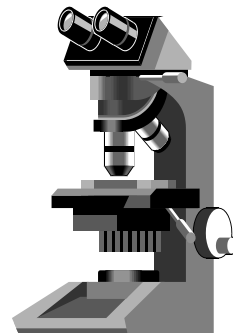


CALIFORNIA
TUMOR TISSUE REGISTRY

ENDOCRINE PATHOLOGY

Minutes – Subscription A

November, 2004



SUGGESTED READING (General Topics from Recent Literature):

Studies Show Tissues Surrounding Tumors Have a Role in Cancer Progression. Hampton, T, Ph.D. *JAMA* 2004; 291(20):2417-2418.

Translating Cancer Genomics into Clinical Oncology. Ramaswamy S. *N Engl J Med* 2004; 350:1814-1816.

Cystic Neoplasms of the Pancreas. Brugge WR, Lauwers GY, et al. *N Engl J Med* 2004; 351.

Cytokeratin 19 is a Powerful Predictor of Survival in Pancreatic Endocrine Tumors. Deshpande V, Fernandez-del Castillo c, et al. *Am J Surg Pathol* 2004; 28:1145-1153.

Secondary Syphilis. A Histologic and Immunohistochemical Evaluation. Hoang MP, High WA and Molberg KH. *J Cutan Pathol* 2004; 31:595-599.

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

FILE DIAGNOSES

(If possible, submit answers on website at www.cttr.org.
Click “subscriptions”, then click submit answers”.)

Case 1:

Hurthle cell adenoma, thyroid
T-96200, M-82900

Case 2:

Papillary carcinoma, thyroid
T-96100, M-80503

Case 3:

Papillary carcinoma, tall cell (predominantly) and follicular cell variants, thyroid
T-87000, M-80503

Case 4:

Medullary carcinoma, thyroid
T-96000, M-85103

Case 5:

Poorly differentiated carcinoma with neuroendocrine features, thyroid
T-96000, M-80103

Case 6:

Anaplastic carcinoma with squamous and spindle cell features, thyroid
T-96000, M-80123

Case 7:

Pancreatic endocrine neoplasm
T-59000, M-80001

Case 8:

Solid-pseudopapillary tumor, pancreas
T-59000, M-80001

Case 9:

Malignant adrenal neoplasm (favor cortical carcinoma) with multiple pulmonary metastasis
T-28000, M-83703

Case 10:

Pheochromocytoma, adrenal
T-93000, M-87000

Case Submissions by Study Group

Case No. 1 Accession No. 29413

November 2004

Alameda (Alameda County Medical Center) - Oncocytic adenoma (Hurthle cell adenoma)
Baldwin Park (Kaiser Permanente) - Follicular adenoma with Hurthle cell features (1); Follicular adenoma, thyroid (1)
Fontana (Kaiser Permanente) - Follicular adenoma
Glendale - Hurthle cell nodule
Hayward/Fremont - Hurthle cell adenoma, benign, thyroid
Irvine (University of California) - Hurthle cell adenoma
Loma Linda (Loma Linda University Residents) - Hurthle cell adenoma
Long Beach - Hurthle cell adenoma (7)
Los Angeles (USC Residents) - Hurthle cell adenoma
Monterey Park (Garfield Hospital) - Benign oncocytoma
Monterey (Monterey Peninsula Pathologists) - Follicular adenoma
Mountain View (El Camino Pathology Group) - Hurthle cell adenoma
Oakland (Kaiser Permanente) - Hurthle cell adenoma
San Diego (Naval Medical Center) - Hurthle cell adenoma
San Francisco (SF General Hospital) - Follicular adenoma with Hurthle cell features
Santa Rosa (Santa Rosa Memorial Hospital) - Hurthle cell tumor (3)
Ventura - Follicular adenoma (2)
Arizona (Maryvale Medical Center) - Hurthle cell neoplasm, favor carcinoma
Arkansas (University of Arkansas Medical Center) - Hurthle cell adenoma, thyroid
Colorado (Lutheran Medical Center) - Hurthle cell adenoma
Connecticut (Naval Medical Hospital) - Follicular adenoma with oncocytic features
Florida (Tallahassee) - Follicular adenoma
Florida (Winter Haven Hospital) - Follicular adenoma
Illinois - Follicular adenoma, Hurthle cell variant
Illinois (Evanston Hospital) - Hurthle cell adenoma
Illinois (Northwestern Memorial Hospital) - Hurthle cell adenoma of thyroid
Indiana (Howard Community Hospital) - Neuroendocrine adenoma
Louisiana (Louisiana State University Medical Center) - Hurthle (oncocytic) cell adenoma
Maryland (Bethesda Naval Medical Center) - Follicular adenoma with Hurthle cell (oxyphilic) features
Maryland (Johns Hopkins Hospital Residents) - Hurthle cell adenoma
Maryland (University of Maryland) - Hurthle cell neoplasm tumor
Massachusetts (Berkshire Medical Center) - Hurthle cell adenoma
Michigan (Oakwood Hospital) - Hurthle cell adenoma
Michigan (Pathology Services) - Follicular adenoma of thyroid
Minnesota (University of Minnesota Residents) - Hurthle cell neoplasm
Nevada - Hurthle cell adenoma
New York (Long Island Jewish Medical Center) - Hurthle cell adenoma
New York (Nassau University Medical Center) - Oncocytoma
New York (Stony Brook University Hospital Residents) - Hurthle cell adenoma
New York (Westchester Medical Center) - Follicular adenoma, Hurthle cell type
North Carolina (Mountain Area Pathology) - Follicular adenoma (2); Hurthle cell adenoma (1)
Michigan - Hurthle cell adenoma
Ohio (Medical College of Ohio) - Hurthle cell adenoma
Ohio (McCullough-Hyde Memorial Hospital) - Hurthle cell tumor
Pennsylvania (Allegheny General Hospital) - Hurthle cell neoplasm of uncertain malignant potential
Pennsylvania (Lehigh Valley Hospital) - Hurthle cell adenoma
Pennsylvania (Mt. Nittany Medical Center) - Hurthle cell adenoma of the thyroid gland
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Hurthle cell adenoma
Puerto Rico (University of Puerto Rico) - Hurthle cell tumor/papillary oncocytic

Texas - Hurthle cell adenoma
Texas (ProPath Associates) - Hurthle cell tumor (2)
Texas (Scott & White Memorial Hospital) - Hurthle cell adenoma
West Virginia (Greenbrier Valley Medical Center) - Oncocytic neoplasm
Wisconsin - Follicular adenoma
Wisconsin (Bellin Hospital) - Hurthle cell adenoma
Wisconsin (Meriter Hospital) - Hurthle cell adenoma
Australia (Royal Prince Alfred Hospital) - Hurthle cell adenoma
Brazil (UNIFESP/EPM) - Medullary carcinoma, oncocytic (2)
Canada (Foothills Medical Center) - Hurthle cell adenoma
Canada (Woodstock General Hospital) - Hurthle cell adenoma
Italy, Naples - Hurthle cell adenoma
Jamaica (University Hospital of West Indies) - Hurthle cell adenoma
Netherlands, Amsterdam - Thyroid adenoma (Hurthle cell)
Saudi Arabia (King Khalid University) - Hurthle cell adenoma

Case 1 - Diagnosis:

Hurthle cell adenoma, thyroid
 T-96200, M-82900

Case 1 – References:

Desai A, Peterson SE, Raiser F 3rd, Marx RJ, et al. Hurthle Cell adenoma Diagnosed by Core Needle Biopsy in a Male Patient. *J Am Osteopath Assoc* 2000; 100(4):232-233.
 Hoos A Stojadinovic A, Singh B, et al. Clinical Significance of Molecular Expression Profiles Hurthle Cell Tumors of the Thyroid Gland Analyzed Via Tissue Microarrays. *Am J Pathol* 2002; 160(1):175-183.
 Sugino K, Ito K, Mimura T, et al. Hurthle Cell Tumor of the Thyroid. Analysis of 188 Cases. *World J Surg* 2001; 25(9):1160-1163.
 Lopez-Penabad I, Chiu AC, et al. Prognostic Factors in Patients with Hurthle Cell Neoplasms of the Thyroid. *Cancer* 2003; 97(5):1186-1194.
 Chiappetta G, Toti P, Cetta F, et al. The RET/PTC Oncogene is frequently Activated in Oncocytic Thyroid Tumors (Hurthle Cell Adenomas and Carcinomas), But Not in Oncocytic Hyperplastic Lesions. *J Clin Endocrinol Metab* 2002; 87(1):364-369.

