma.

CONNECTICUT (U Conn Health Ctr) - Seminoma with in-situ component.

DIAGNOSIS:

SEMINOMA WITH IN-SITU GERM CELL NEOPLASIA, TESTIS
T78000, M90613

REFERENCES:

Klein B, Klein T, Konichezky M, Nyska A, et al. Expression of HLA Class I Antigens in Germ Cell Testicular Cancer. *Amer J Clin Pathol* 1990; 93: 202-207.

VanEchten J, Oasterhus JW, Leendert HJ, et al. Cytogenetics, Mixed Testicular Germ Cell Tumors, Nonseminomas Pathogenic Relationship, Seminomas. *Mod Pathol* 1996; 9(4):371-374.

(Also see Case 3 References)

INLAND (Riverside/San Bernardino) - Clear cell adenocarcinoma (1); High grade transitional cell carcinoma of bladder (1); Transitional cell carcinoma with squamous differentiation (1).

ORANGE - Mixed high grade transitional carcinoma and squamous carcinoma (3); Transitional cell carcinoma II/III (1).

BALDWIN PARK (Kaiser) - Transitional cell carcinoma with clear cell and squamous carcinoma features (1); High grade transitional cell carcinoma with clear cell change and squamous differentiation (1).

PALM SPRINGS - High grade muscle invasive TCC.

BAY AREA - Transitional cell carcinoma, grade 3, invasive (3).

SANTA ROSA - Malignant clear cell type vs artifact, probably transitional cell carcinoma (1); Transitional cell carcinoma with artifact and clear cell feature (1); Carcinoma with squamous and clear cell features (1).

SANTA BARBARA (Cottage Hospital) - High grade transitional cell carcinoma with squamous differentiation.

LONG BEACH - High grade Transitional cell carcinoma (5).

SAN DIEGO (Naval Medical Center) - Squamous cell carcinoma (7); Transitional cell carcinoma with squamous and clear cell differentiation (4).

SACRAMENTO (UC Davis) - Transitional cell carcinoma—high grade (? clear cell type?).

BAKERSFIELD (Central Valley Study Group) - Transitional cell carcinoma (clear cell carcinoma).

NEVADA (Reno) - Transitional cell carcinoma with focal squamous differentiation (1); High grade transitional cell carcinoma (1).

WYOMING - Squamous cell carcinoma of bladder.

NEBRASKA (Creighton University) - Transitional cell carcinoma with clear cell features, high grade III/III.

ILLINOIS (DPA Study Group) - Invasive poorly differentiated transitional cell carcinoma, clear cell carcinoma, clear cell adenocarcinoma.

MICHIGAN (Oakwood Hospital) - Poorly differentiated myoinvasive carcinoma consistent with bladder primary, (WHO grade III).

FLORIDA (Tallahassee) - Squamous cell carcinoma, Grade III/III.

MARYLAND (Bethesda Naval Medical Center) - High grade transitional cell carcinoma with squamous cell differentiation and clear cell features (12).

MARYLAND (Sinai Hospital) - Infiltrating urothelial carcinoma

WASHINGTON, DC (Walter Reed) - Clear cell carcinoma.

NEW HAMPSHIRE (Manchester) - High grade invasive transitional cell carcinoma with squamous features.

NEW JERSEY (Overlook Hospital) - Invasive transitional cell carcinoma into muscle (3).

NEW YORK (VA Northport) - Transitional cell carcinoma, high grade.

MASSACHUSETTS (Berkshire Medical Ctr) - High grade transitional cell carcinoma.

CONNECTICUT (U Conn Health Ctr) - Clear cell carcinoma.

DIAGNOSIS:

HIGH GRADE TRANSITIONAL CELL CARCINOMA WITH CLEAR CELL FEATURES AND SQUAMOUS DIFFERENTIATION, BLADDER
T74000, M81203

REFERENCES:

Koss LG. Mapping of the Urinary Bladder. It's Impact of the Concepts of Bladder Cancer. *Hum Pathol* 1979; 10:533-548.

