



CALIFORNIA
TUMOR TISSUE REGISTRY

GENERAL PATHOLOGY

Minutes – Subscription B

February 2002



SUGGESTED READING (General Topics from Recent Literature):

- Fusion of the NH₂-Terminal Domain of the Basic Helix-Loop-Helix Protein TCF12 to TEC in Extraskelatal Myxoid Chondrosarcoma with Translocation t(9;15)(q22;q21). Sjogren H, Wedell B, Kindblom JM. *Cancer Res.* 2000 Dec 15;60(24):6832-6835.
- Cytogenetic Aberrations and Their Prognostic Impact in Chondrosarcoma. Mandahl N, Gustafson P, Mertens F. *Genes Chromosomes Cancer.* 2002 Feb; 33(2):188-200.
- Aspiration Cytology of 147 Adnexal Cysts with Histologic Correlation. Martinez-Onsurbe P, Ruiz Villaespasa A, Sanz Anquela JM, et al. *Acta Cytol.* 2001 Nov-Dec; 45(6):941-947.
- The Knights of the Round Table Hypothesis of Tumour Suppressor Gene Function - Noble Sacrifice or Sexual Dalliance: Genes, Including P53, BRCA1/2 and RB have Evolved by Horizontal and Vertical Transmission of Mating Factor Genes and are Involved in Gametogenesis, Implantation, Development and Tumourigenesis. Gosden CM, Liloglou T, Nunn J, et al. *Int J Oncol.* 1998 Jan; 12(1):5-35.

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FILE DIAGNOSES

CTTR Subscription B

February 2002

Case 1:

Clear cell hidradenoma (nodular hidradenoma), abdominal skin
T-02480, M-84020

Case 2:

Dermatofibrosarcoma protuberans, skin of back
T-02450, M-8832/1

Case 3:

Extraskelatal myxoid chondrosarcoma, thigh
T-Y9100, M-92203

Case 4:

Granulosa cell tumor, retroperitoneum
T-Y4600, M-8620/1

Case 5:

Mixed germ cell tumor (embryonal carcinoma, yolk sac tumor, seminoma), testis
T-78000, M-9070

Case 6:

Pheochromocytoma, adrenal
T-9300, M-87000

Case 7:

Conventional low grade chondrosarcoma, femur
T-11710, M-9220

Case 8:

Epithelioid leiomyosarcoma, uterus
T-82000, M-8891/3

Case 9:

Cellular schwannoma, brachial plexus
T-X9090, M-9560/0

Case 10:

Papillary renal cell carcinoma, kidney
T-71000, M-8312/3

Escondido - Clear cell hidradenoma
Glendale (Glendale Pathology Associates) - Hidradenoma
Loma Linda - Clear cell hidradenoma
Los Angeles (USC Residents) - Nodular hidradenoma
Modesto (Yosemite Pathology Medical Group) - Solid-cystic hidradenoma
Orange (UCI Medical Center Residents) - Nodular hidradenoma (eccrine acrospiroma)
Sacramento (UC Davis Medical Center) - Solid and cystic hidradenoma
Arkansas (UAMS) - Urachal sinus/cyst
Florida (Monroe Medical Center) - Adenomatoid tumor
Florida (Winter Haven Hospital) - Proliferating trichilemma cyst
Georgia, Decatur - Nodular (clear cell) hidradenoma
Illinois (Marion Memorial Hospital) - Eccrine acrospiroma (nodular hidradenoma)
Illinois (Sarah Bush Lincoln Health Center) - Poroma (acrospiroma)
Illinois, Skokie - Eccrine hidradenoma
Kansas (Coffeyville Regional Medical Center) - Hidradenoma papilliferum
Kentucky (University of Louisville Residents) - Clear cell hidradenoma
Massachusetts (Berkshire Medical Center) - Solid-cyst hidradenoma
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Eccrine hidradenoma (acrospiroma)
Maryland (National Naval Medical Center) - Eccrine acrospiroma (10); Urachal tumor (1)
Michigan (Spectrum Health) - Papillary hidradenoma
Michigan (St. Joseph Mercy Hospital) - Eccrine acrospiroma
Michigan (St. Mary's Mercy Hospital) - Nodular hidradenoma (2)
Missouri, Joplin - Squamous carcinoma
New York (Nassau University Medical Center, Resident study group) - Nodular hidradenoma, abdominal skin
Nebraska (Good Samaritan Hospital) - Nodular hidradenoma
Ohio, Columbus - Eccrine acrospiradenoma
Pennsylvania (Allegheny General Hospital) - Hidradenoma papilliferum
Pennsylvania (Memorial Medical Center Residents) - Eccrine acrospiroma - cystic variant
Pennsylvania, Sewickley - Low grade urothelial neoplasm (urachal remnant)
Texas, Lubbock - Nodular hidradenoma
Texas, San Antonio - Eccrine hidradenoma (1); Hidradenoma (1)
Texas (Scott & White Memorial Hospital) - Eccrine acrospiroma (benign dermal adnexal tumor)
Utah (St. Mark's Hospital) - Benign adnexal tumor-? acrospiroma/hidradenoma
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Nodular hidradenoma
Washington, DC - Papilloma, apocrine
Washington, Vancouver - Syringocystadenoma papilliferum
Canada (CUSE, Site Fleurimont) - Glomangiomyoma
Canada (University of Calgary, Foothills Hospital) - Clear cell hidradenoma (nodular hidradenoma)
China (Sir Run Run Shaw Hospital) - Clear cell hidradenoma
Japan (Hamamatsu University School of Medicine) - Trichilemmoma
Japan (Self Defense Hospital) - Nodular hidradenoma
Japan (Shiga University of Medical Science) - Clear cell hidradenoma
Netherlands, Amstelveen - Metastatic transitional cell carcinoma or malignant Brenner tumor (ovary)
Puerto Rico (University of Puerto Rico) - Hidradenoma
Spain (Policlinico Vigosa) - Nodular hidradenoma

Case 1 - Diagnosis:

Clear cell hidradenoma (nodular hidradenoma), abdominal skin

T-02480, M-84020

Case 1 - References:

