1318

# CALIFORNIA TUMOR TISSUE REGISTRY

## *TUMORS OF THE ENDOCRINE SYSTEM*

Minutes – Subscription B

February 2000

**SUGGESTED READING (General Topics from Recent Literature):**

Malignant Epithelioid Vascular Tumors of the Pleura. Report of a Series and Literature Review. Zhang PJ, et al. *Hum Pathol* 2000: 31(1):29-34.

Differential Expression of Thyroid Transcription Factor 1 in Small Cell Lung Carcinoma and Merkel Cell Tumor. Bydr-Gloster AL, et al. *Hum Pathol* 2000; 31(1):58-62.

Solitary Fibrous Tumor of the Lower Urogenital Tract. A Report of Five Cases Involving the Seminal Vesicles, Urinary Bladder, and Prostate. Westra WH, et al. *Hum Pathol* 2000:63-68.

Luminal Contents of Benign and Malignant Prostatic Glands. Correspondence to Altered Secretory Mechanisms. *Hum Pathol* 2000; 94-100.

Endocrine Treatment in Prostate Cancer. Denis LJ, et al. *Sem in Surg Oncol* 2000; **18**(1):52-74.

California Tumor Tissue Registry
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Orange (UCI Medical Center Residents) - Marked proliferation of islet cells in chronic pancreatitis (7); Islet cell tumor (1)
Mountain View (El Camino Path Assoc.) - Pancreatic endocrine neoplasm, malignant
Glendale (Glendale Pathology Associates) - Islet cell tumor
San Diego (Naval Medical Center) - Hamartoma (1); Acinar cell carcinoma (7)
Arizona (Phoenix Memorial Hospital) - Acinar cell carcinoma
Kansas (Stormont-Vail Hospital) - Acinic cell carcinoma of the pancreas
Texas (University of Texas Medical Branch Galveston Residents) - Chronic pancreatitis with islet cell hyperplasia
Texas (Propath Associates) - Chronic pancreatitis (1); Acinar cell carcinoma (1)
Texas (Lubbock) - Acinic carcinoma
Louisiana (River Ridge) - Chronic pancreatitis
Mississippi (Kings Daughters Medical Center) - Papillary acinar carcinoma
Florida (Monroe Regional Medical Center) - Chronic pancreatitis with fibrosis
Florida (Winter Haven Hospital) - Islet cell hyperplasia
Wisconsin (Middleton) - Acinar cell carcinoma
Missouri (Joplin) - Fibrotic with atrophy
Kentucky (University of Louisville Residents) - Islet cell hyperplasia
Michigan (St. Mary's Hospital) - Islet cell hyperplasia (1); Islet cell proliferation in chronic pancreatitis (1)
Michigan (Foote Hospital) - Chronic pancreatitis
Pennsylvania (Conemaugh Memorial Hospital Residents) - Chronic pancreatitis
Massachusetts (Longmeadow) - Chronic obstructive pancreatitis with acinar atrophy, fibrosis, and islet hyperplasia
Massachusetts (Medfield) - Diffuse hyperplasia of pancreatic islets
Massachusetts (Good Samaritan Medical Center) - Islet (endocrine pancreas) hyperplasia
New York (Montefiore Medical Care Centre) - Atrophic pancreatitis with endocrine cell hyperplasia and benign neural invasion
New York (Impath) - Well-differentiated endocrine tumor of pancreas (islet cell tumor)
Maryland (National Naval Medical Center) - Chronic pancreatitis
Canada, Calgary (Foothills Hospital) - Pancreatic endocrine tumor (islet cell tumor)
Japan (Shimada City) - Chronic pancreatitis
Japan (Hamamatsu University School of Medicine) - Chronic pancreatitis
Japan (Kurashiki Medical School) - Islet cell tumor (2); Islet cell hyperplasia (2)
Saudi Arabia (King Khalid University Hospital) - Chronic pancreatitis

**DIAGNOSIS:**

**Islet Cell Tumor ("Pancreatic Endocrine Tumor"), Pancreas**
T-59000, M-81503

REFERENCES:

Kenny BD, et al. The Role of Morphometry in Predicting Prognosis in Pancreatic Islet Cell Tumors. *Cancer* 1989; 64(2):460-465.
Kimura W, et al. Clinical Pathology of Endocrine Tumors of the Pancreas. Analysis of Autopsy Cases. *Dig Dis Sc* 1991; 36(7):933-942.
Cryer PE, et al. Pancreatic Islet Cell Carcinoma with Hypercalcemia and Hypergastrinemia. Response to Steptozotocin Cancer. *Cancer* 1976; 38(6): 2217-2221.
De Jong SA, et al. Nonductal Tumors of the Pancreas. The Importance of Laparotomy. *Arch Surg* 1993; 128:730-736.
McKinnon JG, et al. Palliative Treatment of Neuroendocrine Tumors. *Sem in Surg Oncol* 1993; 9(5):453-458.
Guarda LA, et al. Clear Cell Islet Cell Tumor. *Am J Clin Pathol* 1983; 79(4):512-513.