McGarvey T and Maalkowicz. The Role of the Cell Cycle in Genitourinary Carcinoma. *Urol* 1996; 14:310-317.

Martin JE, Jenkins BJ, Zuk RJ, et al. Clinical Importance of Squamous Metaplasia in Invasive Transitional Cell Carcinoma of the Bladder. *J Clin Pathol* 1989; 42:250-253.

Young RH and Eble JN. Unusual Forms of Carcinoma of the Urinary Bladder. *Hum Pathol* 1991; 22:945-965.

Urick MR, Zarbo RJ and Hitchcock CL. Special Techniques for the Pathologic Analysis of Lesions of the Urinary Bladder. Yourn RH (ed). *Pathology of the Urinary Bladder*. New York, NY, Churchhill Livingstone 1989; 285.

INLAND (Riverside/San Bernardino) - Sarcomatoid carcinoma (1); Poorly differentiated squamous cell carcinoma (1); Leiomyosarcoma (1).

ORANGE - Malignant spindle cell tumor (2); Sarcomatoid carcinoma (1); Leiomyosarcoma (2).

BALDWIN PARK (Kaiser) - Carcinosarcoma r/o metastatic MMMT from ovary (2).

PALM SPRINGS - Leiomyosarcoma.

BAY AREA - Transitional cell carcinoma, high grade, invasive (3).

SANTA ROSA - Invasive poorly differentiated carcinoma, probably transitional cell carcinoma (1); Poorly differentiated transitional cell carcinoma r/o sarcoma (1); Sarcomatoid carcinoma vs sarcoma NOS (1).

SANTA BARBARA (Cottage Hospital) - Sarcomatoid carcinoma.

LONG BEACH - High grade transitional cell carcinoma (5).

SAN DIEGO (Naval Medical Center) - Sarcomatoid (spindle cell) carcinoma (11).

SACRAMENTO (UC Davis) - Carcinosarcoma.

BAKERSFIELD (Central Valley Study Group) - Sarcoma (MFH, leiomyosarcoma).

NEVADA (Reno) - Malignant spindle cell neoplasm (1); Sarcoma (1).

WYOMING - Spindle cell carcinoma, bladder.

NEBRASKA (Creighton University) - Sarcomatoid (spindle cell) carcinoma.

ILLINOIS (DPA Study Group) - Leiomyosarcoma, possible MFH. Need to r/o inflammatory pseudotumor.

MICHIGAN (Oakwood Hospital) - Sarcomatoid carcinoma.

FLORIDA (Tallahassee) - Sarcomatoid carcinoma.

MARYLAND (Bethesda Naval Medical Center) - Leiomyosarcoma (6); Inflammatory pseudotumor (4); Sarcomatoid carcinoma (1); Inflammatory malignant fibrous histiocytoma (1).

MARYLAND (Sinai Hospital) - Sarcomatoid carcinoma.

WASHINGTON, DC (Walter Reed) - Malignant spindle cell neoplasm, favor sarcomatoid carcinoma.

NEW HAMPSHIRE (Manchester) - Inflammatory fibromyxoid pseudotumor.

NEW JERSEY (Overlook Hospital) - Pseudosarcomatous carcinoma (3).

NEW YORK (VA Northport) - Sarcomatoid high grade transitional cell carcinoma.

MASSACHUSETTS (Berkshire Medical Ctr) - Leiomyosarcoma, high grade.

CONNECTICUT (U Conn Health Ctr) - Spindle cell carcinoma.

DIAGNOSIS:

SARCOMATOID (SPINDLE CELL) CARCINOMA, BLADDER
T74000, M80323

REFERENCES:

Gibbons RP, Mandler JI and Hartman WH. The Significance of Epithelial Atypia Seen in a Non-Invasive Transitional Cell Papillary Tumors of the Bladder. *J Urol* 1969; 102:195-199.