Case No. 2 Accession No. 29597

November 2004

Alameda (Alameda County Medical Center) - Papillary carcinoma
Baldwin Park (Kaiser Permanente) - Multinodular goiter with adenomatous nodule (1); Papillary carcinoma thyroid (1)
Fontana (Kaiser Permanente) - Papillary hyperplasia
Glendale - Papillary hyperplasia
Hayward/Fremont - Papillary carcinoma, thyroid
Irvine (University of California) - Hyperplastic papillary adenoma
Loma Linda (Loma Linda University Residents) - Papillary carcinoma of the thyroid
Long Beach - Papillary carcinoma (7)
Los Angeles (USC Residents) - Papillary neoplasm/papillary carcinoma
Monterey Park (Garfield Hospital) - Papillary thyroid carcinoma
Monterey (Monterey Peninsula Pathologists) - Papillary carcinoma (? columnar/tall cell)
Mountain View (El Camino Pathology Group) - Columnar cell carcinoma vs. “tall cell” papillary carcinoma
Oakland (Kaiser Permanente) - Papillary hyperplasia/adenoma
San Diego (Naval Medical Center) - Papillary hyperplastic nodule
San Francisco (SF General Hospital) - Follicular adenoma with papillary hyperplasia
Santa Rosa (Santa Rosa Memorial Hospital) - Papillary carcinoma
Ventura - Papillary carcinoma (2)
Arizona (Maryvale Medical Center) - Papillary carcinoma, tall cell variant
Arkansas (University of Arkansas Medical Center) - Follicular adenoma, thyroid
Colorado (Lutheran Medical Center) - Papillary carcinoma, encapsulated variant
Connecticut (Naval Medical Hospital) - Follicular carcinoma

Florida (Tallahassee) - Nodular hyperplasia
Florida (Winter Haven Hospital) - Follicular adenoma with papillary hyperplasia
Illinois - Adenoma with papillary transformation
Illinois (Evanston Hospital) - Papillary variant of follicular adenoma
Illinois (Northwestern Memorial Hospital) - Papillary carcinoma
Indiana (Howard Community Hospital) - Papillary carcinoma, well-differentiated
Louisiana (Louisiana State University Medical Center) - Papillary adenomatous nodule
Maryland (Bethesda Naval Medical Center) - Papillary thyroid carcinoma, favor columnar/tall cell variant
Maryland (Johns Hopkins Hospital Residents) - Papillary thyroid carcinoma, tall cell variant
Maryland (University of Maryland) - Probably an encapsulated variant, papillary carcinoma (tall cell variant), needs non-frozen section to evaluate nuclear features vs. follicular adenoma
Massachusetts (Berkshire Medical Center) - Papillary carcinoma (tall cell variant)
Michigan (Oakwood Hospital) - Papillary hyperplasia in a follicular nodule
Michigan (Pathology Services) - Papillary carcinoma
Minnesota (University of Minnesota Residents) - Papillary thyroid carcinoma
Nevada - Follicular adenoma with papillary morphology
New York (Long Island Jewish Medical Center) - Well-differentiated papillary carcinoma
New York (Nassau University Medical Center) - Papillary carcinoma of thyroid
New York (Stony Brook University Hospital Residents) - Adenoma with papillary features
New York (Westchester Medical Center) - Papillary hyperplasia
North Carolina (Mountain Area Pathology) - Follicular adenoma (2); Papillary carcinoma (1)
Michigan - Papillary thyroid carcinoma, tall cell variant
Ohio (Medical College of Ohio) - Papillary nodular hyperplasia
Ohio (McCullough-Hyde Memorial Hospital) - Follicular adenoma with papillary architecture
Pennsylvania (Allegheny General Hospital) - Papillary thyroid lesion
Pennsylvania (Lehigh Valley Hospital) - Papillary carcinoma
Pennsylvania (Mt. Nittany Medical Center) - Follicular carcinoma of the thyroid gland
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Follicular carcinoma, papillary variant
Puerto Rico (University of Puerto Rico) - Papillary carcinoma
Texas - Papillary carcinoma (tall cell variant)
Texas (ProPath Associates) - Well-differentiated papillary adenocarcinoma of thyroid (2)
Texas (Scott & White Memorial Hospital) - Adenoma with papillary hyperplasia
West Virginia (Greenbrier Valley Medical Center) - Papillary carcinoma
Wisconsin - Hyperplastic adenomatous nodule
Wisconsin (Bellin Hospital) - Papillary thyroid carcinoma, tall cell variant
Wisconsin (Meriter Hospital) - Papillary carcinoma
Australia (Royal Prince Alfred Hospital) - Papillary carcinoma of thyroid
Brazil (UNIFESP/EPM) - Nodular hyperplasia with benign papillary formations (2)
Canada (Foothills Medical Center) - Papillary carcinoma, columnar cell variant
Canada (Woodstock General Hospital) - Papillary carcinoma of thyroid, follicular variant
Italy, Naples - Papillary carcinoma
Jamaica (University Hospital of West Indies) - Papillary carcinoma of the thyroid
Netherlands, Amsterdam - Papillary thyroid carcinoma (?); (lacking Orphan Annie eyes)
Saudi Arabia (King Khalid University) - ? Tall cell variant of papillary thyroid carcinoma

Case 2 - Diagnosis:

Papillary carcinoma, thyroid
 T-96100, M-80503

(Director's note: Malignancy was diagnosed largely on a cytologic basis (grooves, occasional clearing, etc.) Some slides also showed capsular penetration. drc)

Case 2 - References:

Kilicarslan AB, Ogus M, Arici C, et al. Clinical Importance of Vascular Endothelial Growth Factor (VEGF) for Papillary Thyroid Carcinomas. *APMIS* 2003; 111(3):439-443.

Goldstein RE. Current Management of Epithelial Thyroid Neoplasms. *J Ky Med Assoc* 2003; 101(5):188-198.
 Klugbauer S and Rabes HM. The Transcription Coactivator HTIF1 and a Related Protein are Fused to the RET Receptor Tyrosine Kinase in Childhood Papillary Thyroid Carcinomas. *Oncog* 1999; 18(30):4388-4393.
 Khurana KK, Truong LD, LiVolsi VA, et al. Cytokeratin 19 Immunolocalization in Cell Block Preparation of Thyroid Aspirates. An Adjunct to Fine-Needle Aspiration Diagnosis of Papillary Thyroid Carcinoma. *Arch Pathol Lab Med* 2003; 127(5):579-583.
 Muzaffar M, Nigar E, Mushtaq S, et al. The Morphological Variants of Papillary Carcinoma of the Thyroid. A Clinico-Pathological Study –AFIP Experience. *Armed Forces Institute of Pathology. J Pak Med Assoc* 1998; 48(5):133-137.