Johnson BL Jr, Elwig EB. Eccrine Acrospiroma. A Clinicopathologic Study. *Cancer*. 1969 Mar; 23(3):641-657.
 Hashimoto K, DiBella RJ, Borsuk GM, Lever WF. Clear Cell Hidradenoma. Histological, Histochemical, and Electron Microscopic Studies. *Arch Dermatol*. 1967 Jul; 96(1):18-38.
 Keasby LE, Hadley GG. Clear Cell Hidradenoma. Report of Three Cases with Widespread Metastases. *Cancer*. 1954 (7):934-952.
 Murphy GF, Elder DE. Nodular Hidradenoma, In Atlas of Tumor Pathology, Non-melanotic Tumors of the Skin. *Third Series Fascicle 1*; 83-89

Escondido - Dermatofibrosarcoma protuberans
Glendale (Glendale Pathology Associates) - DFSP (dermatofibrosarcoma protuberans)
Loma Linda - Fibrous histiocytoma
Los Angeles (USC Residents) - Dermatofibrosarcoma protuberans
Modesto (Yosemite Pathology Medical Group) - DFSP (dermatofibrosarcoma protuberans)
Orange (UCI Medical Center Residents) - Dermatofibrosarcoma protuberans
Sacramento (UC Davis Medical Center) - Dermatofibrosarcoma protuberans
Arkansas (UAMS) - Dermatofibrosarcoma protuberans
Florida (Monroe Medical Center) - Dermatofibrosarcoma protuberans
Florida (Winter Haven Hospital) - Dermatofibrosarcoma protuberans
Georgia, Decatur - Dermatofibrosarcoma protuberans
Illinois (Marion Memorial Hospital) - Dermatofibrosarcoma protuberans
Illinois (Sarah Bush Lincoln Health Center) - Malignant spindle cell tumor – favor dermatofibrosarcoma protuberans (DFSP)
Illinois, Skokie - Dermatofibrosarcoma protuberans
Kansas (Coffeyville Regional Medical Center) - Dermatofibrosarcoma protuberans
Kentucky (University of Louisville Residents) - Dermatofibrosarcoma protuberans
Massachusetts (Berkshire Medical Center) - Dermatofibrosarcoma protuberans
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Dermatofibrosarcoma protuberans
Maryland (National Naval Medical Center) - DFSP (dermatofibrosarcoma protuberans) (11)
Michigan (Spectrum Health) - Solitary fibrous tumor
Michigan (St. Joseph Mercy Hospital) - Dermatofibrosarcoma protuberans
Michigan (St. Mary's Mercy Hospital) - DFSP (Dermatofibrosarcoma protuberans) (1); Dermatofibrosarcoma (1)
Missouri, Joplin - Fibrosarcoma
New York (Nassau University Medical Center, Resident study group) - Dermatofibrosarcoma protuberans, back
Nebraska (Good Samaritan Hospital) - Dermatofibrosarcoma protuberans
Ohio, Columbus - Dermatofibrosarcoma
Pennsylvania (Allegheny General Hospital) - Dermatofibrosarcoma protuberans
Pennsylvania (Memorial Medical Center Residents) - Dermatofibrosarcoma protuberans
Pennsylvania, Sewickley - Spindle cell lipoma
Texas, Lubbock - Dermatofibrosarcoma protuberans
Texas, San Antonio - DFSP (dermatofibrosarcoma protuberans) (2)
Texas (Scott & White Memorial Hospital) - Dermatofibrosarcoma protuberans
Utah (St. Mark's Hospital) - DSFP (dermatofibrosarcoma protuberans)
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Solitary fibrous tumor
Washington, DC - Dermatofibrosarcoma protuberans
Washington, Vancouver - Dermatofibrosarcoma protuberans
Canada (CUSE, Site Fleurimont) - Dermatofibrosarcoma
Canada (University of Calgary, Foothills Hospital) - Spindle cell lipoma
China (Sir Run Run Shaw Hospital) - Fibrous histiocytoma/Dermatofibrosarcoma protuberans
Japan (Hamamatsu University School of Medicine) - Dermatofibrosarcoma protuberans
Japan (Self Defense Hospital) - Dermatofibrosarcoma protuberans
Japan (Shiga University of Medical Science) - Dermatofibrosarcoma protuberans
Netherlands, Amstelveen - Dermatosarcoma protuberans
Puerto Rico (University of Puerto Rico) - Dermatofibrosarcoma protuberans/Solitary fibrous tumor
Spain (Policlinico Vigosa) - Dermatofibrosarcoma protuberans

Case 2 - Diagnosis:**Dermatofibrosarcoma protuberans, skin of back**

T-02450, M-8832/1

Consultation: Thomas Sebo, M.D., Ph.D., Mayo Clinic, Minnesota, "Dermatofibrosarcoma protuberans"

Case 2 - References:

- Goldblum JR, Reith JD, Weiss SW. Sarcomas Arising in Dermatofibrosarcoma Protuberans: A Reappraisal of Biologic Behavior in Eighteen Cases Treated by Wide Local Excision with Extended Clinical Follow up. *Am J Surg Pathol.* 2000 Aug; 24(8):1125-1130.
- Davis DA, Sanchez RL. Atrophic and Plaquelike Dermatofibrosarcoma Protuberans. *Am J Dermatopathol.* 1998 Oct; 20(5):498-501.
- Aiba S, Tabata N, Ishii H, Ootani H, Tagami H. Dermatofibrosarcoma Protuberans is a Unique Fibrohistiocytic Tumour Expressing CD34. *Br J Dermatol.* 1992 Aug; 127(2):79-84.

McPeak CJ, Cruz T, Nicastrì AD. Dermatofibrosarcoma Protuberans: An Analysis of 86 Cases--Five with Metastasis. *Ann Surg.* 1967 Nov; 166(5):803-816.