Gilbert HA, Logan JL, Kagan AR, et al. The Natural History of Papillary Transitional Cell Carcinoma of the Bladder and Its Treatment in an Unselected Population on the Basis of Histologic Grading. *J Urol* 1978; 119:488-492.

Barnes R, Hadley H, Dick A, et al. Changes in Grade and Stage of Recurrent Bladder Tumors. *J Urol* 1977; 118:177-179.

Brown PN. The Origin of Invasive Carcinoma of the Bladder. *Cancer* 1982; 50:515-519.

CASE NO. 8, ACCESSION NO. 27953 **MAY 1998**

INLAND (Riverside/San Bernardino) - Transitional cell carcinoma (1); High grade transitional cell carcinoma (1); Papillary transitional cell carcinoma, intermediate grade (1).

ORANGE - Papillary transitional carcinoma III/III (5).

BALDWIN PARK (Kaiser) - Papillary invasive grade III/III transitional cell carcinoma (2).

PALM SPRINGS - Urothelial carcinoma.

BAY AREA - Papillary transitional cell carcinoma, grade 2-3, early invasion (3).

SANTA ROSA - Papillary transitional cell carcinoma, 2/3 with muscular invasion (1); Papillary transitional cell carcinoma II-III/III (1); Papillary transitional cell carcinoma with muscle invasion (1).

SANTA BARBARA (Cottage Hospital) - Transitional cell carcinoma, high grade, papillary and invasive.

LONG BEACH - High grade papillary transitional cell carcinoma (5).

SAN DIEGO (Naval Medical Center) - High grade transitional cell carcinoma (7); High grade transitional cell carcinoma with squamous differentiation (4).

SACRAMENTO (UC Davis) - Transitional cell carcinoma – papillary grade II/III with muscle invasion.

BAKERSFIELD (Central Valley Study Group) - Transitional cell carcinoma.

NEVADA (Reno) - High grade papillary transitional cell carcinoma with invasion of muscularis propria (1); Transitional cell carcinoma, high grade with invasion (1).

WYOMING - Invasive high grade transitional cell carcinoma.

NEBRASKA (Creighton University) - Invasive papillary transitional cell carcinoma, high grade III/III.

ILLINOIS (DPA Study Group) - Non-invasive papillary transitional cell carcinoma.

MICHIGAN (Oakwood Hospital) - Papillary transitional cell carcinoma, WHO grade III, no invasion in this slide.

FLORIDA (Tallahassee) - Transitional carcinoma, grade III/III.

MARYLAND (Bethesda Naval Medical Center) - High grade papillary transitional cell carcinoma (12).

MARYLAND (Sinai Hospital) - Papillary urothelial carcinoma, grade II with focal invasion of stroma of the papillary fronds.

WASHINGTON, DC (Walter-Reed) - High grade transitional cell carcinoma.

NEW HAMPSHIRE (Manchester) - High grade transitional cell carcinoma (non-invasive).

NEW JERSEY (Overlook Hospital) - Papillary transitional cell carcinoma, grade IV, stage A (3).

NEW YORK (VA Northport) - Papillary and invasive high grade transitional cell carcinoma.

MASSACHUSETTS (Berkshire Medical Ctr) - High grade transitional cell carcinoma.

CONNECTICUT (U Conn Health Ctr) - Papillary transitional cell carcinoma, high grade.

DIAGNOSIS:

PAPILLARY TRANSITIONAL CELL CARCINOMA, GRADE III/III, BLADDER
Note: Not all study sets showed invasion (drc).
T74000, M81303

REFERENCES:

Armin MB and Young RH. Intraepithelial Lesions of the Urinary Bladder with Discussions of Histogenesis of Urothelial Neoplasia. *Semin Diag Pathol* 1997; 104:84-97.

Bostwick DG. Natural History of Early Bladder Cancer. *J Cell Biochem* 1992; 16: 31-38.