Case No. 3 Accession No. 29664

November 2004

Alameda (Alameda County Medical Center) - Papillary carcinoma, tall cell variant
Baldwin Park (Kaiser Permanente) - Papillary carcinoma of the thyroid (2)
Fontana (Kaiser Permanente) - Papillary carcinoma
Glendale - Papillary carcinoma, tall cell variant
Hayward/Fremont - Papillary carcinoma, thyroid, diffuse sclerosing variant
Irvine (University of California) - Papillary carcinoma with exuberant nodular fasciitis-like stroma
Loma Linda (Loma Linda University Residents) - Undifferentiated carcinoma with residual papillary carcinoma of the thyroid
Long Beach - Papillary carcinoma (7)
Los Angeles (USC Residents) - Papillary carcinoma, tall cell variant
Monterey Park (Garfield Hospital) - Papillary carcinoma, follicular variant
Monterey (Monterey Peninsula Pathologists) - Papillary carcinoma (high grade)
Mountain View (El Camino Pathology Group) - Sclerosing papillary carcinoma with tall cell features
Oakland (Kaiser Permanente) - Papillary carcinoma, columnar cell variant
San Diego (Naval Medical Center) - Diffuse sclerosing papillary thyroid carcinoma
San Francisco (SF General Hospital) - Columnar cell carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Papillary carcinoma (3)
Ventura - Papillary carcinoma (2)
Arizona (Maryvale Medical Center) - Papillary carcinoma mixed tall cell and follicular variants
Arkansas (University of Arkansas Medical Center) - Papillary carcinoma, thyroid
Colorado (Lutheran Medical Center) - Papillary carcinoma, diffuse sclerosing variant
Connecticut (Naval Medical Hospital) - Papillary carcinoma
Florida (Tallahassee) - Papillary carcinoma, diffuse sclerosing variant
Florida (Winter Haven Hospital) - Invasive papillary carcinoma
Illinois - Papillary carcinoma
Illinois (Evanston Hospital) - Papillary carcinoma
Illinois (Northwestern Memorial Hospital) - Papillary carcinoma of thyroid sclerosing type
Indiana (Howard Community Hospital) - Papillary carcinoma
Louisiana (Louisiana State University Medical Center) - Papillary thyroid carcinoma
Maryland (Bethesda Naval Medical Center) - Papillary carcinoma, favor diffuse sclerosing variant
Maryland (Johns Hopkins Hospital Residents) - Papillary thyroid carcinoma
Maryland (University of Maryland) - Papillary carcinoma, sclerosing type
Massachusetts (Berkshire Medical Center) - Papillary carcinoma (sclerosing variant)
Michigan (Oakwood Hospital) - Papillary thyroid carcinoma
Michigan (Pathology Services) - Papillary carcinoma
Minnesota (University of Minnesota Residents) - Papillary thyroid carcinoma
Nevada - Papillary carcinoma
New York (Long Island Jewish Medical Center) - Invasive papillary carcinoma
New York (Nassau University Medical Center) - Columnar cell variant of papillary carcinoma
New York (Stony Brook University Hospital Residents) - Papillary carcinoma with desmoplastic response and involvement of intrathyroid parathyroid gland
New York (Westchester Medical Center) - Mucinous adenocarcinoma favor metastasis from lung
North Carolina (Mountain Area Pathology) - Papillary carcinoma (3)

Michigan - Metastatic adenocarcinoma
Ohio (Medical College of Ohio) - Papillary thyroid carcinoma, diffuse sclerosing variant
Ohio (McCullough-Hyde Memorial Hospital) - Papillary carcinoma
Pennsylvania (Allegheny General Hospital) - Sclerosing variant of papillary carcinoma
Pennsylvania (Lehigh Valley Hospital) - Papillary carcinoma
Pennsylvania (Mt. Nittany Medical Center) - Papillary carcinoma, diffuse sclerosing variant of the thyroid gland
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Papillary carcinoma
Puerto Rico (University of Puerto Rico) - Papillary carcinoma with sclerosis
Texas - Papillary carcinoma
Texas (ProPath Associates) - Sclerosing papillary adenocarcinoma of thyroid (2)
Texas (Scott & White Memorial Hospital) - Papillary carcinoma
West Virginia (Greenbrier Valley Medical Center) - Papillary carcinoma, follicular variant
Wisconsin - Papillary thyroid carcinoma
Wisconsin (Bellin Hospital) - High grade papillary carcinoma
Wisconsin (Meriter Hospital) - Papillary carcinoma, sclerosing type
Australia (Royal Prince Alfred Hospital) - Invasive papillary carcinoma of thyroid, tall cell variant
Brazil (UNIFESP/EPM) - Papillary carcinoma with exuberant nodular fasciitis-like stroma (2)
Canada (Foothills Medical Center) - Papillary carcinoma, tall cell variant
Canada (Woodstock General Hospital) - Papillary carcinoma of thyroid, tall cell variant
Italy, Naples - Diffuse sclerosing papillary carcinoma
Jamaica (University Hospital of West Indies) - Papillary carcinoma of the thyroid with transformation into poorly differentiated insular carcinoma
Netherlands, Amsterdam - Classical papillary thyroid carcinoma
Saudi Arabia (King Khalid University) - Papillary thyroid carcinoma, diffuse sclerosing variant

Case 3 – Diagnosis:

Papillary carcinoma, tall cell (predominantly) and follicular cell variants, thyroid
 T-87000, M-80503

Case 3 - References:

Ito Y, Yoshida H, Uruno T, et al. KA11 Expression in Thyroid Neoplasms. Its Linkage with Clinicopathologic Features in Papillary Carcinoma. *Pathol Res Pract* 2003; 199(2):79-83.
 Fadare O and Sinard JH. Glandular Patterns in a Thyroid Carcinoma with Insular and Anaplastic Features. A Case with Possible Implications for the Classification of Thyroid Carcinomas. *Ann Diagn Pathol* 2002; 6(6):389-398.
 Wreesmann VB, Ghossein RA, Patel SG, et al. Genome-Wide Appraisal of Thyroid Cancer Progression. *Am J Pathol* 2002; 161(5):1549-1556.
 Cortese F, Boffo V, Gargiani M, et al. Tall Cell Variant of Papillary Thyroid Cancer. *J Exp Clin Cancer Res* 1998; 17(4):523-526.
 Kitajiri SI, Hiraumi H, Hirose T, et al. The Presence of Large Lymph Node Metastasis as a Prognostic Factor of Papillary Thyroid Carcinoma. *Auris Nasus Larynx* 2003; 30(2):169-174.

Case No. 4 Accession No. 30148

November 2004

Alameda (Alameda County Medical Center) - Medullary carcinoma
Baldwin Park (Kaiser Permanente) - Medullary carcinoma (2)
Fontana (Kaiser Permanente) - Medullary carcinoma
Glendale - Medullary carcinoma
Hayward/Fremont - Medullary carcinoma with amyloid stroma
Irvine (University of California) - Medullary carcinoma
Loma Linda (Loma Linda University Residents) - Medullary carcinoma of the thyroid
Long Beach - Medullary carcinoma (7)
Los Angeles (USC Residents) - Medullary carcinoma
Monterey Park (Garfield Hospital) - Medullary carcinoma consistent with myloid
Monterey (Monterey Peninsula Pathologists) - Medullary carcinoma
Mountain View (El Camino Pathology Group) - Medullary carcinoma