Case No. 3, Accession No. 29242

February 2002

Escondido - Myxoid chondrosarcoma
Glendale (Glendale Pathology Associates) - Epithelioid leiomyosarcoma
Loma Linda - Chondrosarcoma (soft parts)
Los Angeles (USC Residents) - Extraskelatal myxoid chondrosarcoma
Modesto (Yosemite Pathology Medical Group) - Extraskelatal myxoid chondrosarcoma
Orange (UCI Medical Center Residents) - Extraskelatal myxoid chondrosarcoma
Sacramento (UC Davis Medical Center) - Low grade chondrosarcoma
Arkansas (UAMS) - Extraskelatal myxoid chondrosarcoma
Florida (Monroe Medical Center) - Extraskelatal myxoid chondrosarcoma
Florida (Winter Haven Hospital) - Myxoid chondrosarcoma
Georgia, Decatur - Myxoid/round cell liposarcoma
Illinois (Marion Memorial Hospital) - Myxoid leiomyosarcoma
Illinois (Sarah Bush Lincoln Health Center) - Myxoid chondrosarcoma, extra skeletal
Illinois, Skokie - Myxoid chondrosarcoma
Kansas (Coffeyville Regional Medical Center) - Extraskelatal myxoid chondrosarcoma
Kentucky (University of Louisville Residents) - Extraskelatal myxoid chondrosarcoma
Massachusetts (Berkshire Medical Center) - Extra-skelatal chondrosarcoma
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Extraskelatal myxoid chondrosarcoma
Maryland (National Naval Medical Center) - Extraskelatal myxoid chondrosarcoma (11)
Michigan (Spectrum Health) - Extraskelatal myxoid chondrosarcoma
Michigan (St. Joseph Mercy Hospital) - Extraskelatal myxoid chondrosarcoma
Michigan (St. Mary's Mercy Hospital) - Myxoid chondrosarcoma (2)
Missouri, Joplin - Chondrosarcoma
New York (Nassau University Medical Center, Resident study group) - Extraosseous myxoid chondrosarcoma, thigh
Nebraska (Good Samaritan Hospital) - Extraskelatal chondrosarcoma
Ohio, Columbus - Myxoid chondrosarcoma
Pennsylvania (Allegheny General Hospital) - Extraskelatal mesenchymal chondrosarcoma
Pennsylvania (Memorial Medical Center Residents) - Chondromyxoid liposarcoma
Pennsylvania, Sewickley - Extraskelatal myxoid chondrosarcoma
Texas, Lubbock - Myxoid liposarcoma
Texas, San Antonio - Myxoid chondrosarcoma (1); Chondrosarcoma (1)
Texas (Scott & White Memorial Hospital) - Myxoid sarcoma
Utah (St. Mark's Hospital) - Myxoid chondrosarcoma
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Extraskelatal chondrosarcoma
Washington, DC - Myxoid chondrosarcoma
Washington, Vancouver - Soft tissue chondrosarcoma
Canada (CUSE, Site Fleurimont) - Myxoid liposarcoma
Canada (University of Calgary, Foothills Hospital) - Extraskelatal myxoid chondrosarcoma
China (Sir Run Run Shaw Hospital) - Extraosteal myxoid chondrosarcoma
Japan (Hamamatsu University School of Medicine) - Myxoid chondrosarcoma
Japan (Self Defense Hospital) - Extraskelatal myxoid chondrosarcoma
Japan (Shiga University of Medical Science) - Extraskelatal myxoid chondrosarcoma
Netherlands, Amstelveen - Extraskelatal myxoid chondrosarcoma
Puerto Rico (University of Puerto Rico) - Myxoid chondrosarcoma
Spain (Policlinico Vigosa) - Myxoid chondrosarcoma

CASE 3 – Diagnosis:

Extraskelatal myxoid chondrosarcoma, thigh

T-Y9100, M-92203

Case 3 - References:

Harris M, Coyne J Tariq M, et al. Extraskelatal Myxoid Chondrosarcoma with Neuroendocrine Differentiation: A Pathologic, Cytogenetic, and Molecular Study of a Case with a Novel Translocation T(9; 17) (Q22; Q11.2). *Am J Surg Pathol.* 2000 Jul; 24(7):1020-1026

Oliveira AM, Nascimento AG. Phenotypic Plasticity and Prognostic Factors in Extraskeletal Myxoid Chondrosarcoma. *Adv Anat Pathol.* 2000 Mar; 7(2):73-78

Sjogren H, Meis-Kindblom J, Kindblom LG, et al. Fusion of the EWS-Related Gene TAF2N to TEC in Extraskeletal Myxoid Chondrosarcoma. *Cancer Res.* 1999 Oct; 59(20):5064-5067

Lucas DR, Fletcher CD, Adsay NV, et al. High-grade Extraskeletal Myxoid Chondrosarcoma: A High-grade Epithelioid Malignancy. *Histopathology.* 1999 Sep; 35(3):201-208.

Rubin BP, Fletcher JA. Skeletal and Extraskeletal Myxoid Chondrosarcoma; Related or Distinct Tumors? *Adv Anat Pathol.* 1999 Jul; 6(4):204-212