Taylor DC, Bhagavan BS, Larsen MP, et al. Papillary Urethelial Hyperplasia. A Precursor to Papillary Neoplasms. *Am J Surg Pathol* 1996; 20:1481.

Young RH and Oliva E. Invasive Transitional Carcinoma of the Urinary Bladder That May Be Underdiagnosed. A Report of Four Cases Exemplifying the Homology Between Neoplastic and Nonneoplastic Transitional Cell Lesions. *Am J Surg Pathol* 1996; 20:1448-1454.

CASE NO. 9, ACCESSION NO. 26921 **MAY 1998**

INLAND (Riverside/San Bernardino) - Pseudotumor (1); Leiomyoma (1); Leiomyoma, infarcted (1).

ORANGE - Inflammatory pseudotumor (5).

BALDWIN PARK (Kaiser) - Post-op spindle cell nodule? (1); Foreign material hemorrhage, with "post-op" spindle cell nodule; probably secondary to vagina (rupture during delivery) (1).

PALM SPRINGS - Something calcified related to traumatic labor and delivery.

BAY AREA - Infarcted leiomyoma (1); Inflammatory pseudotumor vs postoperative spindle cell nodule (atypical transitional epithelium seen) (2).

SANTA ROSA - Cystitis glandularis with inflammatory "pseudo" tumor and dystrophic calcification (1); Pseudotumor, r/o malicoplasia (1); Cystitis cystica and inflammatory pseudotumor (1).

SANTA BARBARA (Cottage Hospital) - Inflammatory pseudotumor.

LONG BEACH - Pseudosarcomatous fibromyxoid tumor (5).

SAN DIEGO (Naval Medical Center) - Inflammatory pseudotumor (or post-operative spindle cell nodule) (11).

SACRAMENTO (UC Davis) - Pseudotumor.

BAKERSFIELD (Central Valley Study Group) - Myoma (spindle cell nodule).

NEVADA (Reno) - Inflammatory pseudosarcoma (2).

WYOMING - Inflammatory pseudotumor/post operative spindle cell nodule.

NEBRASKA (Creighton University) - Inflammatory myofibroblastic tumor (inflammatory pseudotumor).

ILLINOIS (DPA Study Group) - ? inflammatory pseudotumor; ? hemangioma with necrosis and calcification; ? post-op spindle cell nodule of GU tract?

MICHIGAN (Oakwood Hospital) - Inflammatory pseudotumor.

FLORIDA (Tallahassee) - Pseudotumor.

MARYLAND (Bethesda Naval Medical Center) - Inflammatory pseudotumor (6); Hemangioma (3); Inflammatory pseudotumor (post-op spindle cell nodule) (2); Post-op spindle cell nodule (1).

MARYLAND (Sinai Hospital) - Myxoid leiomyosarcoma.

WASHINGTON, DC (Walter Reed) - Post operative spindle cell nodule.

NEW HAMPSHIRE (Manchester) - Leiomyoma.

NEW JERSEY (Overlook Hospital) - Inflammatory pseudotumor (3).

NEW YORK (VA Northport) - Inflammatory pseudotumor.

MASSACHUSETTS (Berkshire Medical Ctr) - Post-op pseudotumor.

CONNECTICUT (U Conn Health Ctr) - Inflammatory pseudotumor.

DIAGNOSIS:

INFLAMMATORY PSEUDOTUMOR ("INFLAMMATORY MYOFIBROBLASTIC TUMOR"), BLADDER
T74000, M03090

REFERENCES:

Nochomobitz LE and Orenstein JH. Inflammatory Pseudotumor of the Urinary Bladder – Possible relationship to Nodular Fasciitis—Two Case Reports Cytologic Observations and Ultrastructural Observations. *Am J Surg Pathol* 1985; 9:366-373.