[Oakland \(Kaiser Permanente\)](#) - Medullary carcinoma
[San Diego \(Naval Medical Center\)](#) - Medullary thyroid carcinoma
[San Francisco \(SF General Hospital\)](#) - Medullary carcinoma
[Santa Rosa \(Santa Rosa Memorial Hospital\)](#) - Medullary carcinoma (3)
[Ventura](#) - Medullary carcinoma (2)
[Arizona \(Maryvale Medical Center\)](#) - Medullary carcinoma, medial calcific sclerosis of arterial vessels
[Arkansas \(University of Arkansas Medical Center\)](#) - Medullary carcinoma, thyroid
[Colorado \(Lutheran Medical Center\)](#) - Medullary carcinoma
[Connecticut \(Naval Medical Hospital\)](#) - Medullary thyroid carcinoma
[Florida \(Tallahassee\)](#) - Medullary carcinoma
[Florida \(Winter Haven Hospital\)](#) - Medullary carcinoma
[Illinois](#) - Medullary carcinoma
[Illinois \(Evanston Hospital\)](#) - Medullary carcinoma
[Illinois \(Northwestern Memorial Hospital\)](#) - Medullary carcinoma of thyroid
[Indiana \(Howard Community Hospital\)](#) - Medullary carcinoma
[Louisiana \(Louisiana State University Medical Center\)](#) - Medullary follicular carcinoma (thyroglobulin positive)
[Maryland \(Bethesda Naval Medical Center\)](#) - Medullary carcinoma
[Maryland \(Johns Hopkins Hospital Residents\)](#) - Medullary carcinoma
[Maryland \(University of Maryland\)](#) - Medullary carcinoma
[Massachusetts \(Berkshire Medical Center\)](#) - Medullary carcinoma
[Michigan \(Oakwood Hospital\)](#) - Medullary thyroid carcinoma
[Michigan \(Pathology Services\)](#) - Medullary carcinoma
[Minnesota \(University of Minnesota Residents\)](#) - Medullary thyroid carcinoma (4); Mixed medullary and follicular thyroid carcinoma (2)
[Nevada](#) - Medullary carcinoma
[New York \(Long Island Jewish Medical Center\)](#) - Medullary carcinoma
[New York \(Nassau University Medical Center\)](#) - Medullary carcinoma
[New York \(Stony Brook University Hospital Residents\)](#) - Medullary carcinoma
[New York \(Westchester Medical Center\)](#) - Medullary carcinoma
[North Carolina \(Mountain Area Pathology\)](#) - Medullary carcinoma (3)
[Michigan](#) - Medullary carcinoma
[Ohio \(Medical College of Ohio\)](#) - Medullary thyroid carcinoma
[Ohio \(McCullough-Hyde Memorial Hospital\)](#) - Medullary carcinoma
[Pennsylvania \(Allegheny General Hospital\)](#) - Medullary carcinoma
[Pennsylvania \(Lehigh Valley Hospital\)](#) - Medullary carcinoma
[Pennsylvania \(Mt. Nittany Medical Center\)](#) - Medullary carcinoma with amyloid production, of the thyroid gland
[Pennsylvania \(Pennsylvania Hospital Pathology Residents\)](#) - Medullary carcinoma
[Puerto Rico \(University of Puerto Rico\)](#) - Medullary thyroid carcinoma
[Texas](#) - Medullary carcinoma
[Texas \(ProPath Associates\)](#) - Medullary carcinoma of thyroid (2)
[Texas \(Scott & White Memorial Hospital\)](#) - Medullary carcinoma
[West Virginia \(Greenbrier Valley Medical Center\)](#) - Medullary adenocarcinoma
[Wisconsin](#) - Medullary thyroid carcinoma
[Wisconsin \(Bellin Hospital\)](#) - Medullary carcinoma
[Wisconsin \(Meriter Hospital\)](#) - Medullary carcinoma
[Australia \(Royal Prince Alfred Hospital\)](#) - Medullary carcinoma of thyroid
[Brazil \(UNIFESP/EPM\)](#) - Medullary carcinoma with pseudo papillary pattern of growth (2)
[Canada \(Foothills Medical Center\)](#) - Medullary carcinoma of thyroid
[Canada \(Woodstock General Hospital\)](#) - Mixed medullary and follicular carcinoma of thyroid
[Italy, Naples](#) - Medullary carcinoma
[Jamaica \(University Hospital of West Indies\)](#) - Medullary carcinoma of the thyroid with amyloid stroma, small cell variant
[Netherlands, Amsterdam](#) - Medullary thyroid carcinoma
[Saudi Arabia \(King Khalid University\)](#) - Medullary thyroid carcinoma

Case 4 - Diagnosis:

Medullary carcinoma, thyroid
T-96000, M-85103

Case 4 - References:

- Papotti M, Sambarto D, Pecchioni C, et al. The Pathology of Medullary Carcinoma of the Thyroid. Review of the Literature and Personal Experience of 62 Cases. *Endocrine Pathol* 1996; 7:1-20.
- Papotti M, Valante M, Komminoth P, et al. Thyroid Carcinomas with Mixed Follicular and C-Cell Differentiation Patterns. *Semi Diagn Pathol* 2000; 17(2):109-119
- Gilliland FD, Hunt WC, Morris DM, et al. Prognostic Factors for Thyroid Carcinoma. A Population-Based Study of 15,698 Cases from the Surveillance Epidemiology and End Results (SEER) Program. *Cancer* 1997; 79:1973-1991.
- Schroder S, Bocker W, Baisch H, et al. Prognostic Factors in Medullary Thyroid Carcinoma. Survival in Relation to Age, Sex, Stage, Histology, Immunocytochemistry, and DNA Content. *Cancer* 1988; 61(4):806-816.
- Santoro M, Thomas GA, Vecchio G, et al. Gene Rearrangement and Chernobyl Related Thyroid Cancers. *Br J Cancer* 2000; 82(2):315-

Case No. 5 Accession No. 29651

November 2004

Alameda (Alameda County Medical Center) - Neuroendocrine carcinoma

Baldwin Park (Kaiser Permanente) - Poorly differentiated carcinoma (1); Follicular carcinoma vs. poorly differentiated carcinoma, NOS ? insular (?)

Fontana (Kaiser Permanente) - Mixed papillary and medullary carcinoma

Glendale - Insular carcinoma

Hayward/Fremont - Poorly differentiated thyroid carcinoma, NOC

Irvine (University of California) - Atypical carcinoid tumor

Loma Linda (Loma Linda University Residents) - Insular carcinoma of the thyroid

Long Beach - Neuroendocrine carcinoma (7)

Los Angeles (USC Residents) - Metastatic neuroendocrine carcinoma, large cell type (probably lung origin)

Monterey Park (Garfield Hospital) - Carcinoid tumor

Monterey (Monterey Peninsula Pathologists) - Undifferentiated thyroid carcinoma with neuroendocrine features

Mountain View (El Camino Pathology Group) - Neuroendocrine carcinoma

Oakland (Kaiser Permanente) - Medullary carcinoma

San Diego (Naval Medical Center) - Poorly differentiated neuroendocrine carcinoma

San Francisco (SF General Hospital) - Paraganglioma

Santa Rosa (Santa Rosa Memorial Hospital) - Neuroendocrine carcinoma (3)

Ventura - Medullary carcinoma (2)

Arizona (Maryvale Medical Center) - Poorly differentiated thyroid carcinoma with neuroendocrine features

Arkansas (University of Arkansas Medical Center) - Poor histology -- ? follicular carcinoma

Colorado (Lutheran Medical Center) - Poorly differentiated (calcitonin-free) medullary carcinoma

Connecticut (Naval Medical Hospital) - Poorly differentiated carcinoma with neuroendocrine features

Florida (Tallahassee) - Poorly differentiated (insular) carcinoma

Florida (Winter Haven Hospital) - Poorly differentiated carcinoma

Illinois - Anaplastic carcinoma

Illinois (Evanston Hospital) - Insular carcinoma

Illinois (Northwestern Memorial Hospital) - Thyroid anaplastic carcinoma

Indiana (Howard Community Hospital) - Carcinoid

Louisiana (Louisiana State University Medical Center) - Anaplastic spindle cell carcinoma with serous differentiation

Maryland (Bethesda Naval Medical Center) - Parathyroid carcinoma

Maryland (Johns Hopkins Hospital Residents) - Poorly differentiated carcinoma, favor medullary

Maryland (University of Maryland) - Insular carcinoma

Massachusetts (Berkshire Medical Center) - Insular carcinoma

Michigan (Oakwood Hospital) - Poorly differentiated carcinoma

Michigan (Pathology Services) - Follicular carcinoma

New York (Long Island Jewish Medical Center) - Poorly differentiated follicular carcinoma with neuroendocrine feature

New York (Nassau University Medical Center) - Metastatic adenocarcinoma, likely from lung

New York (Stony Brook University Hospital Residents) - Neuroendocrine carcinoma

New York (Westchester Medical Center) - Poorly differentiated neuroendocrine carcinoma

North Carolina (Mountain Area Pathology) - Insular carcinoma (2); Poorly differentiated carcinoma consistent with insular carcinoma (1)

Michigan - Poorly differentiated thyroid carcinoma

Ohio (Medical College of Ohio) - Poorly differentiated carcinoma with neuroendocrine features
Ohio (McCullough-Hyde Memorial Hospital) - Follicular carcinoma
Pennsylvania (Allegheny General Hospital) - Neuroendocrine carcinoma
Pennsylvania (Lehigh Valley Hospital) - Medullary carcinoma
Pennsylvania (Mt. Nittany Medical Center) - Anaplastic carcinoma of the thyroid gland
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Medullary carcinoma vs. metastatic, probably lung primary
Puerto Rico (University of Puerto Rico) - Poorly differentiated carcinoma
Texas - Metastatic neuroendocrine carcinoma from lung
Texas (ProPath Associates) - Paraganglioma (2)
Texas (Scott & White Memorial Hospital) - Poorly differentiated carcinoma with neuroendocrine features
West Virginia (Greenbrier Valley Medical Center) - Follicular carcinoma
Wisconsin - Anaplastic thyroid carcinoma
Wisconsin (Bellin Hospital) - Atypical carcinoid tumor
Wisconsin (Meriter Hospital) - Follicular carcinoma
Australia (Royal Prince Alfred Hospital) - Insular carcinoma of thyroid
Brazil (UNIFESP/EPM) - High grade neuroendocrine carcinoma, rule out lung primary (2)
Canada (Foothills Medical Center) - Neuroendocrine carcinoma
Canada (Woodstock General Hospital) - Insular carcinoma of thyroid
Jamaica (University Hospital of West Indies) - Metastatic large cell neuroendocrine carcinoma, from lung
Netherlands, Amsterdam - Large cell neuroendocrine carcinoma
Saudi Arabia (King Khalid University) - Metastatic carcinoma vs. paraganglioma

Case 5 - Diagnosis:

Poorly differentiated carcinoma with neuroendocrine features, thyroid
T-96000, M-80103

Consultation: Moffitt Cancer Center, University of South Florida: "Poorly differentiated carcinoma."