Orange (UCI Medical Center Residents) - Solid-pseudopapillary tumor of pancreas, low grade malignancy (4); Endocrine carcinoma of pancreas (4)
Mountain View (El Camino Path Assoc.) - Pancreatic endocrine neoplasm, oncocytic type
Glendale (Glendale Pathology Associates) - Islet cell tumor
San Diego (Naval Medical Center) - Neuroendocrine cell carcinoma (7); Endocrine cell carcinoma (1)
Arizona (Phoenix Memorial Hospital) - Endocrine carcinoma
Kansas (Stormont-Vail Hospital) - Islet-cell tumor of the pancreas
Texas (University of Texas Medical Branch Galveston Residents) - Pancreatic endocrine tumor, metastatic
Texas (Propath Associates) - Metastatic islet cell tumor (1); Metastatic neuroendocrine tumor (islet cell carcinoma) (1)
Texas (Lubbock) - Islet cell tumor, malignant
Louisiana (River Ridge) - Malignant islet cell tumor
Mississippi (Kings Daughters Medical Center) - Neuroendocrine carcinoma
Florida (Monroe Regional Medical Center) - Endocrine carcinoma
Florida (Winter Haven Hospital) - Malignant pancreatic endocrine tumor
Wisconsin (Middleton) - Islet cell tumor
Missouri (Joplin) - Metastatic malignant islet cell tumor
Kentucky (University of Louisville Residents) - Islet cell tumor, malignant
Michigan (St. Mary's Hospital) - Pancreatic endocrine carcinoma (1); Oncocytic neuroendocrine carcinoma (1)
Michigan (Foote Hospital) - Metastatic islet cell tumor
Pennsylvania (Conemaugh Memorial Hospital Residents) - Endocrine carcinoma, pancreas
Massachusetts (Longmeadow) - Endocrine carcinoma, pancreas
Massachusetts (Medfield) - Metastatic islet tumor of pancreas to lymph node
Massachusetts (Good Samaritan Medical Center) - Neuroendocrine carcinoma
New York (Montefiore Medical Care Centre) - Pancreatic endocrine neoplasm, malignant metastatic
New York (Impath) - Metastatic well-differentiated endocrine carcinoma of pancreas (metastatic islet cell tumor)
Maryland (National Naval Medical Center) - Pancreatic endocrine neoplasm
Canada, Calgary (Foothills Hospital) - Mixed acinar - endocrine carcinoma
Japan (Shimada City) - Endocrine carcinoma of the pancreas
Japan (Hamamatsu University School of Medicine) - Well-differentiated endocrine carcinoma
Japan (Kurashiki Medical School) - Islet cell tumor (3); Acinic cell carcinoma (1)
Saudi Arabia (King Khalid University Hospital) - Differentiated neuroendocrine carcinoma, low grade, pancreas

## DIAGNOSIS:

**Neuroendocrine Carcinoma with Oncocytic Change ("Pancreatic Endocrine Tumor, Malignant")**
T-59000, M-73050, T-80103

REFERENCES:

Carlei F, et al. Antibodies to Neuron-Specific Enolase for the Delineation of the Entire Diffuse Neuroendocrine System in Health and Disease. *Semin Diag Pathol* 1984;1(1):59-70.

Germann PG, et al. RITA/Registry of Industrial Toxicology Animal Data. A Comparative Immunohistochemical Study of 77 Islet Cel l Carcinomas in Sprague-Dawley and Wistar Rats Using Antibodies Against Insulin, Glucagon, Somatostatin and Gastrin. *Exp Toxicol Pathol* 1999; 51(6):477-487.

Compton CC. Protocol for the Examination of Specimens From Patients with Endocrine Tumors of the Pancreas, Including Those with Mixed Endocrine and Acinar Cell Differentiation. A Basis for Checklists. Cancer Committee of the College of American Pathologists. *Arch Pathol Lab Med* 2000; 124(1):30-36.