Proppe KH, Scully RE and Rosai J. Postoperative Spindle Cell Nodules of Genitourinary Tract Resembling Sarcomas. A Report of 8 Cases. *Am J Surg Pathol* 1984; 8:1101-1108.

Young RH, Scully RE. Pseudosarcomatous Lesions of the Urinary Bladder, Prostate and Urethra. *Arch Pathol Lab Med* 1987; 354-358.

Young RH and Wick MR. Transitional Carcinoma of the Bladder with Pseuosarcomatous Stroma. *Am J Clin Pathol* 1988; 90:216-219.

INLAND (Riverside/San Bernardino) - Sarcomatoid carcinoma (1); Carcinosarcoma (2).

ORANGE - Carcinosarcoma with chondroid differentiation (3); Sarcoma with chondroid component (2).

BALDWIN PARK (Kaiser) - Carcinosarcoma of urinary bladder (2).

PALM SPRINGS - Papillary transitional cell carcinoma, grade III, with osteocartilaginous metaplasia and granulomatous cystitis.

BAY AREA - Carcinosarcoma (malignant mixed mesodermal tumor) (3).

SANTA ROSA - Malignant r/o extraosseous chondrosarcoma (2); Extraskeletal osteosarcoma with chondrosarcoma area (1).

SANTA BARBARA (Cottage Hospital) - Malignant neoplasm, favor metastatic melanoma, r/o carcinoma.

LONG BEACH - Carcinosarcoma (5).

SAN DIEGO (Naval Medical Center) - Carcinosarcoma (11).

SACRAMENTO (UC Davis) - Carcinosarcoma with heterologous elements.

BAKERSFIELD (Central Valley Study Group) - Sarcoma (carcinosarcoma).

NEVADA (Reno) - Carcinosarcoma (2).

WYOMING - Poorly differentiated carcinoma.

NEBRASKA (Creighton University) - Carcinosarcoma.

ILLINOIS (DPA Study Group) - Carcinosarcoma; metaplastic carcinoma—chondrosarcoma, sarcomatoid carcinoma.

MICHIGAN (Oakwood Hospital) - Carcinosarcoma.

FLORIDA (Tallahassee) - Transitional carcinoma with metaplastic component.

MARYLAND (Bethesda Naval Medical Center) - Carcinosarcoma with cartilaginous differentiation (6); Sarcomatoid carcinoma (6). (We believe these are the same entity-majority).

MARYLAND (Sinai Hospital) - Malignant mixed tumor.

WASHINGTON, DC (Walter Reed) - Carcinosarcoma.

NEW HAMPSHIRE (Manchester) - Carcinosarcoma.

NEW JERSEY (Overlook Hospital) - Carcinosarcoma (3).

NEW YORK (VA Northport) - Malignant tumor (favor malignant melanoma over extra-renal rhabdoid tumor).

MASSACHUSETTS (Berkshire Medical Ctr) - Carcinosarcoma.

CONNECTICUT (U Conn Health Ctr) - Carcinosarcoma.

DIAGNOSIS:

CARCINOSARCOMA ("MALIGNANT MIXED MESODERMAL TUMOR"), BLADDER
T74000, M89803

REFERENCES:

Bitterman P, Chun B and Kurman RJ. Significance of Epithelial Differentiation in Mixed Mesodermal of the Uterus. A Clinicopathologic and Immunohistochemical Study. *Am J Surg Pathol* 1990; 14:317-325.

Grignon DJ, Jae Y Ro, et al. Primary Adenocarcinoma of the Urinary Bladder. A Clinicopathologic Analysis of 72 Cases. *Cancer* 1991; 67:2165-2172.

Kanno J, Sakamoto A, Washizuka M, et al. Malignant Mixed Mesodermal Tumor of Bladder Occurring After Radiotherapy of Cervical Cancer. Report of a Case. *J Urol* 1985; 133:854-856.

Young RH. Carcinosarcoma of the Urinary Bladder. *Cancer* 1987; 59:1333-1339.