1558

CALIFORNIA
TUMOR TISSUE REGISTRY

October, 2007

Study Cases, Subscription B

Soft Tissue Tumors

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

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.

Objectives:

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:

Donald R. Chase, MD

CME Credit:

Loma Linda University School of Medicine designates this continuing medical education activity for up to 2 hours of Category I of the Physician's Recognition Award of the American Medical Association.

CME credit is offered for the subscription year only.

Accreditation:

Loma Linda University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

Contributor: Jozef Kollin, M.D.
Lakewood, CA

Case No. 1 - October, 2007 B

Tissue from: Abdominal wall

Accession #30347

Clinical Abstract:

A 20-year-old woman presented with a six-month history of progressive abdominal pain and an abdominal mass that was initially felt to be a hernia. CT of the abdomen showed an abdominal wall mass.

Gross Pathology:

The 800 gram specimen included a 12.0 x 10.0 x 10.0 cm fairly well-circumscribed mass with attached portions of skin and soft tissue. The cut surface was tan rubbery-firm, moist, and glistening, generally homogeneous with focal hemorrhagic spots.

Contributor: Kenneth Frankel, M.D.
Covina, CA

Case No. 2 - October, 2007 B

Tissue from: Right leg

Accession #30223

Clinical Abstract:

A 44-year-old noted a mass in the right leg.

Gross Pathology:

The specimen consisted of a 2.5 cm polypoid-shaped piece of skin. The parenchyma was composed of firm, yellow-tan homogeneous tissue.

Special Studies:

Positive: CD68.
Negative: S-100 protein, Pancytokeratin, HMB-45.

Contributor: Douglas Eglen, M.D.
Kokomo, IN

Case No. 3 - October, 2007 B

Tissue from: Right scapula

Accession #30318

Clinical Abstract:

A 66-year-old woman with a history of Raynaud's syndrome and arthritis presented with a 6.0 x 4.0 cm mobile subcutaneous mass at the tip of the scapula, adherent to the serratus anterior muscle. The mass was dissected free of the muscle and excised.

Gross Pathology:

The specimen consisted of two firm nodular pink-tan, soft tissue fragments, individually 5.6 and 2.0 cm in greatest dimension. Sectioning revealed fibrofatty tissue.

Special Studies:

Elastic stain – Positive.

Contributor: Phillip Gordon, M.D.
Winter Haven, FL

Case No. 4 - October, 2007 B

Tissue from: Scrotum

Accession #30194

Clinical Abstract:

A 63-year-old man complained of a mass in the left scrotum.

Gross Pathology:

The 43 gram, 12.0 x 4.0 cm specimen consisted of tan and yellow-tan soft tissue with a myxoid yellow-tan, fatty to gelatinous cut surface.

Contributor: Jozef Kollin, M.D.
Lakewood, CA

Case No. 5 - October, 2007 B

Tissue from: Knee

Accession #30010

Clinical Abstract:

Twelve years after bilateral knee implants, this 69-year-old woman underwent revision of the left total knee arthroplasty.

Gross Pathology:

The 10.0 x 8.0 x 1.5 cm flat piece of soft tissue had a smooth gray-tan surface with firm light brown papillary projections on the inner aspect.

Contributor: Dennis Kasimian, M.D.
Van Nuys, CA

Case No. 6 - October, 2007 B

Tissue from: Right palm

Accession #30317

Clinical Abstract:

A 24-year-old, right hand dominant man presented with a progressively enlarging mass in the palm of the right hand.

Gross Pathology:

The 2.5 x 2.5 x 1.5 cm specimen consisted of an encapsulated ovoid soft tissue fragment with a gelatinous, friable gray cut surface.

Special Studies:

Positive: S-100 protein, Smooth muscle actin (focally)
Negative: Desmin

Contributor: LLUMC Pathology (nhp)
Loma Linda, CA

Case No. 7 - October, 2007 B

Tissue from: Right upper arm

Accession #30246

Clinical Abstract:

After noting a mass in the right upper arm, this 33-year-old man requested excision.

Gross Pathology:

The specimen consisted of a 57.3 gram, 7.0 x 3.2 cm pink-tan skin excision cut to a depth of 3.2 cm. Serial sectioning revealed a 4.2 cm, well-circumscribed, hemorrhagic subcutaneous mass.

Special Studies:

CD34 negative in lesional cells

Contributor: Robert Zuch, M.D.
Baldwin Park, CA

Case No. 8 - October, 2007 B

Tissue from: Left hip

Accession #29017

Clinical Abstract:

A 21-year-old man sought treatment for a bulging mass in the left hip area with accompanying pain. CT scan showed a 15.0 cm mass, as well as multiple nodules in bilateral lungs. A needle biopsy was performed, and the patient was started on chemotherapy. A radical resection was performed one year after therapy.

Gross Pathology:

The specimen consisted of a left hip resection specimen, including femoral head and pelvic bone. Within the specimen was a 10.5 cm mass invading soft tissues, hip and pelvic bones.

Special Studies:

Positive: CD99

Contributor: Peter Morris, M.D.
Santa Barbara, CA

Case No. 9 - October, 2007 B

Tissue from: Bilateral ovaries

Accession #30268

Clinical Abstract:

An 18-year-old nulliparous woman presented with increasing abdominal girth and lower abdominal pain with radiation to the back. Her last Pap smear and pelvic exam one month previously were reported as normal. Ultrasound and CT scan confirmed the presence of a pelvic mass felt to be separate from the uterus.

Gross Pathology:

The 359 gram, 12.1 x 9.0 x 7.0 cm right ovary was replaced by a firm, relatively homogeneous, light tan solid neoplasm with 1-2 mm cystic areas. The 618 gram, 11.5 x 12.0 x 8.5 cm nodular left ovary had a smooth surface and was replaced by a firm, light tan solid neoplasm with an irregular central pink to gray area.

Special Studies:

Positive: Keratin, CAM 5.2, EMA, Vimentin, Desmin.

Negative: CD45, S-100 protein, Synaptophysin, Keratin 5/6, Keratin 7, Keratin 20, CEA, Inhibin, CD99, PLAP, HCG, AFP.

Contributor: Mark Carter, M.D.
Lackland AFB, TX

Case No. 10 - October, 2007 B

Tissue from: Left thoracic mass

Accession #30230

Clinical Abstract:

A 25-year-old man underwent an excision of an intrathoracic/mediastinal mass.