Case 5 - References:

Sakamoto A, Kasai N and Sugano H. Poorly Differentiated Carcinoma of the Thyroid. A Clinicopathologic Entity for a High-Risk Group of Papillary and Follicular Carcinomas. *Cancer* 1983; 52(10):1849-1855.
 Simpson WJ, McKinney SE, Carruthers JS, et al. Papillary and Follicular Thyroid Cancer. Prognostic Factors in 1578 Patients. *Am J Med* 1987; 83(3):479-488.
 Harach HR and Franssila KO. Thyroglobin Immunostaining in Follicular Thyroid Carcinoma. Relationship to the Degree of Differentiation and Cell Type. *Histopathol* 1988; 13(1):43-54.
 Pilotti S, Callini P, Manzari A, et al. Poorly Differentiated Forms of Papillary Thyroid Carcinoma. Distinctive Entities or Morphologic Patterns. *Semin Diagn Pathol* 1995; 12(3):249-255.
 Pollini P, Del Bor, et al. A Novel Panel of Antibodies Segregates Immunocytochemically Poorly Differentiated Carcinoma from Undifferentiated Carcinoma of the Thyroid Gland. *Am J Surg Pathol* 1994; 18(10):1054-1064.

Case No. 6 Accession No. 29562

November 2004

Alameda (Alameda County Medical Center) - Undifferentiated (anaplastic) carcinoma
Baldwin Park (Kaiser Permanente) - Anaplastic thyroid carcinoma (2)
Fontana (Kaiser Permanente) - Anaplastic carcinoma
Glendale - Squamous cell carcinoma vs. mucoepidermoid carcinoma
Hayward/Fremont - Dedifferentiated papillary carcinoma arising in Hashimoto disease
Irvine (University of California) - Thyroid carcinoma, anaplastic type
Loma Linda (Loma Linda University Residents) - Anaplastic carcinoma of the thyroid
Long Beach - Anaplastic carcinoma (7)
Los Angeles (USC Residents) - Anaplastic carcinoma of thyroid
Monterey Park (Garfield Hospital) - Anaplastic thyroid carcinoma
Monterey (Monterey Peninsula Pathologists) - Anaplastic thyroid carcinoma
Mountain View (El Camino Pathology Group) - Poorly differentiated squamous cell carcinoma
Oakland (Kaiser Permanente) - Anaplastic carcinoma
San Diego (Naval Medical Center) - Anaplastic thyroid carcinoma
San Francisco (SF General Hospital) - Anaplastic carcinoma with clear cell differentiation
Santa Rosa (Santa Rosa Memorial Hospital) - Undifferentiated (anaplastic) carcinoma (2); Anaplastic carcinoma (1)
Ventura - Undifferentiated (anaplastic) carcinoma (2)
Arizona (Maryvale Medical Center) - Anaplastic thyroid carcinoma

Arkansas (University of Arkansas Medical Center) - Anaplastic carcinoma, thyroid
Colorado (Lutheran Medical Center) - Undifferentiated (anaplastic) carcinoma
Connecticut (Naval Medical Hospital) - Anaplastic carcinoma
Florida (Tallahassee) - Anaplastic carcinoma
Florida (Winter Haven Hospital) - Anaplastic carcinoma
Illinois - Anaplastic carcinoma
Illinois (Evanston Hospital) - Anaplastic carcinoma
Illinois (Northwestern Memorial Hospital) - Anaplastic thyroid carcinoma
Indiana (Howard Community Hospital) - Anaplastic carcinoma
Louisiana (Louisiana State University Medical Center) - Anaplastic spindle cell carcinoma with serous differentiation
Maryland (Bethesda Naval Medical Center) - Anaplastic carcinoma
Maryland (Johns Hopkins Hospital Residents) - Anaplastic carcinoma
Maryland (University of Maryland) - Anaplastic (undifferentiated) carcinoma
Massachusetts (Berkshire Medical Center) - Anaplastic carcinoma
Michigan (Oakwood Hospital) - Anaplastic thyroid carcinoma
Michigan (Pathology Services) - Anaplastic carcinoma
Nevada - Anaplastic carcinoma
New York (Long Island Jewish Medical Center) - Undifferentiated (anaplastic) carcinoma of thyroid
New York (Nassau University Medical Center) - Anaplastic carcinoma of thyroid
New York (Stony Brook University Hospital Residents) - Anaplastic carcinoma arising from dedifferentiated papillary carcinoma
New York (Westchester Medical Center) - Undifferentiated (anaplastic) carcinoma of thyroid
North Carolina (Mountain Area Pathology) - Anaplastic carcinoma (undifferentiated) (1); Anaplastic carcinoma (2)
Michigan - Anaplastic thyroid carcinoma
Ohio (Medical College of Ohio) - Anaplastic thyroid carcinoma
Ohio (McCullough-Hyde Memorial Hospital) - Anaplastic carcinoma
Pennsylvania (Allegheny General Hospital) - Anaplastic carcinoma
Pennsylvania (Lehigh Valley Hospital) - Anaplastic carcinoma
Pennsylvania (Mt. Nittany Medical Center) - Adenosquamous carcinoma of the thyroid gland
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Anaplastic carcinoma
Puerto Rico (University of Puerto Rico) - Anaplastic carcinoma
Texas - Mucoepidermoid carcinoma
Texas (ProPath Associates) - Anaplastic thyroid carcinoma (2)
Texas (Scott & White Memorial Hospital) - Anaplastic carcinoma
West Virginia (Greenbrier Valley Medical Center) - Mucoepidermoid carcinoma
Wisconsin - Anaplastic thyroid carcinoma, clear cell type
Wisconsin (Bellin Hospital) - Anaplastic thyroid carcinoma
Wisconsin (Meriter Hospital) - Anaplastic carcinoma
Australia (Royal Prince Alfred Hospital) - Anaplastic carcinoma of thyroid
Brazil (UNIFESP/EPM) - Undifferentiated carcinoma, squamous pattern (2)
Canada (Foothills Medical Center) - Anaplastic carcinoma
Canada (Woodstock General Hospital) - Anaplastic carcinoma of thyroid
Italy, Naples - Undifferentiated (anaplastic) carcinoma
Jamaica (University Hospital of West Indies) - Insular carcinoma
Netherlands, Amsterdam - Anaplastic thyroid carcinoma
Saudi Arabia (King Khalid University) - Anaplastic carcinoma

Case 6 - Diagnosis:

Anaplastic carcinoma with squamous and spindle cell features.
 T-96000, M-80123

Consultation: Juan Rosai, M.D. Istituto Nazionale Tumori in Milan, Italy. "Malignant (high grade) anaplastic carcinoma of thyroid with squamous cell and spindle cell features.

Case 6 - References:

- Mellièrre D, Berrahal D, Becquemin JP, et al. (Anaplastic Cancers of the Thyroid. Is Healing Possible?) *Chirurgie* 1999; 124(1):52-57. (French)
 Kobayashi T, Asakawa H, Umeshita K, et al. Treatment of 37 Patients with Anaplastic Carcinoma of the Thyroid. *Head Neck* 1996; 18(1):36-41.
 Kasai N, Sakamoto A and Uchida M. A Combined Modality for Anaplastic Large-Cell Carcinoma of the Thyroid. *Auris Nasus Larynx* 1985; 12 Suppl 2:S72-74.
 Wiseman SM, Loree TR, Hicks WL Jr., et al. Anaplastic Thyroid Cancer Evolved From Papillary Carcinoma. Demonstration of Anaplastic Transformation by Means of the Inter-Simple Sequence Repeat Polymerase Chain Reaction. *Arch Otol Head Neck Surg* 2003; 129(1):96-100.