Case No. 4, Accession No. 29200

February 2002

Escondido - Granulosa cell tumor
Glendale (Glendale Pathology Associates) - Granulosa cell tumor, adult type
Loma Linda - Granulosa cell carcinoma, ovary
Los Angeles (USC Residents) - Granulosa cell tumor
Modesto (Yosemite Pathology Medical Group) - Granulosa cell tumor
Orange (UCI Medical Center Residents) - Granulosa cell tumor
Sacramento (UC Davis Medical Center) - Granulosa cell tumor
Arkansas (UAMS) - Granulosa cell tumor, metastatic
Florida (Monroe Medical Center) - Granulosa cell tumor
Florida (Winter Haven Hospital) - Granulosa cell tumor
Georgia, Decatur - Adult granulosa cell tumor
Illinois (Marion Memorial Hospital) - Granulosa cell tumor
Illinois (Sarah Bush Lincoln Health Center) - Granulosa cell tumor
Illinois, Skokie - Metastatic adult granulosa cell tumor
Kansas (Coffeyville Regional Medical Center) - Adult granulosa cell tumor (malignant)
Kentucky (University of Louisville Residents) - Granulosa cell tumor
Massachusetts (Berkshire Medical Center) - Malignant granulosa cell tumor
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Adult-type granulosa cell tumor, metastatic
Maryland (National Naval Medical Center) - Granulosa cell tumor (11)
Michigan (Spectrum Health) - Granulosa cell tumor
Michigan (St. Joseph Mercy Hospital) - Granulosa cell tumor
Michigan (St. Mary's Mercy Hospital) - Granulosa cell tumor (2)
Missouri, Joplin - Malignant granulosa cell tumor
New York (Nassau University Medical Center, Resident study group) - Metastatic granulosa cell tumor, retroperitoneum
Nebraska (Good Samaritan Hospital) - Granulosa cell tumor, adult-type
Ohio, Columbus - Granulosa tumor
Pennsylvania (Allegheny General Hospital) - Granulosa cell tumor
Pennsylvania (Memorial Medical Center Residents) - Granulosa cell tumor
Pennsylvania, Sewickley - Sex cord-stromal tumor (granulosa cell)
Texas, Lubbock - Granulosa cell tumor
Texas, San Antonio - Granulosa cell tumor (2)
Texas (Scott & White Memorial Hospital) - Granulosa cell tumor
Utah (St. Mark's Hospital) - Granulosa cell tumor
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Granulosa cell tumor
Washington, DC - Granulosa cell tumor
Washington, Vancouver - Metastatic granulosa cell tumor
Canada (CUSE, Site Fleurimont) - Granulosa cell tumor, adult type
Canada (University of Calgary, Foothills Hospital) - Adult granulosa cell tumor
China (Sir Run Run Shaw Hospital) - Metastatic granulosa cell tumor
Japan (Hamamatsu University School of Medicine) - Adult granulosa cell tumor
Japan (Self Defense Hospital) - Granulosa cell tumor
Japan (Shiga University of Medical Science) - Adult granulosa cell tumor (recurrence)
Netherlands, Amstelveen - Granulosa cell tumor (recurrence)
Puerto Rico (University of Puerto Rico) - Adult granulosa cell tumor
Spain (Policlinico Vigosa) - Granulosa cell tumor

CASE 4 - Diagnosis:

Granulosa cell tumor, retroperitoneum

T-Y4600, M-8620/1

Case 4 - References:

- Robinson JB, Im DD, Logan L, et al. Extraovarian Granulosa Cell Tumor. *Gynecol Oncol.* 1999 Jul; 74(1):123-127.
- Spencer HW, Mullings AM, Char G, et al. Granulosa-theca Cell Tumour of the Ovaries. A Late Metastasizing Tumour. *West Indian Med J.* 1999 Mar; 48(1):33-35
- Pelkey TJ, Frierson HF Jr, Mills SE, et al. The Diagnostic Utility of Inhibin Staining in Ovarian Neoplasms. *Int J Gynecol Pathol.* 1998 Apr; 17(2):97-105.
- Piura B, Nemet D, Yanai-Inbar I, et al. Granulosa cell tumor of the ovary: a study of 18 cases. *J Surg Oncol.* 1994 Feb;55(2):71-77
- Seidman JD. Unclassified Ovarian Gonadal Stromal Tumors. A Clinicopathologic Study of 32 Cases. *Am J Surg Pathol.* 1996 Jun; 20(6):699-706.

Case No. 5, Accession No. 29097

February 2002

Escondido - Yolk sac tumor

Glendale (Glendale Pathology Associates) - Yolk sac tumor

Loma Linda - Anaplastic seminoma, testicle

Los Angeles (USC Residents) - Embryonal carcinoma

Modesto (Yosemite Pathology Medical Group) - Embryonal carcinoma

Orange (UCI Medical Center Residents) - Mixed germ cell tumor

Sacramento (UC Davis Medical Center) - Mixed germ cell neoplasm with yolk sac tumor and embryonal carcinoma

Arkansas (UAMS) - NSGCT (nonseminomatous germ cell tumor), embryonal carcinoma + yolk sac tumor

Florida (Monroe Medical Center) - Mixed germ cell tumor, predominantly yolk sac carcinoma + embryonal

Florida (Winter Haven Hospital) - Yolk sac carcinoma

Georgia, Decatur - Mixed germ cell tumor (seminoma + yolk sac tumor)

Illinois (Marion Memorial Hospital) - Yolk sac tumor (endodermal sinus tumor)

Illinois (Sarah Bush Lincoln Health Center) - Embryonal carcinoma

Illinois, Skokie - Intratubular embryonal carcinoma

Kansas (Coffeyville Regional Medical Center) - Embryonal carcinoma (solid type), testis

Kentucky (University of Louisville Residents) - Seminoma with yolk sac elements

Massachusetts (Berkshire Medical Center) - Non-seminomatous mixed germ cell tumor with yolk-sac and embryonal carcinoma and ITGN (intratubular germ cell neoplasia)

Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Mixed germ cell tumor (90% yolk sac tumor, 10% embryonal carcinoma)

Maryland (National Naval Medical Center) - Malignant mixed germ cell tumor (embryonal carcinoma and yolk sac tumor) (11)

Michigan (Spectrum Health) - Yolk sac tumor

Michigan (St. Joseph Mercy Hospital) - Embryonal carcinoma

Michigan (St. Mary's Mercy Hospital) - Embryonal carcinoma/yolk sac tumor (1); Yolk sac tumor (1)

Missouri, Joplin - Embryonal carcinoma

New York (Nassau University Medical Center, Resident study group) - Embryonal carcinoma, testis

Nebraska (Good Samaritan Hospital) - Embryonal carcinoma

Ohio, Columbus - Germ cell tumor

Pennsylvania (Allegheny General Hospital) - Endodermal sinus tumor

Pennsylvania (Memorial Medical Center Residents) - Seminoma - anaplastic

Pennsylvania, Sewickley - Yolk sac carcinoma

Texas, Lubbock - Mixed nonseminomatous germ cell tumor with 90% of yolk sac tumor

Texas, San Antonio - YST (yolk sac tumor) (1); Mixed germ cell tumor (1)