Gross Pathology:

The mass measured greater than 15.0 cm in diameter.

Special Studies:

Positive: Desmin, Muscle specific actin, and Myo-D1.

Negative: S-100 protein, GFAP, CD31, CD34, Kermix, EMA, LCA, Synaptophysin, NSE, CD99, Smooth muscle actin.

CALIFORNIA
TUMOR TISSUE REGISTRY

"Soft Tissue Tumors"

Minutes – Subscription B

October, 2007

SUGGESTED READING (General Topics from Recent Literature):

Endothelial Lesions of Soft Tissues. A Review of Reactive and Neoplastic Entities with Emphasis on Low-Grade Malignant ("Borderline") Vascular Tumors. O'Hara CD and Nascimento AG. *Adv Anat Pathol* 2003; 10(2):69-87.

Protocol for the Examination of Specimens From patients with Soft Tissue Tumors of Intermediate Malignant Potential, Malignant Soft Tissue Tumors, and Benign/Locally Aggressive and Malignant Bone Tumors. Rubin BP, Fletcher CD, Inwards C, et al. *Arch Pathol Lab Med*; 2006; 130(11):1616-1629.

Lipoblastic Nerve Sheath Tumors. Report of a Distinctive Variant of Neural Soft Tissue Neoplasm with Adipocytic Diferentiation. *Am J Surg Pathol* 2006; 30(3):337-344.

Detection and Diagnostic Utilization of Placental Alkaline Phosphatase in Muscular Tissue and Tumors with Myogenic Differentiation. *Am J Surg Pathol* 2002; 26(12):1627-1633.

Leiomyosarcoma of Somatic Soft Tissues. A Tumor of Vascular Origin with Multivariante Analysis of Outcome in 42 Cases. *Am J Surg Pathol* 2002; 26(1):14-24.

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FILE DIAGNOSES

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

CTTR Subscription B

Case 1:

Fibromatosis
T-Y4100, M-76100

Case 2:

Cutaneous fibrous histiocytoma (lipidized), leg
T-Y9400, M-88300

Case 3:

Elastofibroma, scapula
T-11280, M-88200

Case 4:

Aggressive angiomyxoma, scrotum
T-79400, M-88400

Case 5:

Diffuse tenosynovial giant cell tumor (pigmented villonodular synovitis), knee
T-05145, M-Y9200

Case 6:

Benign peripheral nerve sheath tumor, palm
T-Y8740, M-95600

Case 7:

Low grade mesenchymal neoplasm, favor varient of fibrous histiocytoma, arm
T-Y8210, M-91501

Case 8:

PNET/Ewing's sarcoma
T-Y1500, M-92603

Case 9:

Desmoplastic small round cell tumor, ovaries
T-87000, M-49000

Case 10:

Pleomorphic rhabdoyosarcoma, intrathoracic/mediastinum
T-Y2200, M-89003

Case No. 1 - Accession No. 30347 October, 2007 B

Glendale - Abdominal fibromatosis
Los Angeles (USC Medical Center) - Neurofibroma, solitary
Newport Beach - Dermoid tumor
San Diego (Naval Medical Center) - Fibromatosis
San Francisco (University of California SF) - Desmoid
Woodland Hills (Woodland Hills Medical Center) - Fibromatosis (desmoid fibromatosis)
Alabama, Mt Olive - Fibromatosis
Florida, Winter Park - Solitary fibrous tumor
Georgia, Decatur - Fibromatosis
Illinois (Heartland Regional Medical Center) - Abdominal fibromatosis
Illinois (Sarah Bush Lincoln Heath Center) - Intra-abdominal fibromatosis (desmoid tumor)
Kansas (Coffeyville Regional Medical Center) - Neurofibroma
Kansas (Peterson Laboratory Services) - Fibromatosis
Kansas (Physicians Reference Laboratory) - Desmoid
Las Vegas (Sunrise Hospital) - Solitary fibrous tumor
Massachusetts (Beverly Hospital) - Desmoid fibromatosis
Michigan (Henry Ford Hospital Residents Group) - Fibromatosis
Missouri (St. John's Regional Medical Center) - Abdominal fibromatosis
New Mexico (University of New Mexico) - Desmoid tumor
New York (New York Stony Brook University Center Residents) - Fibromatosis
New York (SUNY Downstate Medical Center) - Desmoid type fibromatosis
New York (Westchester Medical Center) - Desmoid tumor
North Carolina (Wake Forest University School of Medicine) - Desmoid type fibromatosis
North Carolina (Womack Army Medical Center) - Desmoid tumor (5)
Pennsylvania (Conemaugh Hospital) - Fibromatosis
Pennsylvania (Drexel University of Medicine) - Fibromatosis
Puerto Rico (University of Puerto Rico) - Desmoid type fibromatosis
Rhode Island (RI Hospital) - Deep desmoid type fibromatosis
South Carolina (Hilton Head Hospital) - Uterus, placenta, unknown diagnosis
Texas, Crystal Beach - Abdominal desmoid tumor
Texas, Lubbock - Desmoid tumor
Washington, DC - Fibromatosis/desmoid tumor
Wisconsin, Madison - Fibromatosis (desmoid tumor)
West Virginia (WV University Hospital) - (Desmoid) fibromatosis
Australia (Sullivan Nicolaides Pathology) - Desmoid fibromatosis, abdominal wall
Canada (Pasqua Hospital) - Fibromatosis
Canada (Sherbrooke University Hospital) - Desmoid tumor
Japan (Asahi General Hospital) - Abdominal fibromatosis
United Kingdom (Oxford Study Group) - Fibromatosis

Case 1 - Diagnosis:

Fibromatosis

T-Y4100, M-76100

Case 1 - References:

Durkin AJ, Korkolis DP, Al-Saif O, Zervos EE: Full-Term Gestation And Transvaginal Delivery After Wise Resection of An Abdominal Desmoid Tumor During Pregnancy. *J Surg Oncol*, 2005 Feb 1; 89(2):86-90.

Picariello L, Tonelli F, Brandi ML: Selective Oestrogen Receptor Modulators In Desmoid Tumours. *Expert Opin Investig Drugs*, 2004 Nov; 13(11):1457-68. Review.

Teo HE, Peh WC, Shek TW: Case 84: Desmoid Tumor of the Abdominal Wall. *Radiology*, 2005 Jul; 236(1):81-4.