Alameda (Alameda County Medical Center) - Pancreatic endocrine tumor
Baldwin Park (Kaiser Permanente) - Islet cell tumor (2)
Fontana (Kaiser Permanente) - Islet cell tumor
Glendale - Pancreatic endocrine tumor
Hayward/Fremont - Islet cell tumor, pancreas
Irvine (University of California) - Pancreatic endocrine neoplasm
Loma Linda (Loma Linda University Residents) - Islet cell tumor of the pancreas
Long Beach - Neuroendocrine carcinoma (7)
Los Angeles (USC Residents) - Neuroendocrine neoplasm of pancreas
Monterey Park (Garfield Hospital) - Islet cell tumor, malignant
Monterey (Monterey Peninsula Pathologists) - Neuroendocrine/islet cell tumor
Mountain View (El Camino Pathology Group) - Islet cell tumor, favor malignant
Oakland (Kaiser Permanente) - Pancreatic endocrine neoplasm
San Diego (Naval Medical Center) - Pancreatic endocrine neoplasm
San Francisco (SF General Hospital) - Acinar cell carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Pancreatic endocrine neoplasm (2); Endocrine tumor (islet cell tumor) (1)
Ventura - Ductal adenocarcinoma (2)
Arizona (Maryvale Medical Center) - Pancreatic endocrine neoplasm, malignant
Arkansas (University of Arkansas Medical Center) - Neuroendocrine carcinoma, pancreas
Colorado (Lutheran Medical Center) - Islet cell tumor
Connecticut (Naval Medical Hospital) - Endocrine neoplasm
Florida (Tallahassee) - Acinar cell carcinoma, islet cell carcinoma
Florida (Winter Haven Hospital) - Islet cell carcinoma
Illinois - Pancreatic carcinoma, oncocytic type
Illinois (Evanston Hospital) - Pancreatic endocrine tumor
Illinois (Northwestern Memorial Hospital) - Islet cell tumor
Indiana (Howard Community Hospital) - Acinar cell carcinoma, trabecular
Louisiana (Louisiana State University Medical Center) - Endocrine pancreatic tumor, probably malignant
Maryland (Bethesda Naval Medical Center) - Malignant pancreatic neoplasm (pancreatic endocrine neoplasm vs. acinar carcinoma)
Maryland (Johns Hopkins Hospital Residents) - Well-differentiated neuroendocrine carcinoma
Maryland (University of Maryland) - Islet cell tumor
Massachusetts (Berkshire Medical Center) - Islet cell tumor
Michigan (Oakwood Hospital) - Pancreatic endocrine neoplasm
Michigan (Pathology Services) - Islet cell tumor
Minnesota (University of Minnesota Residents) - Pancreatic endocrine neoplasm
Nevada - Islet cell tumor
New York (Long Island Jewish Medical Center) - Islet cell carcinoma of pancreas
New York (Nassau University Medical Center) - Islet cell tumor
New York (Stony Brook University Hospital Residents) - Pancreas endocrine tumor
New York (Westchester Medical Center) - Pancreatic endocrine (islet cell tumor)
North Carolina (Mountain Area Pathology) - Pancreatic neuroendocrine tumor (3)
Michigan - Acinar cell carcinoma
Ohio (Medical College of Ohio) - Pancreatic endocrine neoplasm
Ohio (McCullough-Hyde Memorial Hospital) - Islet cell/pancreatic neuroendocrine tumor
Pennsylvania (Allegheny General Hospital) - Well-differentiated endocrine carcinoma
Pennsylvania (Lehigh Valley Hospital) - Islet cell tumor
Pennsylvania (Mt. Nittany Medical Center) - Pancreatic endocrine neoplasm
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Endocrine neoplasm
Puerto Rico (University of Puerto Rico) - Islet cell tumor
Texas - Islet cell tumor
Texas (ProPath Associates) - Islet cell tumor (2)
Texas (Scott & White Memorial Hospital) - Pancreatic neuroendocrine carcinoma
West Virginia (Greenbrier Valley Medical Center) - Endocrine adenocarcinoma
Wisconsin - Pancreatic neuroendocrine tumor
Wisconsin (Bellin Hospital) - Islet cell tumor
Wisconsin (Meriter Hospital) - Neuroendocrine carcinoma
Australia (Royal Prince Alfred Hospital) - Pancreatic endocrine tumor
Brazil (UNIFESP/EPM) - Pancreatic endocrine tumor (2)

Canada (Foothills Medical Center) - Pancreatic endocrine neoplasm
Canada (Woodstock General Hospital) - Endocrine tumor (islet cell tumor of pancreas)
Italy, Naples - Endocrine cell tumor
Jamaica (University Hospital of West Indies) - Pancreatic endocrine neoplasm
Netherlands, Amsterdam - Pancreatic endocrine tumor
Saudi Arabia (King Khalid University) - Pancreatic endocrine neoplasm (islet cell tumor)

Case 7 - Diagnosis:

Pancreatic endocrine neoplasm
T-59000, M-80001

Case 7 - References:

Deshpande V, Selig MK, Nielsen GP, et al. Ductal-Insular Pancreatic Endocrine Neoplasms. Clinicopathologic Analysis of a Unique Subtype of Pancreatic Endocrine neoplasms. *Am J Surg Pathol* 2003; 27(4):461-468.
Wild A, Ramaswamy A, Langer P, et al. Frequent Methylation-Associated Silencing of the Tissue Inhibitor of Metalloproteinase-3 Gene in Pancreatic Endocrine Tumors. *J Clin Endocrinol Metab* 2003; 88(3):1367-1373.
Kann PH, Wirkus B, Keth A, et al. Pitfalls In Endosonographic Imaging of Suspected Insulinomas. Pancreatic Nodules of Unknown Dignity. *Eur J Endocrinol* 2003; 148(5):531-534.
Graeme-Cook F, Bell DA, Flotte TJ, et al. Aneuploidy in Pancreatic Insulinomas Does Not Predict Malignancy. *Cancer* 1990; 66(11):2365-2368.
Mukai K, Grotting JC, Greider MH, et al. Retrospective Study of 77 Pancreatic Endocrine Tumors Using the Immunoperoxidase Method. *Am J Surg Pathol* 1982; 6(5):387-399.
Rothmund M, Angelini L, Brant LM, et al. Surgery for Benign Insulinoma. An International Review. *World J Surg* 1990; 14(3):398-399.

Case No. 8 Accession No. 29831

November 2004

Alameda (Alameda County Medical Center) - Solid pseudopapillary tumor
Baldwin Park (Kaiser Permanente) - Solid-cystic papillary epithelial tumor of pancreas (1); Solid cystic-papillary epithelial neoplasm (1)
Fontana (Kaiser Permanente) - Solid pseudopapillary tumor of pancreas
Glendale - Solid and cystic tumor of pancreas
Hayward/Fremont - Solid pseudopapillary tumor, pancreas
Irvine (University of California) - Solid-pseudopapillary tumor
Loma Linda (Loma Linda University Residents) - Solid-pseudopapillary tumor of pancreas
Long Beach - Solid and cystic papillary carcinoma (7)
Los Angeles (USC Residents) - Solid pseudopapillary tumor of pancreas
Monterey Park (Garfield Hospital) - Acinic cell carcinoma
Monterey (Monterey Peninsula Pathologists) - Solid pseudopapillary tumor
Mountain View (El Camino Pathology Group) - Solid and cystic papillary epithelial neoplasm
Oakland (Kaiser Permanente) - Pancreatic solid pseudopapillary tumor
San Diego (Naval Medical Center) - Solid pseudopapillary tumor
San Francisco (SF General Hospital) - Solid pseudopapillary tumor
Santa Rosa (Santa Rosa Memorial Hospital) - Solid pseudopapillary tumor
Ventura - Pancreatic endocrine neoplasm (2)
Arizona (Maryvale Medical Center) - Solid pseudopapillary tumor of pancreas
Arkansas (University of Arkansas Medical Center) - Solid-pseudopapillary neoplasm, pancreas
Colorado (Lutheran Medical Center) - Solid-pseudopapillary tumor
Connecticut (Naval Medical Hospital) - Solid-cystic papillary epithelial neoplasm
Florida (Tallahassee) - Solid pseudopapillary tumor
Florida (Winter Haven Hospital) - Solid and papillary epithelial neoplasm
Illinois - Pancreatic endocrine neoplasm
Illinois (Evanston Hospital) - Solid papillary tumor of pancreas
Illinois (Northwestern Memorial Hospital) - Solid pseudopapillary tumor of pancreas
Indiana (Howard Community Hospital) - Pancreaticoblastoma
Louisiana (Louisiana State University Medical Center) - Solid and cystic pseudopapillary tumor
Maryland (Bethesda Naval Medical Center) - Solid-pseudopapillary tumor
Maryland (Johns Hopkins Hospital Residents) - Solid pseudopapillary tumor
Maryland (University of Maryland) - Solid-pseudopapillary tumor
Massachusetts (Berkshire Medical Center) - Solid pseudopapillary tumor
Michigan (Oakwood Hospital) - Solid cystic-papillary epithelial neoplasm