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

Utah (St. Mark's Hospital) - Nonseminomatous germ cell tumor – yolk sac carcinoma

Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Germ cell tumor – mixed seminoma and embryonal

Washington, DC - Embryonal carcinoma

Washington, Vancouver - Non-seminomatous germ cell tumor with yolk-sac features in sampled tissue

Canada (CUSE, Site Fleurimont) - Yolk sac tumor

Canada (University of Calgary, Foothills Hospital) - Nonseminomatous germ cell tumor (yolk sac tumor)

China (Sir Run Run Shaw Hospital) - Embryonal carcinoma/yolk sac tumor

Japan (Hamamatsu University School of Medicine) - Embryonal carcinoma + yolk sac tumor

Japan (Self Defense Hospital) - Seminoma

Netherlands, Amstelveen - Germ cell tumor in situ + yolk sac tumor, + embryonal carcinoma + angioinvasion

Puerto Rico (University of Puerto Rico) - Germ cell tumor, embryonal carcinoma

Spain (Policlinico Vigosa) - Embryonal carcinoma + yolk sac tumor

Case 5 - Diagnosis:

Mixed germ cell tumor (embryonal carcinoma, yolk sac tumor, seminoma), testis

Director's Note: Due to sampling variation, not all slides had the same "mix" of tumors (drc)
T-78000, M-9070

Case 5 - References:

- Czaja JT, Ulbright TM. Evidence for the Transformation of Seminoma to Yolk Sac Tumor, with Histogenetic Considerations. *Am J Clin Pathol.* 1992 Apr; 97(4):468-477
Hadziselimovic F, Herzog B, Emmons LR. The Expression of CD44 Adhesion Molecules on Seminoma Cells. A New Marker for Early Detection of the Tumor. *Cancer.* 1996 Feb 1; 77(3):429-430
Kelty P, Frazier H, O'Connell K, et al. Germ Cell Testis Cancer: 15-Year Review. *J Surg Oncol.* 1996 May; 62(1):30-33.

Case No. 6, Accession No. 28784

February 2002

Escondido - Pheochromocytoma
Glendale (Glendale Pathology Associates) - Pheochromocytoma
Loma Linda - Pheochromocytoma, adrenal
Los Angeles (USC Residents) - Pheochromocytoma
Modesto (Yosemite Pathology Medical Group) - Pheochromocytoma
Orange (UCI Medical Center Residents) - Pheochromocytoma, adrenal
Sacramento (UC Davis Medical Center) - Pheochromocytoma
Arkansas (UAMS) - Pheochromocytoma
Florida (Monroe Medical Center) - Pheochromocytoma
Florida (Winter Haven Hospital) - Pheochromocytoma
Georgia, Decatur - Pheochromocytoma
Illinois (Marion Memorial Hospital) - Pheochromocytoma
Illinois (Sarah Bush Lincoln Health Center) - Pheochromocytoma
Illinois, Skokie - Pheochromocytoma
Kansas (Coffeyville Regional Medical Center) - Pheochromocytoma
Kentucky (University of Louisville Residents) - Pheochromocytoma
Massachusetts (Berkshire Medical Center) - Pheochromocytoma
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Pheochromocytoma
Maryland (National Naval Medical Center) - Pheochromocytoma (11)
Michigan (Spectrum Health) - Pheochromocytoma
Michigan (St. Joseph Mercy Hospital) - Pheochromocytoma
Michigan (St. Mary's Mercy Hospital) - Pheochromocytoma (2)
Missouri, Joplin - Adrenal cortical carcinoma
New York (Nassau University Medical Center, Resident study group) - Pheochromocytoma, right adrenal
Nebraska (Good Samaritan Hospital) - Pheochromocytoma
Ohio, Columbus - Pheochromocytoma
Pennsylvania (Allegheny General Hospital) - Pheochromocytoma
Pennsylvania (Memorial Medical Center Residents) - Pheochromocytoma
Pennsylvania, Sewickley - Pheochromocytoma
Texas, Lubbock - Pheochromocytoma
Texas, San Antonio - Pheochromocytoma (2)
Texas (Scott & White Memorial Hospital) - Pheochromocytoma
Utah (St. Mark's Hospital) - Pheochromocytoma
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Pheochromocytoma
Washington, DC - Pheochromocytoma
Washington, Vancouver - Paraganglioma
Canada (CUSE, Site Fleurimont) - Pheochromocytoma
Canada (University of Calgary, Foothills Hospital) - Pheochromocytoma
China (Sir Run Run Shaw Hospital) - Pheochromocytoma
Japan (Hamamatsu University School of Medicine) - Pheochromocytoma
Japan (Self Defense Hospital) - Pheochromocytoma
Japan (Shiga University of Medical Science) - Pheochromocytoma
Netherlands, Amstelveen - Pheochromocytoma
Puerto Rico (University of Puerto Rico) - Pheochromocytoma
Spain (Policlinico Vigosa) - Pheochromocytoma

Case 6 - Diagnosis:

Pheochromocytoma, adrenal

T9300, M-87000

Case 6 - References:

- Pacak K, Eisenhofer G, Carrasquillo JA, et al. 6-[18F]Fluorodopamine Positron Emission Tomographic (PET) Scanning for Diagnostic Localization of Pheochromocytoma. *Hypertension*. 2001 Jul; 38(1):6-8.
- Mayo-Smith WW, Boland GW, Noto RB, et al. State-of-the-art Adrenal Imaging. *Radiographics*. 2001 Jul-Aug; 21(4):995-1012
- Mishra A, Agarwal G, Misra AK, et al. Functioning Adrenal Tumours in Children and Adolescents: An Institutional Experience. *ANZ J Surg*. 2001 Feb; 71(2):103-107.
- Lam KY, Lo CY, Wat NM, et al. The Clinicopathological Features and Importance of p53, Rb, and mdm2 Expression in Pheochromocytomas and Paragangliomas. *J Clin Pathol*. 2001 Jun; 54(6):443-448
- Eisenhofer G. Free or Total Metanephrines for Diagnosis of Pheochromocytoma: What is the Difference? *Clin Chem*. 2001 Jun; 47(6):988-989.
- Krentz AJ, Mikhail S, Cantrell P, et al. Drug Points: Pseudopheochromocytoma Syndrome Associated with Clozapine. *BMJ*. 2001 May 19; 322(7296):1213