Casillas J, Sais GJ, Greve JL, et al: Imaging Of Intra- and Extra-Abdominal Desmoid Tumors. *Radiographics*, 1991 Nov; 11(6):959-68.

Kunieda K, Saji S, Tanaka Y, et al: An Abdominal Desmoid Tumor Involving The Xyphoid and Costal Chondrium Associated with Pregnancy: Report of a Case. *Surg Today*, 1999; 29(9):927-30.

Case No. 2 - Accession No. 30223 October, 2007 B

Glendale - Dermatofibroma

Los Angeles (USC Medical Center) - Dermatofibroma, benign fibrous histiocytoma
Newport Beach - Fibrous histiocytoma
San Diego (Naval Medical Center) - Cellular fibroma (6); Atypical fibrous xanthoma (4)
San Francisco (University of California SF) - Benign fibrous histiocytoma, lipidized
Woodland Hills (Woodland Hills Medical Center) - Dermatofibroma (fibrous histiocytoma), lipidized
Alabama, Mt Olive - Tuberous xanthoma
Florida, Winter Park - Xanthomatous dermatofibroma
Georgia, Decatur - Benign fibrous histiocytoma
Illinois (Heartland Regional Medical Center) - Dermatofibroma, lipidized variant
Illinois (Sarah Bush Lincoln Heath Center) - Atypical fibrous histiocytoma
Kansas (Coffeyville Regional Medical Center) - Fibrous histiocytoma with bone formation, malignant
Kansas (Peterson Laboratory Services) - Fibrous histiocytoma
Kansas (Physicians Reference Laboratory) - Lipidized fibrous histiocytoma
Las Vegas (Sunrise Hospital) - Xanthogranuloma
Massachusetts (Beverly Hospital) - Xanthoma
Michigan (Henry Ford Hospital Residents Group) - Dermal fibrous histiocytoma
Missouri (St. John's Regional Medical Center) - Dermal fibrous histiocytoma
New Mexico (University of New Mexico) - Benign fibrous histiocytoma, lipoid type
New York (New York Stony Brook University Center Residents) - Deep dermatofibroma
New York (SUNY Downstate Medical Center) - Fibrous histiocytoma (dermatofibroma)
New York (Westchester Medical Center) - Histiocytoma
North Carolina (Wake Forest University School of Medicine) - Juvenile xanthogranuloma (2)
North Carolina (Womack Army Medical Center) - Benign fibrous histiocytoma (5)
Pennsylvania (Conemaugh Hospital) - Benign fibrohistiocytoma
Pennsylvania (Drexel University of Medicine) - Atypical fibroxanthoma
Puerto Rico (University of Puerto Rico) - Fibrous histiocytoma, hemosiderotic
Rhode Island (RI Hospital) - Dermatofibroma (fibrous histiocytoma)
South Carolina (Hilton Head Hospital) - Retroperitoneum, lipoleiomyoma
Texas, Crystal Beach - Dermal fibrous histiocytoma
Texas, Lubbock - Fibroxanthoma
Washington, DC - Fibrous histiocytoma
Wisconsin, Madison - Fibrous histiocytic tumor (dermatofibroma)
West Virginia (WV University Hospital) - Dermatofibroma
Australia (Sullivan Nicolaides Pathology) - Fibrous histiocytoma, clear cell variant
Canada (Pasqua Hospital) - Dermatofibroma
Canada (Sherbrooke University Hospital) - Xanthogranuloma
Japan (Asahi General Hospital) - Lipidized dermatofibroma
United Kingdom (Oxford Study Group) - Benign fibrous histiocytoma

Case 2 - Diagnosis:

Cutaneous fibrous histioctyoma (lipidized), leg
T-Y9400, M-88300

Outside Consultation: Andrew Folpe, M.D.; Emory University: "Lipidized benign fibrous histiocytoma."

Case 2 - References:

Beham A, Fletcher CD: Atypical "Pseudosarcomatous" Variant Of Cutaneous Benign Fibrous Histiocytoma: Report of 8 Cases. *Histopathology*, 1990; 17:167-9.

Burgdorf WH, Duray P, Rosai J: Immunohistochemical Identification of Lipozyme in Cutaneous Lesions of Alleged Histiocytic Nature. *Am J Clin Pathol*, 1981; 75:162-7.

Calonje E, Fletcher CD: Aneurysmal Benign Cutaneous Histiocytoma: Clinicopathologic Analysis of a Tumor Frequently Misdiagnosed as a Vascular Lesion. *Histopathology*, 1995; 26:323-31.

Calonje E, Fletcher CD: Cutaneous Fibrous Histiocytic Tumors: An Update. *Adv Anat Pathol*, 1994; 1:2-15.

Calonje E, Mentzel T, Fletcher CD: Cellular Benign Fibrous Histiocytoma. Clinicopathologic Analysis of 74 Cases of a Distinctive Variant of Cutaneous Fibrous Histiocytoma with Frequent Recurrence. *Am J Surg Pathol*, 1994; 18:668-76.

Glendale - Elastofibroma
Los Angeles (USC Medical Center) - Elastofibroma dorsi
Newport Beach - Elastofibroma
San Diego (Naval Medical Center) - Elastofibroma
San Francisco (University of California SF) - Elastofibroma
Woodland Hills (Woodland Hills Medical Center) - Elastofibroma
Alabama, Mt Olive - Elastofibroma
Florida, Winter Park - Elastofibroma
Georgia, Decatur - Elastofibroma
Illinois (Heartland Regional Medical Center) - Elastofibroma dorsii
Illinois (Sarah Bush Lincoln Heath Center) - Elastofibroma
Kansas (Coffeyville Regional Medical Center) - Elastofibroma
Kansas (Peterson Laboratory Services) - Elastofibroma
Kansas (Physicians Reference Laboratory) - Elastofibroma
Las Vegas (Sunrise Hospital) - Elastofibroma
Massachusetts (Beverly Hospital) - Elastofibroma
Michigan (Henry Ford Hospital Residents Group) - Elastofibroma
Missouri (St. John's Regional Medical Center) - Elastofibroma
New Mexico (University of New Mexico) - Elastofibroma
New York (New York Stony Brook University Center Residents) - Elastofibroma
New York (SUNY Downstate Medical Center) - Elastofibroma
New York (Westchester Medical Center) - Elastofibroma
North Carolina (Wake Forest University School of Medicine) - Elastofibroma (2)
North Carolina (Womack Army Medical Center) - Elastofibroma (5)
Pennsylvania (Conemaugh Hospital) - Elastofibroma
Pennsylvania (Drexel University of Medicine) - Elastofibroma
Puerto Rico (University of Puerto Rico) - Elastofibroma
Rhode Island (RI Hospital) - Elastofibroma
South Carolina (Hilton Head Hospital) - Vulva, angiomyofibroblastoma
Texas, Crystal Beach - Fibromatosis
Texas, Lubbock - Elastofibroma
Washington, DC - Elastofibroma
Wisconsin, Madison - Elastoma
West Virginia (WV University Hospital) - Elastofibroma
Australia (Sullivan Nicolaides Pathology) - Elastofibroma dorsi
Canada (Pasqua Hospital) - Elastofibroma
Canada (Sherbrooke University Hospital) - Elastofibroma
Japan (Asahi General Hospital) - Elastofibroma dorsi
United Kingdom (Oxford Study Group) - Elastofibroma