Orange (UCI Medical Center Residents) - Adrenocortical adenoma
Mountain View (El Camino Path Assoc.) - Cortical hyperplasia associated with Conn's syndrome
Glendale (Glendale Pathology Associates) - Adrenal cortical adenoma
San Diego (Naval Medical Center) - Adrenal cortical hyperplasia (3); Adenoma (4); Mixed micro and macronodular adrenal cortical hyperplasia (1)
Arizona (Phoenix Memorial Hospital) - Cortical hyperplasia, adrenal
Kansas (Stormont-Vail Hospital) - Adrenal cortical adenoma
Texas (University of Texas Medical Branch Galveston Residents) - Adrenal cortical adenoma (rare spironolactone bodies seen)
Texas (Propath Associates) - Cortical adenoma of adrenal (1); (Conn's syndrome) with functioning adrenal adenoma (1)
Texas (Lubbock) - Hyperplasia of adrenal gland
Louisiana (River Ridge) - Adrenocortical adenoma
Mississippi (Kings Daughters Medical Center) - Nodular adrenal cortical hyperplasia
Florida (Monroe Regional Medical Center) - Nodular adrenal cortical hyperplasia
Florida (Winter Haven Hospital) - Adrenocortical adenoma
Wisconsin (Middleton) - Cortical adenoma
Missouri (Joplin) - Adrenal cortical adenoma
Kentucky (University of Louisville Residents) - Aldosterone-secreting adenoma
Michigan (St. Mary's Hospital) - Adrenal cortical adenoma (2)
Michigan (Foote Hospital) - Adrenal cortical adenoma
Pennsylvania (Conemaugh Memorial Hospital Residents) - Adrenal cortical hyperplasia consistent with Conn's syndrome
Massachusetts (Longmeadow) - Adrenal cortical adenoma with aldosteronism
Massachusetts (Medfield) - Adrenocortical adenoma
Massachusetts (Good Samaritan Medical Center) - Adrenal cortical adenoma (aldosteronoma)
New York (Montefiore Medical Care Centre) - Aldosteronoma producing cortical adenoma
New York (Impath) - Adrenal cortical adenoma
Maryland (National Naval Medical Center) - Cortical adenoma (aldosternoma)
Canada, Calgary (Foothills Hospital) - Adrenocortical adenoma with spirolactone bodies
Japan (Shimada City) - Cortical nodular hyperplasia
Japan (Hamamatsu University School of Medicine) - Adrenal cortical adenoma associated with Conn's syndrome
Japan (Kurashiki Medical School) - Cortical adenoma (4)
Saudi Arabia (King Khalid University Hospital) - Nodular cortical hyperplasia, adrenal gland

**DIAGNOSIS:**

**Aldosterone-Secreting Adrenal Cortical Adenoma Associated with Conn's Syndrome**
T-93000, M-81400

REFERENCES:

Weiss LM. Comparative Histologic Study of 43 metastasizing and Nonmetastasizing Adrenocortical Tumors. *Am J Surg Pathol* 1984; 8(3):163-169.
Icard P, et al. Adrenocortical Carcinoma in Surgically Treated Patients. A Retrospective Study on 156 Cases by the French Association of Endocrine Surgery. *Surg* 1992; 112(6):972-980.
Medeiros LJ, et al. New Developments in the Pathologic Diagnosis of Adrenal Cortical Neoplasms. A Review. *Am J Clin Pathol* 1992; 97(1):73-83.
Chan JK, et al. Endocrine Malignancies That May Mimic Benign Lesions. *Semin Diag Pathol* 1995; 12(1):45-63.
(Also See References to Case 5)

Orange (UCI Medical Center Residents) - Pheochromocytoma
Mountain View (El Camino Path Assoc.) - Pheochromocytoma (pigmented)
Glendale (Glendale Pathology Associates) - Pheochromocytoma
San Diego (Naval Medical Center) - Pheochromocytoma (8)
Arizona (Phoenix Memorial Hospital) - Pheochromocytoma, adrenal
Kansas (Stormont-Vail Hospital) - Pheochromocytoma
Texas (University of Texas Medical Branch Galveston Residents) - Pheochromocytoma
Texas (Propath Associates) - Pheochromocytoma (2)
Texas (Lubbock) - Pheochromocytoma
Louisiana (River Ridge) - Pheochromocytoma
Mississippi (Kings Daughters Medical Center) - Pheochromocytoma
Florida (Monroe Regional Medical Center) - Pheochromocytoma
Florida (Winter Haven Hospital) - Pheochromocytoma
Wisconsin (Middleton) - Pheochromocytoma
Missouri (Joplin) - Pheochromocytoma
Kentucky (University of Louisville Residents) - Pheochromocytoma
Michigan (St. Mary's Hospital) - Pheochromocytoma (2)
Michigan (Foote Hospital) - Pheochromocytoma
Pennsylvania (Conemaugh Memorial Hospital Residents) - Pheochromocytoma
Massachusetts (Longmeadow) - Adrenal Pheochromocytoma
Massachusetts (Medfield) - Pheochromocytoma
Massachusetts (Good Samaritan Medical Center) - Neural endocrine tumor-pheochromocytoma
New York (Montefiore Medical Care Centre) - Pheochromocytoma
New York (Impath) - Pheochromocytoma
Maryland (National Naval Medical Center) - Pheochromocytoma
Canada, Calgary (Foothills Hospital) - Pheochromocytoma
Japan (Shimada City) - Pheochromocytoma
Japan (Hamamatsu University School of Medicine) - Pheochromocytoma
Japan (Kurashiki Medical School) - Pheochromocytoma, pigmented (4)
Saudi Arabia (King Khalid University Hospital) - Pheochromocytoma, adrenal gland