Case No. 7, Accession No. 29090

February 2002

Escondido - Chondrosarcoma

Glendale (Glendale Pathology Associates) - Chondrosarcoma, low-grade

Loma Linda - Chondrosarcoma, femur

Los Angeles (USC Residents) - Chondrosarcoma

Modesto (Yosemite Pathology Medical Group) - Well-differentiated chondrosarcoma

Orange (UCI Medical Center Residents) - Chondrosarcoma

Sacramento (UC Davis Medical Center) - Low grade chondrosarcoma

Arkansas (UAMS) - Intramedullary chondrosarcoma

Florida (Monroe Medical Center) - Chondrosarcoma

Florida (Winter Haven Hospital) - Chondrosarcoma

Georgia, Decatur - Chondrosarcoma

Illinois (Marion Memorial Hospital) - Chondrosarcoma, grade I

Illinois (Sarah Bush Lincoln Health Center) - Chondrosarcoma, intramedullary

Illinois, Skokie - Central chondrosarcoma

Kansas (Coffeyville Regional Medical Center) - Moderately differentiated chondrosarcoma

Kentucky (University of Louisville Residents) - Osteosarcoma vs. chondrosarcoma

Massachusetts (Berkshire Medical Center) - Chondrosarcoma

Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Conventional chondrosarcoma, grade 2

Maryland (National Naval Medical Center) - Chondrosarcoma (11)

Michigan (Spectrum Health) - Chondrosarcoma

Michigan (St. Joseph Mercy Hospital) - Chondrosarcoma

Michigan (St. Mary's Mercy Hospital) - Chondrosarcoma (1); Chondrosarcoma, low grade (1)

Missouri, Joplin - Chondrosarcoma

New York (Nassau University Medical Center, Resident study group) - Chondrosarcoma, femur

Nebraska (Good Samaritan Hospital) - Chondrosarcoma, grade I

Ohio, Columbus - Chondrosarcoma

Pennsylvania (Allegheny General Hospital) - Chondrosarcoma

Pennsylvania (Memorial Medical Center Residents) - Chondrosarcoma

Pennsylvania, Sewickley - Chondrosarcoma

Texas, Lubbock - Well-differentiated chondrosarcoma

Texas, San Antonio - Chondrosarcoma (2)

Texas (Scott & White Memorial Hospital) - Chondrosarcoma

Utah (St. Mark's Hospital) - Chondrosarcoma

Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Chondrosarcoma

Washington, DC - Chondrosarcoma

Washington, Vancouver - Chondrosarcoma

Canada (CUSE, Site Fleurimont) - Grade I chondrosarcoma

Canada (University of Calgary, Foothills Hospital) - Grade II/III chondrosarcoma

China (Sir Run Run Shaw Hospital) - Chondrosarcoma

Japan (Hamamatsu University School of Medicine) - Chondrosarcoma, grade II

Japan (Self Defense Hospital) - Chondrosarcoma
Japan (Shiga University of Medical Science) - Chondrosarcoma
Netherlands, Amstelveen - Chondrosarcoma
Puerto Rico (University of Puerto Rico) - Chondrosarcoma, conventional , grade I/II
Spain (Policlinico Vigosa) - Chondrosarcoma

CASE 7 - Diagnosis:

Conventional low grade chondrosarcoma, femur

T-11710, M-9220/3

Consultation: Joseph Mirra, M.D., Kaiser Permanente, Bellflower, “Low grade chondrosarcoma”

Case 7 - References:

Gerrand CH, Currie D, Grigoris P, et al. Prosthetic Reconstruction of the Femur for Primary Bone Sarcoma. *Int Orthop.* 1999; 23(5):286-290.
Palmer SH, Gibbons CL, Athanasou NA. The Pathology of Bone Allograft. *J Bone Joint Surg Br.* 1999 Mar; 81(2):333-335.
Lee FY, Mankin HJ, Fondren G, et al. Chondrosarcoma of Bone: An Assessment of Outcome. *J Bone Joint Surg Am.* 1999 Mar; 81(3):326-338.
Malawer MM, Chou LB. Prosthetic Survival and Clinical Results with Use of Large-segment Replacements in the Treatment of High-grade Bone Sarcomas. *J Bone Joint Surg Am.* 1995 Aug; 77(8):1154-1165.
Bommer KK, Ramzy I, Mody D. Fine-needle Aspiration Biopsy in the Diagnosis and Management of Bone Lesions: A Study of 450 Cases. *Cancer.* 1997 Jun 25; 81(3):148-156.