Case 3 - Diagnosis:

Elastofibroma, scapula
T-11280, M-88200

Case 3 - References:

Dixon AY, Lee SH: An Ultrastructural Study of Elastofibromas. *Hum Pathol*, 1980; 11:257-62.

Gartmann H, Groth W, Kuhn A: Elastofibroma Dorsi. *Z Hautler*, 1988; 63:525-28.

Schwartz T, Oppolzer G, Duschet P, et al: Ulcerating Elastofibroma Dorsi. *J Am Acad Dermatol*, 1989; 1142-4.

Erkilic S, Kocer NE and Sivrikoz C. Subscapular Elastofibroma Intermingled with Adipose Tissue. Variant Type of Elastofibroma or Lipoma? *Ann Diagn Pathol* 2005; 9(6):327-329.

Hayes AJ, Alexander N, Clark MA, et al. Elastofibroma. A Rare Soft Tissue Tumour with a Pathognomonic Anatomical Location and Clinical Symptom. *Eur J Surg Oncol* 2004; 30(4):450-453.

Case No. 4 - Accession No. 30194 October, 2007 B

Glendale - Benign angiomyofibroblastoma
Los Angeles (USC Medical Center) - Spindle cell lipoma vs. neurofibroma with fatty overgrowth
Newport Beach - Angiofibroma
San Diego (Naval Medical Center) - Aggressive angiomyxoma
San Francisco (University of California SF) - Aggressive angiomyxoma
Woodland Hills (Woodland Hills Medical Center) - Aggressive angiomyxoma
Alabama, Mt Olive - Angiomyofibroblastoma
Florida, Winter Park - Aggressive angiomyxoma
Georgia, Decatur - Plexiform neurofibroma
Illinois (Heartland Regional Medical Center) - Aggressive angiomyxoma
Illinois (Sarah Bush Lincoln Heath Center) - Myxoma
Kansas (Coffeyville Regional Medical Center) - Aggressive angiomyxoma
Kansas (Peterson Laboratory Services) - Aggressive angiomyxoma
Kansas (Physicians Reference Laboratory) - Myxoid neurofibroma
Las Vegas (Sunrise Hospital) - Neurofibroma
Massachusetts (Beverly Hospital) - Atypical lipomatous tumor
Michigan (Henry Ford Hospital Residents Group) - Aggressive angiomyxoma
Missouri (St. John's Regional Medical Center) - Aggressive angiomyxoma
New Mexico (University of New Mexico) - Atypical lipomatous tumor
New York (New York Stony Brook University Center Residents) - Aggressive angiomyxoma
New York (SUNY Downstate Medical Center) - Aggressive angiomyxoma
New York (Westchester Medical Center) - Aggressive angiomyxoma
North Carolina (Wake Forest University School of Medicine) - Aggressive angiomyxoma
North Carolina (Womack Army Medical Center) - Neurofibroma, myxoid variant (5)
Pennsylvania (Conemaugh Hospital) - Low grade fibromyxoid sarcoma
Pennsylvania (Drexel University of Medicine) - Aggressive angiomyxoma
Puerto Rico (University of Puerto Rico) - Aggressive angiomyxoma
Rhode Island (RI Hospital) - Neurofibroma
South Carolina (Hilton Head Hospital) - Vulva, malignant neoplasm consistent with sarcoma
Texas, Crystal Beach - Angiomyxoma (aggressive?)
Texas, Lubbock - Aggressive angiomyxoma
Washington, DC - Spindle cell lipoma
Wisconsin, Madison - Well-differentiated liposarcoma (vs. spindle cell lipoma)
West Virginia (WV University Hospital) - Myxoma
Australia (Sullivan Nicolaides Pathology) - Atypical lipomatous tumor/well-differentiated liposarcoma
Canada (Pasqua Hospital) - Neurofibroma
Canada (Sherbrooke University Hospital) - Low grade myxoid sarcoma
Japan (Asahi General Hospital) - Aggressive angiomyxoma
United Kingdom (Oxford Study Group) - Aggressive angiomyxoma

Case 4 - Diagnosis:

Aggressive angiomyxoma, scrotum
T-79400, M-88400

Case 4 - References:

Granter M, Nucci MR, Fletcher CD: Aggressive Angiomyxoma: Reappraised of Its Relationship to Angiomyofibroblastoma In a Series of 16 Cases. *Histopathology*, 1997; 30:3-10.
Manivel C, Steeper T, Swanson P, Wick JM: Aggressive Angiomyxoma Of The Pelvis: An Immunoperoxidase Study. *Lab Invest*, 1987; 56:46A.
Al-Omar M, Kwan K, Tweedie E, et al. Aggressive Angiomyxoma of the Epididymis. *Can J Urol* 2005; 12(4):2772-2773.
Chuang FP, Wu ST, Lee SS, et al. Aggressive Angiomyxoma of the Scrotum. *Arch Androl* 2002; 48(2):101-106.