Michigan (Pathology Services) - Solid and pseudopapillary carcinoma
Minnesota (University of Minnesota Residents) - Solid-cystic-papillary epithelial neoplasm of the pancreas
Nevada - Solid cystic pseudopapillary tumor
New York (Long Island Jewish Medical Center) - Solid-pseudopapillary neoplasm of pancreas
New York (Nassau University Medical Center) - Solid pseudopapillary tumor of pancreas
New York (Stony Brook University Hospital Residents) - Solid pseudopapillary tumor
New York (Westchester Medical Center) - Solid pseudopapillary tumor
North Carolina (Mountain Area Pathology) - Solid-cystic pseudopapillary tumor (3)
Michigan - Solid and cystic pseudo-papillary tumor
Ohio (Medical College of Ohio) - Solid-pseudopapillary tumor
Ohio (McCullough-Hyde Memorial Hospital) - Solid pseudopapillary tumor
Pennsylvania (Allegheny General Hospital) - Papillary cystic carcinoma
Pennsylvania (Lehigh Valley Hospital) - Solid pseudopapillary tumor
Pennsylvania (Mt. Nittany Medical Center) - Solid and papillary epithelial carcinoma of the pancreas
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Solid pseudopapillary tumor
Puerto Rico (University of Puerto Rico) - Solid cystic papillary epithelial neoplasm
Texas - Solid pseudopapillary tumor
Texas (ProPath Associates) - Solid pseudopapillary tumor
Texas (Scott & White Memorial Hospital) - Solid pseudopapillary carcinoma
West Virginia (Greenbrier Valley Medical Center) - Solid pseudopapillary tumor
Wisconsin - Solid pseudopapillary tumor pancreas
Wisconsin (Bellin Hospital) - Solid cystic papillary tumor
Wisconsin (Meriter Hospital) - Solid pseudopapillary tumor
Australia (Royal Prince Alfred Hospital) - Solid-pseudopapillary tumor of pancreas
Brazil (UNIFESP/EPM) - Solid pseudopapillary tumor (2)
Canada (Foothills Medical Center) - Solid pseudopapillary tumor
Canada (Woodstock General Hospital) - Papillary and solid epithelial neoplasm of pancreas
Italy, Naples - Solid-papillary pseudotumor
Jamaica (University Hospital of West Indies) - Mucinous cystadenocarcinoma
Netherlands, Amsterdam - Solid pseudopapillary tumor
Saudi Arabia (King Khalid University) - Solid, cystic, papillary epithelial neoplasm

Case 8 - Diagnosis:

Solid-pseudopapillary tumor, pancreas
 T-59000, M-80001

Case 8 – References:

Pettinato G, Di Vizio D, Manivel JC, et al. Solid-pseudopapillary Tumor of the Pancreas. A Neoplasm with Distinct and Highly Characteristic Cytological Features. *Diagn Cytopathol* 2002; 27(6):325-334.
 Patel VG, Fortson JK, Weaver WL, et al. Solid-Pseudopapillary Tumor of the Pancreas Masquerading as a Pancreatic Pseudocyst. *Am Surg* 2002; 68(7):631-632.
 Kloppel G and Kosmahl M. Cystic Lesions and Neoplasms of the Pancreas. The Features Are Becoming Clearer. *Pancreatology* 2001; 1(6):648-655.
 Yamaguchi K and Tanaka M. Radiologic Imagings of Cystic Neoplasms of the Pancreas. *Pancreatology* 2001; 1(6):633-636.
 Klimstra DS, Wenig BM and Heffess CS. Solid Pseudopapillary Tumor of the Pancreas. A Typically Cystic Carcinoma of Low Malignant Potential. *Semin Diagn Pathol* 2000; 17(1):66-80.

Case No. 9 Accession No. 29590

November 2004

Alameda (Alameda County Medical Center) - Adrenal cortical carcinoma, metastatic
Baldwin Park (Kaiser Permanente) - Metastatic neuroendocrine carcinoma (2)
Fontana (Kaiser Permanente) - Large cell neuroendocrine carcinoma
Glendale - Atypical carcinoid
Hayward/Fremont - Metastatic adrenocortical carcinoma
Irvine (University of California) - Atypical carcinoid
Loma Linda (Loma Linda University Residents) - Metastatic pheochromocytoma
Long Beach - Metastatic pheochromocytoma (7)
Los Angeles (USC Residents) - Adrenal cortical carcinoma, metastatic
Monterey Park (Garfield Hospital) - Carcinoid, malignant
Monterey (Monterey Peninsula Pathologists) - Metastatic adrenocortical carcinoma
Mountain View (El Camino Pathology Group) - Metastatic pheochromocytoma

Oakland (Kaiser Permanente) - Metastatic pheochromocytoma
San Diego (Naval Medical Center) - Adrenal cortical carcinoma, metastatic
San Francisco (SF General Hospital) - Neuroendocrine carcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Metastatic pheochromocytoma (3)
Ventura - Carcinoid (2)
Arizona (Maryvale Medical Center) - Metastatic adrenal cortical carcinoma
Arkansas (University of Arkansas Medical Center) - Metastatic adrenocortical carcinoma, lung
Colorado (Lutheran Medical Center) - Metastatic neuroblastoma
Connecticut (Naval Medical Hospital) - Pheochromocytoma, metastatic
Florida (Tallahassee) - Adrenal cortical carcinoma
Florida (Winter Haven Hospital) - Malignant carcinoid tumor
Illinois - Metastatic pheochromocytoma
Illinois (Evanston Hospital) - Atypical carcinoid
Illinois (Northwestern Memorial Hospital) - Metastatic pheochromocytoma
Indiana (Howard Community Hospital) - Metastatic adrenocortical carcinoma
Louisiana (Louisiana State University Medical Center) - Metastatic adrenocortical carcinoma
Maryland (Bethesda Naval Medical Center) - Metastatic adrenal cortical carcinoma
Maryland (Johns Hopkins Hospital Residents) - Metastatic adrenal cortical carcinoma
Maryland (University of Maryland) - Adrenal cortical carcinoma
Massachusetts (Berkshire Medical Center) - Adrenocortical carcinoma
Michigan (Oakwood Hospital) - Malignant paraganglioma
Michigan (Pathology Services) - Pheochromocytoma
Minnesota (University of Minnesota Residents) - Adrenal cortical carcinoma
Nevada - Metastatic adrenocortical carcinoma
New York (Long Island Jewish Medical Center) - Metastatic adrenal cortical carcinoma of lung
New York (Nassau University Medical Center) - Adrenal cortical carcinoma
New York (Stony Brook University Hospital Residents) - Metastatic adrenal cortical carcinoma
New York (Westchester Medical Center) - Adrenocortical carcinoma
North Carolina (Mountain Area Pathology) - Metastatic adrenal cortical carcinoma (3)
Michigan - Metastatic adrenal cortical carcinoma
Ohio (Medical College of Ohio) - Metastatic adrenal cortical carcinoma
Ohio (McCullough-Hyde Memorial Hospital) - Adrenal cortical carcinoma
Pennsylvania (Allegheny General Hospital) - Moderately differentiated neuroendocrine carcinoma
Pennsylvania (Lehigh Valley Hospital) - Pheochromocytoma
Pennsylvania (Mt. Nittany Medical Center) - Metastatic malignant pheochromocytoma from the adrenal gland to the lung
Pennsylvania (Pennsylvania Hospital Pathology Residents) - Metastatic adrenal cortical carcinoma
Puerto Rico (University of Puerto Rico) - Metastatic adrenocortical carcinoma
Texas - Metastatic adrenocortical carcinoma
Texas (ProPath Associates) - Metastatic pheochromocytoma (2)
Texas (Scott & White Memorial Hospital) - Metastatic pheochromocytoma
West Virginia (Greenbrier Valley Medical Center) - Carcinoid tumor
Wisconsin - Adrenal cortical carcinoma
Wisconsin (Bellin Hospital) - Metastatic adrenal cortical carcinoma
Wisconsin (Meriter Hospital) - Adrenocortical carcinoma
Australia (Royal Prince Alfred Hospital) - Metastatic adrenal cortical carcinoma
Brazil (UNIFESP/EPM) - Metastatic malignant pheochromocytoma (2)
Canada (Foothills Medical Center) - Metastatic adrenal cortical carcinoma
Canada (Woodstock General Hospital) - Pheochromocytoma metastatic to lung
Italy, Naples - Metastatic adrenal cortical carcinoma
Jamaica (University Hospital of West Indies) - Carcinoid tumor, lung
Netherlands, Amsterdam - Atypical carcinoid (necrosis and 2 mitoses per 2 ?)
Saudi Arabia (King Khalid University) - Metastatic adrenal cortical carcinoma