Case No. 8, Accession No. 29198

February 2002

Escondido - Leiomyosarcoma
Glendale (Glendale Pathology Associates) - Leiomyosarcoma
Loma Linda - Leiomyosarcoma, uterus
Los Angeles (USC Residents) - Epithelioid leiomyosarcoma
Modesto (Yosemite Pathology Medical Group) - Leiomyosarcoma
Orange (UCI Medical Center Residents) - Epithelioid leiomyosarcoma
Sacramento (UC Davis Medical Center) - Epithelioid leiomyosarcoma
Arkansas (UAMS) - Epithelioid leiomyosarcoma, clear cell type
Florida (Monroe Medical Center) - Smooth muscle tumor of uncertain malignant potential (STOMP)
Florida (Winter Haven Hospital) - Epithelioid leiomyoma
Georgia, Decatur - Epithelioid leiomyosarcoma
Illinois (Marion Memorial Hospital) - Epithelioid smooth muscle tumor of uncertain malignant potential
Illinois (Sarah Bush Lincoln Health Center) - Epithelioid leiomyosarcoma
Illinois, Skokie - Mixed mullerian tumor
Kansas (Coffeyville Regional Medical Center) - Leiomyosarcoma (epithelioid type), uterus
Kentucky (University of Louisville Residents) - Clear cell (epithelioid) leiomyosarcoma
Massachusetts (Berkshire Medical Center) - Leiomyosarcoma
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Epithelioid leiomyosarcoma
Maryland (National Naval Medical Center) - Epithelioid smooth muscle tumor of uncertain malignant potential (5); Epithelioid leiomyosarcoma (5)
Michigan (Spectrum Health) - Leiomyosarcoma
Michigan (St. Joseph Mercy Hospital) - Epithelioid leiomyosarcoma
Michigan (St. Mary's Mercy Hospital) - Epithelioid leiomyoma (2)
Missouri, Joplin - Uterine stromal sarcoma
New York (Nassau University Medical Center, Resident study group) - Epithelioid leiomyosarcoma, uterus
Nebraska (Good Samaritan Hospital) - Epithelioid leiomyosarcoma
Ohio, Columbus - Epithelioid leiomyosarcoma
Pennsylvania (Allegheny General Hospital) - Epithelioid leiomyosarcoma
Pennsylvania (Memorial Medical Center Residents) - Leiomyoblastoma
Pennsylvania, Sewickley - Epithelioid smooth muscle neoplasm
Texas, Lubbock - Leiomyosarcoma
Texas, San Antonio - Epithelioid LMS (leiomyosarcoma) (1); Leiomyoma (1)
Texas (Scott & White Memorial Hospital) - Epithelioid leiomyosarcoma
Utah (St. Mark's Hospital) - Epithelioid leiomyosarcoma
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Epithelioid leiomyosarcoma

Washington, DC - Epithelioid leiomyosarcoma
Washington, Vancouver - Epithelioid smooth muscle tumor of uncertain malignant potential
Canada (CUSE, Site Fleurimont) - Clear cell leiomyoma
Canada (University of Calgary, Foothills Hospital) - Epithelioid leiomyosarcoma
China (Sir Run Run Shaw Hospital) - Leiomyosarcoma (epithelioid type)
Japan (Hamamatsu University School of Medicine) - Epithelioid leiomyosarcoma
Japan (Self Defense Hospital) - Epithelioid leiomyosarcoma
Japan (Shiga University of Medical Science) - Epithelioid leiomyosarcoma
Netherlands, Amstelveen - Epithelioid leiomyosarcoma
Puerto Rico (University of Puerto Rico) - Leiomyoblastoma
Spain (Policlinico Vigosa) - Epithelioid leiomyosarcoma

Case 8 - Diagnosis:

Epithelioid leiomyosarcoma, uterus

T-82000, M-8891/3

Case 8 - References:

Kuroda H, Konishi I, Nanbu K, et al. Malignant Plexiform Tumor of the Uterus: An Unusual Variant of the Epithelioid Leiomyosarcoma. *Gynecol Oncol.* 1996 Nov; 63(2):270-275.
 Bekkers RL, Massuger LF, Berg PP, et al. Uterine Malignant Leiomyoblastoma (epithelioid leiomyosarcoma) During Pregnancy. *Gynecol Oncol.* 1996 Mar 72(3):433-436.
 Prayson RA, Goldblum JR, Hart WR. Epithelioid Smooth-Muscle Tumors of the Uterus; A Clinicopathologic Study of 18 Patients. *Am J Surg Pathol.* 1997 Apr; 21(4):383-391.
 Zhai YL, Nikaido T, Toki T, et al. Prognostic Significance of Bcl-2 Expression in Leiomyosarcoma of the Uterus. *Br J Cancer.* 1998 Jul; 80(10):1658-1664.
 Blom R, Guerrieri C, Stal O, et al. Leiomyosarcoma of the Uterus: A Clinicopathologic, DNA Flow Cytometric, p53, and mdm-2 Analysis of 49 Cases. *Gynecol Oncol.* 1998 Jan; 68(1):54-61

Case No. 9, Accession No. 29374

February 2002

Escondido - Schwannoma
Glendale (Glendale Pathology Associates) - Schwannoma
Loma Linda - Schwannoma, brachial plexus
Los Angeles (USC Residents) - Schwannoma
Modesto (Yosemite Pathology Medical Group) - Plexiform neurofibroma
Orange (UCI Medical Center Residents) - Cellular schwannoma
Sacramento (UC Davis Medical Center) - Schwannoma
Arkansas (UAMS) - Cellular schwannoma
Florida (Monroe Medical Center) - Neurofibroma
Florida (Winter Haven Hospital) - Schwannoma
Georgia, Decatur - Schwannoma
Illinois (Marion Memorial Hospital) - Cellular schwannoma
Illinois (Sarah Bush Lincoln Health Center) - Schwannoma
Illinois, Skokie - Cellular schwannoma
Kansas (Coffeyville Regional Medical Center) - Cellular schwannoma
Kentucky (University of Louisville Residents) - Neurilemoma
Massachusetts (Berkshire Medical Center) - MPNST (malignant peripheral nerve sheath tumor)
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Cellular schwannoma
Maryland (National Naval Medical Center) - Cellular schwannoma (11)
Michigan (Spectrum Health) - Schwannoma (low-grade, benign peripheral nerve sheath tumor)
Michigan (St. Joseph Mercy Hospital) - Cellular schwannoma
Michigan (St. Mary's Mercy Hospital) - Schwannoma (2)
Missouri, Joplin - Malignant schwannoma
New York (Nassau University Medical Center, Resident study group) - Schwannoma, brachial plexus
Nebraska (Good Samaritan Hospital) - Cellular schwannoma
Ohio, Columbus - Cellular schwannoma
Pennsylvania (Allegheny General Hospital) - Cellular schwannoma
Pennsylvania (Memorial Medical Center Residents) - Cellular neurilemmoma
Pennsylvania, Sewickley - Cellular schwannoma
Texas, Lubbock - Neurilemmoma