Case No. 5 - Accession No. 30010 October, 2007 B

Glendale - Pigmented villonodular synovitis
Los Angeles (USC Medical Center) - Pigmented villonodular synovitis/tenosynovial giant cell tumor

Newport Beach - Granular cell tumor vs. reactive synovitis
San Diego (Naval Medical Center) - Pigmented villosynovial synovitis
San Francisco (University of California SF) - Pigmented villonodular synovitis
Woodland Hills (Woodland Hills Medical Center) - Synovitis (prosthesis related)
Alabama, Mt Olive - Particle disease secondary to polyethylene
Florida, Winter Park - Tenosynovitis due to failed orthopedic prosthetic device
Georgia, Decatur - Pigmented villonodular synovitis
Illinois (Heartland Regional Medical Center) - Synovial reactive histiocytic infiltrate with villous hypertrophy (foreign body reaction)
Illinois (Sarah Bush Lincoln Heath Center) - Detritic synovitis
Kansas (Coffeyville Regional Medical Center) - Diffuse tenosynovial giant cell tumor (pigmented villonodular synovitis)
Kansas (Peterson Laboratory Services) - Particle disease (granulomatous pseudotumor)
Kansas (Physicians Reference Laboratory) - Pigmented villonodular tenosynovitis
Las Vegas (Sunrise Hospital) - Detritic synovitis (Rxn to implant)
Massachusetts (Beverly Hospital) - Villonodular synovitis
Michigan (Henry Ford Hospital Residents Group) - Pigmented villonodular synovitis
Missouri (St. John's Regional Medical Center) - Diffuse tenosynovial giant cell tumor
New Mexico (University of New Mexico) - Pigmented villonodular synovitis
New York (New York Stony Brook University Center-Residents) - Pigmented villonodular synovitis
New York (SUNY Downstate Medical Center) - Pigmented villonodular synovitis
New York (Westchester Medical Center) - Villonodular synovitis
North Carolina (Wake Forest University School of Medicine) - Giant cell tumor of tendon sheath
North Carolina (Womack Army Medical Center) - Pigmented villonodular synovitis (5)
Pennsylvania (Conemaugh Hospital) - Pigmented villonodular synovitis
Pennsylvania (Drexel University of Medicine) - Pigmented nodular villous synovitis
Puerto Rico (University of Puerto Rico) - Tenosynovial giant cell tumor
Rhode Island (RI Hospital) - Giant cell tumor of tendon sheath, diffuse type
South Carolina (Hilton Head Hospital) - Brenner tumor, ovary
Texas, Crystal Beach - Villonodular synovitis
Texas, Lubbock - Pigmented villonodular synovitis
Washington, DC - Giant cell tumor of tendon sheath
Wisconsin, Madison - Villonodular synovitis
West Virginia (WV University Hospital) - Pseudo diffuse villonodular synovitis
Australia (Sullivan Nicolaides Pathology) - Detritic synovitis
Canada (Pasqua Hospital) - Histiocytic reaction to foreign material
Canada (Sherbrooke University Hospital) - Tenosynovial giant cell tumor
Japan (Asahi General Hospital) - Pigmented villonodular synovitis
United Kingdom (Oxford Study Group) - Pigmented villonodular synovitis

Case 5 - Diagnosis:

Diffuse tenosynovial giant cell tumor (pigmented villonodular synovitis), knee
T-05145, M-Y9200

Case 5 - References:

Dursun M, Yilmaz S, Erer B, et al. Clinical Image. Pigmented Villonodular Synovitis of the Knee. *Arthritis Rheum* 2006; 54(11):3422.

Alford JW, Tashijian R and Terek RM. Pigmented Villonodular Synovitis of the Knee Presenting As Sciatica. *J Knee Surg* 2003; 16(3):182-184.

Gupta S and Mishra RS. Cytologic Appearance of Pigmented and Recurrent Diffuse Pigmented Villonodular Synovitis of the Knee. *Anta Cytol* 2002; 26(4):728-730.

Chin KR, Barr SJ, Winalski C, et al. Treatment of Advanced Primary and Recurrent Diffuse Pigmented Villonodular Synovitis of the Knee. *J Bone Joint Surg Am* 2002; 84-A(12):2192-2202.

Anazawa U, Hanaoka H, Shiraishi T, et al. Similarities Between Giant Cell Tumor of Bone, Giant Cell tumor of Tendon Sheath, and Pigmented Villonodular Synovitis Concerning Ultrastructural Cytochemical Features of Multinucleated giant Cells and Mononuclear Stromal Cells. *Ultrastruct Path* 2006; 30(3):151-158.

Case No. 6 - Accession No. 30317 **October, 2007 B**

Glendale - Myoepithelioma of soft tissue

Los Angeles (USC Medical Center) - Myxoid neurofibroma
Newport Beach - Myxoid neurofibroma
San Diego (Naval Medical Center) - Extraskeletal myxoid chondrosarcoma
San Francisco (University of California SF) - Nerve sheath myxoma
Woodland Hills (Woodland Hills Medical Center) - Nerve sheath myxoma
Alabama, Mt Olive - Soft tissue myoepithelioma
Georgia, Decatur - Extraskeletal myxoid chondrosarcoma
Illinois (Heartland Regional Medical Center) - Benign myxoid peripheral nerve sheath neoplasm
Illinois (Sarah Bush Lincoln Heath Center) - Chondroma vs. low grade chondrosarcoma
Kansas (Coffeyville Regional Medical Center) - Myxoid neurofibroma
Kansas (Peterson Laboratory Services) - Extraskeletal myxoid chondrosarcoma
Kansas (Physicians Reference Laboratory) - Myxochondroma
Las Vegas (Sunrise Hospital) - Myxoid neurofibroma
Massachusetts (Beverly Hospital) - ? chondroid lipoma
Michigan (Henry Ford Hospital Residents Group) - Low grade fibromyxoid sarcoma
Missouri (St. John's Regional Medical Center) - Myxoid neurofibroma
New Mexico (University of New Mexico) - Schwannoma
New York (New York Stony Brook University Center Residents) - Myxoid neurofibroma
New York (SUNY Downstate Medical Center) - Nerve sheath myxoma
New York (Westchester Medical Center) - Schwannoma
North Carolina (Wake Forest University School of Medicine) - Myoepithelial
North Carolina (Womack Army Medical Center) - Fibroma of tendon sheath (5)
Pennsylvania (Conemaugh Hospital) - Myxoid chondrosarcoma
Pennsylvania (Drexel University of Medicine) - Extraskeletal myxoid condroma
Rhode Island (RI Hospital) - Myoepithelioma
South Carolina (Hilton Head Hospital) - Dysgerminoma, ovary
Texas, Crystal Beach - Chondroma
Texas, Lubbock - Neurilemmoma
Washington, DC - Extraskeletal chondroma/soft tissue condroma
Wisconsin, Madison - Fibromatosis (dupuytren contracture)
West Virginia (WV University Hospital) - Neurofibroma
Australia (Sullivan Nicolaides Pathology) - Palmar fibromatosis/DDx neurofibroma
Canada (Pasqua Hospital) - Schwannoma
Canada (Sherbrooke University Hospital) - Schwannoma (myxoid)
Japan (Asahi General Hospital) - Extraskeletal chondroma
United Kingdom (Oxford Study Group) - Schwannoma