Case 9 - Diagnosis:

Malignant adrenal neoplasm (favor cortical carcinoma) with multiple pulmonary metastasis.
 T-28000, M-83703

(Director's note: Electron microscopy was later performed, showing features favoring an epithelial neoplasm, specifically showing no evidence of a neuroendocrine tumor ("direct quote from the report") drc.

Case 9 – References:

- O'Hara MJ, Monaghan P, Neville AM. The Pathology of Adrenocortical Hyperplasia. A Correlated Structural and Functional Approach to the Diagnosis of Malignant Disease. *Hum Pathol* 1979; 10(2):137-154.
- Sasano N, Ojima M and Masuda T. Endocrinologic Pathology of Functioning Adrenocortical Tumors. Sommers SC, Rosen PP (Eds). *Pathol Annual*, 1980; 15(pt 2): 105-141.
- Weiss LM, Medeiros J and Vickery AJ Jr. Pathologic Features of Prognostic Significance in Adrenocortical Carcinoma. *Am J Surg Pathol* 1989; 13(3):202-206.
- Gandour MJ and Grizzle WE. A Small Adrenocortical Carcinoma with Aggressive Behavior. An Evaluation of Criteria for Malignancy. *Arch Pathol Lab Med* 1986; 110(11):1076-1079.
- Lack EE. Atlas of Tumor Pathology. Tumors of the Adrenal Gland and Extra-Adrenal Paraganglioma. *Armed Forces Institute of Pathology*, Washington, DC 1997; Third Series Fascicle 19:123-152.

Case No. 10 Accession No. 29430

November 2004

Alameda (Alameda County Medical Center) - Pheochromocytoma
Baldwin Park (Kaiser Permanente) - Pheochromocytoma (2)
Fontana (Kaiser Permanente) - Pheochromocytoma
Glendale - Pheochromocytoma
Hayward/Fremont - Pheochromocytoma
Irvine (University of California) - Pheochromocytoma
Loma Linda (Loma Linda University Residents) - Pheochromocytoma
Long Beach - Pheochromocytoma (7)
Los Angeles (USC Residents) - Pheochromocytoma
Monterey Park (Garfield Hospital) - Pheochromocytoma
Monterey (Monterey Peninsula Pathologists) - Pheochromocytoma
Mountain View (El Camino Pathology Group) - Pheochromocytoma
Oakland (Kaiser Permanente) - Pheochromocytoma
San Diego (Naval Medical Center) - Pheochromocytoma
San Francisco (SF General Hospital) - Pheochromocytoma
Santa Rosa (Santa Rosa Memorial Hospital) - Pheochromocytoma (3)
Ventura - Pheochromocytoma (2)
Arizona (Maryvale Medical Center) - Pheochromocytoma
Arkansas (University of Arkansas Medical Center) - Pheochromocytoma, adrenal
Colorado (Lutheran Medical Center) - Pheochromocytoma
Connecticut (Naval Medical Hospital) - Pheochromocytoma
Florida (Tallahassee) - Pheochromocytoma
Florida (Winter Haven Hospital) - Pheochromocytoma
Illinois - Pheochromocytoma
Illinois (Evanston Hospital) - Pheochromocytoma
Illinois (Northwestern Memorial Hospital) - Pheochromocytoma
Indiana (Howard Community Hospital) - Pheochromocytoma
Louisiana (Louisiana State University Medical Center) - Pheochromocytoma
Maryland (Bethesda Naval Medical Center) - Pheochromocytoma
Maryland (Johns Hopkins Hospital Residents) - Pheochromocytoma
Maryland (University of Maryland) - Pheochromocytoma
Massachusetts (Berkshire Medical Center) - Pheochromocytoma
Michigan (Oakwood Hospital) - Pheochromocytoma
Michigan (Pathology Services) - Adrenal cortical adenoma
Minnesota (University of Minnesota Residents) - Pheochromocytoma
Nevada - Pheochromocytoma
New York (Long Island Jewish Medical Center) - Pheochromocytoma
New York (Nassau University Medical Center) - Pheochromocytoma
New York (Stony Brook University Hospital Residents) - Pheochromocytoma
New York (Westchester Medical Center) - Pheochromocytoma
North Carolina (Mountain Area Pathology) - Pheochromocytoma (3)
Michigan - Pheochromocytoma
Ohio (Medical College of Ohio) - Pheochromocytoma
Ohio (McCullough-Hyde Memorial Hospital) - Pheochromocytoma
Pennsylvania (Allegheny General Hospital) - Pheochromocytoma
Pennsylvania (Lehigh Valley Hospital) - Pheochromocytoma
Pennsylvania (Mt. Nittany Medical Center) - Pheochromocytoma of the adrenal gland

Pennsylvania (Pennsylvania Hospital Pathology Residents) - Pheochromocytoma
Puerto Rico (University of Puerto Rico) - Pheochromocytoma
Texas - Pheochromocytoma
Texas (ProPath Associates) - Pheochromocytoma (2)
Texas (Scott & White Memorial Hospital) - Pheochromocytoma
West Virginia (Greenbrier Valley Medical Center) - Pheochromocytoma
Wisconsin - Pheochromocytoma (paraganglioma)
Wisconsin (Bellin Hospital) - Pheochromocytoma
Wisconsin (Meriter Hospital) - Pheochromocytoma
Australia (Royal Prince Alfred Hospital) - Pheochromocytoma
Brazil (UNIFESP/EPM) - Pheochromocytoma (2)
Canada (Foothills Medical Center) - Pheochromocytoma
Canada (Woodstock General Hospital) - Pheochromocytoma of adrenal gland
Italy, Naples - Pheochromocytoma
Jamaica (University Hospital of West Indies) - Pheochromocytoma
Netherlands, Amsterdam - Pheochromocytoma
Saudi Arabia (King Khalid University) - Pheochromocytoma

Case 10 - Diagnosis:

Pheochromocytoma, adrenal
T-93000, M-87000

Case 10 - References:

Shah MJ, Karelia NH, Patel SM, et al. Flow Cytometric DNA Analysis for Determination of Malignant Potential in Adrenal Pheochromocytoma or Paraganglioma. An Indian Experience. *Ann Surg Oncol* 2003; 10(4):426-431.
Shaw C, O'Hanlon DM, O'Keane C, et al. Malignant Pheochromocytoma Metastasizing to the Breast. *Iz J Med Sci* 2003; 172(1):41-42.
Dannenberg H, De Krijger RR, van der Harst E, et al. Von Hippel-Lindau Gene Alterations in Sporadic Benign and Malignant Pheochromocytomas. *Int J Cancer* 2003; 105(2):190-195.
Lenders JWW, Pacak K, Walther MM, et al. Biochemical Diagnosis of Pheochromocytoma. Which Test Is Best? *JAMA* 2002; 287(11):1427-1434.