Texas, San Antonio - Schwannoma (2)
Texas (Scott & White Memorial Hospital) - Schwannoma
Utah (St. Mark's Hospital) - Schwannoma
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Schwannoma
Washington, DC - Schwannoma
Washington, Vancouver - Schwannoma
Canada (CUSE, Site Fleurimont) - MPNST (malignant peripheral nerve sheath tumor)
Canada (University of Calgary, Foothills Hospital) - Cellular schwannoma
China (Sir Run Run Shaw Hospital) - Malignant neurilemmoma
Japan (Hamamatsu University School of Medicine) - Schwannoma
Japan (Self Defense Hospital) - Cellular schwannoma
Japan (Shiga University of Medical Science) - Schwannoma
Netherlands, Amstelveen - Malignant peripheral nerve sheath tumor
Puerto Rico (University of Puerto Rico) - Schwannoma, ancient vs. cellular
Spain (Policlinico Vigosa) - Cellular schwannoma

Case 9 - Diagnosis:

Cellular schwannoma, brachial plexus

T-X9090, M-9560/0

Case 9 - References:

Woodruff JM, Godwin TA, Erlandson RA, et al. Cellular Schwannoma: A Variety of Schwannoma Sometimes Mistaken for a Malignant Tumor. *Am J Surg Pathol.* 1981 Dec; 5(8):733-744.
 Bruner JM. Peripheral Nerve Sheath Tumors of the Head and Neck. *Semin Diagn Pathol.* 1987 May; 4(2):136-149.
 Hajdu SI. Peripheral Nerve Sheath Tumors. Histogenesis, Classification, and Prognosis. *Cancer.* 1993 Dec 15; 72(12):3549-3552.
 Godwin JT. Encapsulated Neurilemmoma (Schwannoma) of the Brachial Plexus: Report of Eleven Cases. *Cancer.* 1992; 5:708-720

Case No. 10, Accession No. 29356

February 2002

Escondido - Papillary renal cell carcinoma
Glendale (Glendale Pathology Associates) - Papillary (chromophil) renal cell carcinoma
Loma Linda - Renal cell carcinoma
Los Angeles (USC Residents) - Papillary renal cell carcinoma
Modesto (Yosemite Pathology Medical Group) - Papillary renal cell carcinoma
Orange (UCI Medical Center Residents) - Metanephric adenoma (3) vs. papillary carcinoma of the kidney (3)
Sacramento (UC Davis Medical Center) - Renal cell neoplasm of low malignant potential
Arkansas (UAMS) - Chromophil renal cell carcinoma
Florida (Monroe Medical Center) - Renal cell carcinoma
Florida (Winter Haven Hospital) - Renal cell carcinoma, tubulopapillary type
Georgia, Decatur - Papillary renal cell carcinoma
Illinois (Marion Memorial Hospital) - Renal cell carcinoma, papillary
Illinois (Sarah Bush Lincoln Health Center) - Renal cell carcinoma, papillary type
Illinois, Skokie - Renal oncocytoma
Kansas (Coffeyville Regional Medical Center) - Renal cell carcinoma, granular cell type
Kentucky (University of Louisville Residents) - Papillary renal cell carcinoma
Massachusetts (Berkshire Medical Center) - Well-differentiated papillary RCC (renal cell carcinoma)
Massachusetts (Brigham & Women's Hospital Residents/Fellows) - Papillary renal cell carcinoma
Maryland (National Naval Medical Center) - Papillary renal cell carcinoma (7); Metanephric adenoma (4)
Michigan (Spectrum Health) - Papillary renal cell carcinoma
Michigan (St. Joseph Mercy Hospital) - Papillary renal cell carcinoma
Michigan (St. Mary's Mercy Hospital) - Papillary renal cell carcinoma (2)
Missouri, Joplin - Renal carcinoma
New York (Nassau University Medical Center, Resident study group) - Papillary renal cell carcinoma, kidney
Nebraska (Good Samaritan Hospital) - Renal cell carcinoma, papillary type
Ohio, Columbus - Renal cell carcinoma
Pennsylvania (Allegheny General Hospital) - Papillary renal cell carcinoma
Pennsylvania (Memorial Medical Center Residents) - Papillary variant of renal cell carcinoma
Pennsylvania, Sewickley - Metanephric adenoma
Texas, Lubbock - Renal cell carcinoma, clear cell type
Texas, San Antonio - Papillary renal cell carcinoma (2)

Texas (Scott & White Memorial Hospital) - Papillary renal cell carcinoma
Utah (St. Mark's Hospital) - Renal cell carcinoma
Virginia (Shenandoah Valley Pathology Laboratory, Inc.) - Papillary renal cell carcinoma
Washington, DC - Papillary renal cell carcinoma
Washington, Vancouver - Renal cell carcinoma, papillary variant
Canada (CUSE, Site Fleurimont) - Metanephric adenoma
Canada (University of Calgary, Foothills Hospital) - Solid variant of papillary renal cell carcinoma
China (Sir Run Run Shaw Hospital) - Collecting duct carcinoma
Japan (Hamamatsu University School of Medicine) - Papillary adenoma
Japan (Self Defense Hospital) - Renal cell carcinoma, papillary type
Japan (Shiga University of Medical Science) - Metanephric adenoma
Netherlands, Amstelveen - Renal cortical adenoma
Puerto Rico (University of Puerto Rico) - Renal cell carcinoma, chromophobe
Spain (Policlinico Vigosa) - Papillary renal cell carcinoma

Case 10 - Diagnosis:

Papillary renal cell carcinoma, kidney

T-71000, M-8312/3

Case 10 - References:

Godley PA, Taylor M. Renal Cell Carcinoma. *Curr Opin Oncol.* 2001 May; 13(3):199-203
 Girgin C, Tarhan H, Hekimgil M, et al. P53 Mutations and Other Prognostic Factors of Renal Cell Carcinoma. *Urol Int.* 2001; 66(2):78-83.
 Hara T, Noma T, Yamashiro Y, Naito K, et al. Quantitative Analysis of Telomerase Activity and Telomerase Reverse Transcriptase Expression in Renal Cell Carcinoma. *Urol Res.* 2001 Feb; 29(1):1-6.
 Launonen V, Vierimaa O, Kiuru M, et al. Inherited Susceptibility to Uterine Leiomyomas and Renal Cell Cancer. *Proc Natl Acad Sci U S A.* 2001 Mar 13; 98(6):3387-3392.