Case 6 - Diagnosis:

Benign peripheral nerve sheath tumor, palm
T-Y8740, M-95600

Case 6 - References:

Casdii GP, Scheithauer BW, Hirose T, et al: Cellular Schwannoma: A Clinicopathologic, DNA Flow Cytometric and Proliferation Marker Study of 70 Cases. *Cancer*, 1995; 75:1109-19.

Kindblom LG, Meis-Kingbloom JM, Havel G, Busch C: Benign Epithelioid Schwannoma. *Am J Surg Pathol*, 1998; 22(6):762-70.

Graadt van Roggen JF, Hogendoom PC and Fletcher CD. Myxoid Tumours of Soft Tissue. *Histopathol* 1999; 35(4):291-312.

Zamecnik M. Hybrid Neurofibroma/Schwannoma Versus Schwannoma with Antoni B Areas. *Histopathol* 1998; 32(5):405-410.

Case No. 7 - Accession No. 30246 October, 2007 B

Glendale - Dermatofibroma, cellular variant
Los Angeles (USC Medical Center) - Synovial sarcoma
Newport Beach - Hemangiopericytoma
San Diego (Naval Medical Center) - Hemangiopericytoma
San Francisco (University of California SF) - Angiomatoid fibrous histiocytoma
Woodland Hills (Woodland Hills Medical Center) - Hemangiopericytoma
Alabama, Mt Olive - Synovial sarcoma
Florida, Winter Park - ? monophasic synovial sarcoma
Georgia, Decatur - Aneursymal fibrous histiocytoma

Illinois (Heartland Regional Medical Center) - Subcutaneous fibrous histiocytoma
Illinois (Sarah Bush Lincoln Heath Center) - Monophasic synovial sarcoma vs. CD34, hemangiopericytoma
Kansas (Coffeyville Regional Medical Center) - Hemangiopericytoma
Kansas (Peterson Laboratory Services) - Monophasic synovial sarcoma
Kansas (Physicians Reference Laboratory) - Cellular benign fibrous histiocytoma
Las Vegas (Sunrise Hospital) - Hemangiopericytoma
Massachusetts (Beverly Hospital) - Hemangiopericytoma
Michigan (Henry Ford Hospital Residents Group) - Monophasic synovial sarcoma
Missouri (St. John's Regional Medical Center) - Subcutaneous fibrous histiocytoma
New Mexico (University of New Mexico) - Monophasic synovial sarcoma
New York (New York Stony Brook University Center Residents) - Hemangiopericytoma
New York (SUNY Downstate Medical Center) - Angiomatoid fibrous histiocytoma
New York (Westchester Medical Center) - Fibrous histiocytoma
North Carolina (Wake Forest University School of Medicine) - Benign fibrous histiocytoma
North Carolina (Womack Army Medical Center) - Malignant solitary fibrous tumor (5)
Pennsylvania (Conemaugh Hospital) - Fibrohistiocytoma with hemangiopericytic feature
Pennsylvania (Drexel University of Medicine) - Dermatofibroma
Rhode Island (RI Hospital) - Deep benign fibrous histiocytoma
South Carolina (Hilton Head Hospital) - Stromal tumor ? cellular fibrothecoma
Texas, Crystal Beach - Hemangiopericytoma
Texas, Lubbock - Fibrous histiocytoma
Washington, DC - Atypical fibrothecoma
Wisconsin, Madison - Hemangiopericytoma
West Virginia (WV University Hospital) - Monophasic synovial sarcoma
Australia (Sullivan Nicolaides Pathology) - Inflammatory myofibroblastic tumor
Canada (Pasqua Hospital) - Hemangiopericytoma
Canada (Sherbrooke University Hospital) - Solitary fibrous tumor (hemangiopericytoma-like pattern)
Japan (Asahi General Hospital) - Deep benign fibrous histiocytoma
United Kingdom (Oxford Study Group) - Hemangiopericytoma (5); Solitary fibrous tumor (2)

Case 7 - Diagnosis:

Low grade mesenchymal neoplasm, favor variant of fibrous histiocytoma, arm
T-Y8210, M-91501

Director's Note: The tumor was negative for CD34. (drc)

Case 7 - References:

Nappi O, Ritter JH, Bettinato G, Wick MR: Hemangiopericytoma: Histopathological Pattern Or Clinicopathologic Entity? *Semin Diag Pathol*, 1995; 12(3):221-32.
Kandal S, Ozmen S, Demir HY, et al. Aneurysmal Fibrous Histiocytoma of the Skin. A Rare Variant of Dermatofibroma. *Plast Reconstr Surg* 2005; 116(7):2050-2051.
Billings SD and Folpe AL. Cutaneous and Subcutaneous Fibrohistiocytic Tumors of Intermediate Malignancy. An Update. *Am J Dermatopathol* 2004; 26(2):141-155.

Case No. 8 - Accession No. 29017 October, 2007 B

Glendale - Ewing's/PNET
Los Angeles (USC Medical Center) - Ewing's sarcoma
Newport Beach - Ewing sarcoma/PNET
San Diego (Naval Medical Center) - PNET/Ewing's sarcoma
San Francisco (University of California SF) - Ewing's sarcoma
Woodland Hills (Woodland Hills Medical Center) - Favor PNET/Ewing (more immuno)
Alabama, Mt Olive - Desmoplastic small round cell tumor, treated
Florida, Winter Park - Extraskeletal ES/PNS
Georgia, Decatur - Atypical Ewing's sarcoma
Illinois (Heartland Regional Medical Center) - Primitive peripheral neuroectodermal tumor (PNET) (requires more immunostains)
Illinois (Sarah Bush Lincoln Heath Center) - Embryonal rhabdomyosarcoma vs. PNET/Ewing's sarcoma
Kansas (Coffeyville Regional Medical Center) - PPNET/Ewing's sarcoma
Kansas (Peterson Laboratory Services) - Extraskeletal Ewing's sarcoma
Kansas (Physicians Reference Laboratory) - PNET/Ewing's sarcoma

Las Vegas (Sunrise Hospital) - Ewing's sarcoma/PNET
Massachusetts (Beverly Hospital) - Ewing's sarcoma/PNET
Michigan (Henry Ford Hospital Residents Group) - Primitive neuroectodermal tumor (PNET)
Missouri (St. John's Regional Medical Center) - PPNET/Ewing's sarcoma
New Mexico (University of New Mexico) - Ewing sarcoma
New York (New York Stony Brook University Center Residents) - Ewing sarcoma/PNET
New York (SUNY Downstate Medical Center) - Atypical Ewing's sarcoma
New York (Westchester Medical Center) - Ewing's sarcoma/PNET
North Carolina (Wake Forest University School of Medicine) - Ewing' s sarcoma
North Carolina (Womack Army Medical Center) - Alveolar rhabdomyosarcoma (5)
Pennsylvania (Conemaugh Hospital) - Extrarenal rhabdoid tumor
Pennsylvania (Drexel University of Medicine) - Ewing's sarcoma
Rhode Island (RI Hospital) - PNET
South Carolina (Hilton Head Hospital) - Germ cell tumor, ovary
Texas, Crystal Beach - Malignant peripheral neuroectodermal tumor/Ewing
Texas, Lubbock - Ewing sarcoma
Washington, DC - PNEt urothelial rhabdoid features
Wisconsin, Madison - Ewing's sarcoma
West Virginia (WV University Hospital) - Precursor B-cell lymphoma
Australia (Sullivan Nicolaides Pathology) - Ewing's sarcoma/PNET
Canada (Pasqua Hospital) - Ewing's sarcoma
Canada (Sherbrooke University Hospital) - Ewing's tumor
Japan (Asahi General Hospital) - Poorly differentiated synovial sarcoma
United Kingdom (Oxford Study Group) - Ewing's/PNET (6); Rhabdomyosarcoma (2)

Case 8 - Diagnosis:

PNET/Ewing's sarcoma
T-Y1500, M-92603

Outside Consultation: Tim Triche, M.D.; Los Angeles Children's Hospital: "PNET/Ewing's sarcoma".

Case 8 - References:

Stevenson AJ, Chatten J, Bertoni F, et al: CD99 (p30/32) Neuroectodermal/Ewing's Sarcoma Antigen As An Immunohistochemical Marker: Review Of More Than 600 Tumors and the Literature Experience. *Appl Immunohistochem*, 1994; 2:231-40.

Gu M, Fantonescu CR, Guiter G, et al: Cytokeratin Immunoreactivity In Ewing's Sarcoma. Prevalence In 50 Cases Confirmed By Molecular Diagnostic Studies. *Am J Surg Pathol*, 2000; 24:410-16.

Tsuneyoshi M, Yokoyama R, Hashimoto H, et al: Comparative Study Of Neuroectodermal Tumor and Ewing's Sarcoma of Bone. Histopathologic, Immunohistochemical and Ultrastructural Features. *Acta Pathol Jpn*, 1989; 39:573-81.

Turc-Carel C, Aurias A, Mugneret F, et al: Chromosomes In Ewing's Sarcoma. An Evaluation Of 85 Cases of Remarkable Consistency of t(11-22) (q24;q12). *Cancer Genet Cytogenet*, 1998; 32:229-38.

Moll R, Lee I, Gould VE, et al: Immunocytochemical Analysis Of Ewing's Tumors. Patterns Of Expression of Intermediate Filaments and Desmosomal Proteins Indicate Cell Type Heterogeneity in Primitive Neuroectodermal Tumors of Childhood. *Am J Surg Pathol*, 1987; 127:288-304.

Case No. 9 - Accession No. 30268 October, 2007 B

Glendale - Desmoplastic small round cell tumor
Los Angeles (USC Medical Center) - Desmoplastic small round cell tumor
Newport Beach - Granulosa cell tumor, malignant
San Diego (Naval Medical Center) - Desmoplastic small round cell tumor
San Francisco (University of California SF) - Desmoplastic small round blue cell tumor
Woodland Hills (Woodland Hills Medical Center) - Small cell carcinoma of ovary
Alabama, Mt Olive - Small cell carcinoma, hypercalcemic type
Florida, Winter Park - Desmoplastic round cell tumor
Georgia, Decatur - Desmoplastic small round cell tumor
Illinois (Heartland Regional Medical Center) - Small cell anaplastic carcinoma (with "pulmonary differentiation")
Illinois (Sarah Bush Lincoln Heath Center) - High grade carcinoma
Kansas (Coffeyville Regional Medical Center) - Poorly differentiated malignant Brenner tumor
Kansas (Peterson Laboratory Services) - Desmoplastic small round cell tumor

Kansas (Physicians Reference Laboratory) - Desmoplastic small round cell tumor
Las Vegas (Sunrise Hospital) - Desmoplastic small round cell tumor
Massachusetts (Beverly Hospital) - Small cell carcinoma, hypercalcemia type
Michigan (Henry Ford Hospital Residents Group) - Desmoplastic small round cell tumor
Missouri (St. John's Regional Medical Center) - Desmoplastic small cell tumor
New Mexico (University of New Mexico) - Desmoplastic small round cell tumor
New York (New York Stony Brook University Center Residents) - Desmoplastic small round cell tumor
New York (SUNY Downstate Medical Center) - Desmoplastic small round blue cell tumor
New York (Westchester Medical Center) - Desmoplastic round cell tumor
North Carolina (Wake Forest University School of Medicine) - Desmoplastic small round cell tumor
North Carolina (Womack Army Medical Center) - Rhabdomyosarcoma (5)
Pennsylvania (Conemaugh Hospital) - Desmoplastic small round cell tumor
Pennsylvania (Drexel University of Medicine) - Small cell carcinoma of ovary
Rhode Island (RI Hospital) - Desmoplastic small round cell tumor
South Carolina (Hilton Head Hospital) - Sarcoma, uterus
Texas, Crystal Beach - Small cell carcinoma
Texas, Lubbock - Undifferentiated small cell carcinoma
Washington, DC - Desmoplastic small round cell tumor
Wisconsin, Madison - Desmoplastic small cell tumor -
West Virginia (WV University Hospital) - Desmoplastic small round cell tumor
Australia (Sullivan Nicolaides Pathology) - Desmoplastic small round cell tumor
Canada (Pasqua Hospital) - Desmoplastic small round cell tumor
Canada (Sherbrooke University Hospital) - Desmoplastic small cell tumor
Japan (Asahi General Hospital) - Malignant Brenner tumor
United Kingdom (Oxford Study Group) - Desmoplastic small round cell tumor

Case 9 - Diagnosis:

Desmoplastic small round cell tumor, ovaries
T-87000, M-49000

Outside Consultation: Stanford University: "Desmoplastic small round cell tumor."

Case 9 - References:

Young R: Ovarian Involvement By the Intra-Abdominal Desmoplastic Small Round Cell Tumor with Divergent Differentiation. *Hum Pathol*, 1992; 23:454-64.
Gerald WL, Rosai J, Ladanyi M: Characterization Of Genomic Break Point And Chimeric Transcripts In EWS-WT1 Gene Fusion Of Desmoplastic Small Round Cell Tumor. *Proc Natl Acad Sci USA*, 1995; 92:1028-1032.
Kushner BH, La Quaglia MP, Wallner N, et al: Desmoplastic Small Round Cell Tumor: Prolonged Progressive-Free Survival With Aggressive Multimodality Therapy. *J Clin Oncol*, 1996; 14:1526-31.
Leuschner I, Radig K, Harmes D: Desmoplastic Small Round Cell Tumor. *Semin Diagn Pathol*, 1996; 13:204-12.
Ordonez NG: Desmoplastic Small Round Cell Tumor: I. A Histopathologic Study of 39 Cases With Emphasis On Unusual Histological Patterns. *Am J Surg Pathol*, 1998; 22(11):1303-13.

Case No. 10 - Accession No. 30230 October, 2007 B

Glendale - Embryonal rhabdomyosarcoma, anaplastic variant
Los Angeles (USC Medical Center) - Embryonal rhabdomyosarcoma
Newport Beach - Rhabdomyosarcoma
San Diego (Naval Medical Center) - Rhabdomyosarcoma
San Francisco (University of California SF) - Rhabdomyosarcoma, embryonal
Woodland Hills (Woodland Hills Medical Center) - Rhabdomyosarcoma, pleomorphic type
Alabama, Mt Olive - Embryonal rhabdomyosarcoma
Florida, Winter Park - Embryonal rhabdomyosarcoma
Georgia, Decatur - High grade sarcoma, rule out intimal sarcoma
Illinois (Heartland Regional Medical Center) - Rhabdomyosarcoma, favor pleomorphic type
Illinois (Sarah Bush Lincoln Heath Center) - Alveolar rhabdomyosarcoma
Kansas (Coffeyville Regional Medical Center) - Rhabdomyosarcoma
Kansas (Peterson Laboratory Services) - Rhabdomyosarcoma
Kansas (Physicians Reference Laboratory) - Embryonal rhabdomyosarcoma
Las Vegas (Sunrise Hospital) - Embryonal rhabdomyosarcoma

Massachusetts (Beverly Hospital) - Embryonal rhabdomyosarcoma
Michigan (Henry Ford Hospital Residents Group) - Pleomorphic rhabdomyosarcoma
Missouri (St. John's Regional Medical Center) - Pleomorphic rhabdomyosarcoma
New Mexico (University of New Mexico) - Pleomorphic rhabdomyosarcoma
New York (New York Stony Brook University Center Residents) - Rhabdomyosarcoma
New York (SUNY Downstate Medical Center) - Pleomorphic rhabdomyosarcoma
New York (Westchester Medical Center) - Pleomorphic rhabdomyosarcoma
North Carolina (Wake Forest University School of Medicine) - Embryonal rhabdomyosarcoma
North Carolina (Womack Army Medical Center) - Embryonal rhabdomyosarcoma (5)
Pennsylvania (Conemaugh Hospital) - Rhabdomyosarcoma
Pennsylvania (Drexel University of Medicine) - Rhabdomyosarcoma, embryonal type
Rhode Island (RI Hospital) - Embryonal rhabdomyosarcoma
South Carolina (Hilton Head Hospital) - Epithelial neoplasm
Texas, Crystal Beach - Malignant Teiton tumor
Texas, Lubbock - Embryonal rhabdomyosarcoma
Washington, DC - Rhabdomyosarcoma, embryonal
Wisconsin, Madison - Rhabdomyosarcoma
West Virginia (WV University Hospital) - Rhabdomyosarcoma
Australia (Sullivan Nicolaides Pathology) - Embryonal rhabdomyosarcoma
Canada (Pasqua Hospital) - Rhabdomyosarcoma
Canada (Sherbrooke University Hospital) - Rhabdomyosarcoma
Japan (Asahi General Hospital) - Rhabdomyosarcoma
United Kingdom (Oxford Study Group) - Pleomorphic rhabdomyosarcoma

Case 10 - Diagnosis:

Pleomorphic rhabdomyosarcoma, intrathoracic/mediastinum
T-Y2200, M-89003

Outside Consultation: Andre Oliveira, M.D., Mayo Clinic Rochester: "High grade spindle cell sarcoma, most consistent with MPNST".

Case 10 - References:

Newton WA Jr, Gehan EA, Webber BL, et al: Classification Of Rhabdomyosarcomas and Related Sarcomas: Pathologic Aspects and Proposal for a New Classification. *Inter Group Rhabdomyosarcoma Study*, 1995; 76:1073-85.

Sorenson PH, Lynch JC, Qualman SJ, et al: PAX3-FKHR and PAX7-FKHR Gene Fusions Are Prognostic Indicators In Alveolar Rhabdomyosarcoma: A Report From The Children's Oncology Group. *J Clin Oncol*, 2002; 20:2672-79.

LaQualia MP, Heller G, Ghavimi F, et al: The Effect of Age At Diagnosis On Outcome In Rhabdomyosarcoma. *Cancer*, 1994; 73:109-17.

Hollowood K, Fletcher CDM: Rhabdomyosarcoma In Adults. *Semin Diagn Pathol*, 1994; 47-57.