**DIAGNOSIS:**

**Pheochromocytoma, Adrenal Gland**
T-93000, M-87000

REFERENCES:

Modlin IM, et al. Pheochromocytomas in 72 Patients. Clinical and Diagnostic Features, Treatment and Long-Term Results. *Br J Surg* 1979; 66(7):456-465.

Chetty R, et al. Bilateral Pheochromocytoma. Ganglioneuroma of the Adrenal in Type 1 Neurofibromatosis. *Am J Surg Pathol* 1993; 17(8):837-841.

Bigner SH, et al. Medullary Carcinoma of the Thyroid in the Multiple Endocrine Neoplasia IIA Syndrome. *Am J Surg Pathol* 1981; 5(5):459-472.

Steinhoff MM, et al. Stromal Amyloid in Pheochromocytoma. *Hum Pathol* 1992; 23(1):33-36.

Walther MM, et al. Clinical and Genetic Characterization of Pheochromocytoma in von Hippel-Lindau Families. Comparison with Sporadic Pheochromocytoma Gives Insight into Natural History of Pheochromocytoma. *J Urol* 1999; 162(3 Pt 1):659-664.

Orange (UCI Medical Center Residents) - Adrenal cortical adenoma (4); Adrenal cortical neoplasm with undeterminant biological behavior (4)
Mountain View (El Camino Path Assoc.) - Cortical adenoma
Glendale (Glendale Pathology Associates) - Adrenal cortical adenoma
San Diego (Naval Medical Center) - Adrenal cortical adenoma (7); Uncertain malignant potential (1)
Arizona (Phoenix Memorial Hospital) - Cortical adenoma, adrenal
Kansas (Stormont-Vail Hospital) - Adrenal cortical adenoma
Texas (University of Texas Medical Branch Galveston Residents) - Adrenal cortical tumor, histologically benign; cannot exclude well-differentiated adrenocortical carcinoma
Texas (Propath Associates) - Adrenal cortical carcinoma (2)
Texas (Lubbock) - Well-differentiated adenocarcinoma
Louisiana (River Ridge) - Adrenal cortical adenoma
Mississippi (Kings Daughters Medical Center) - Cortical adenoma
Florida (Monroe Regional Medical Center) - Cortical adenoma
Florida (Winter Haven Hospital) - Adrenocortical adenoma
Wisconsin (Middleton) - Adrenal cortical adenoma
Missouri (Joplin) - Adrenal cortical adenoma
Kentucky (University of Louisville Residents) - Adrenal cortical tumor, probably adenoma
Michigan (St. Mary's Hospital) - Adrenal cortical adenoma (2)
Michigan (Foote Hospital) - Adrenal cortical adenoma
Pennsylvania (Conemaugh Memorial Hospital Residents) - Adrenal cortical adenoma
Massachusetts (Longmeadow) - Adrenal cortical adenoma
Massachusetts (Medfield) - Adrenocortical carcinoma
Massachusetts (Good Samaritan Medical Center) - Adrenal cortical adenoma, carcinoma cannot be excluded
New York (Montefiore Medical Care Centre) - Adrenal cortical adenoma
New York (Impath) - Adrenal cortical adenoma
Maryland (National Naval Medical Center) - Adrenal cortical neoplasm (favor adenoma)
Canada, Calgary (Foothills Hospital) - Adrenocortical adenoma (r/o Cushing's)
Japan (Shimada City) - Adrenal cortical adenoma
Japan (Hamamatsu University School of Medicine) - Adrenal cortical adenoma
Japan (Kurashiki Medical School) - Cortical adenoma, possibly aldosterone-producing (4)
Saudi Arabia (King Khalid University Hospital) - Adrenocortical adenoma, adrenal gland

**DIAGNOSIS:**

**Adrenal Cortical Adenoma**
T-93000, M-83700

REFERENCES:

Hirano Y, et al. Telomerase Activity as an Indicator of Potentially Malignant Adrenal Tumors. *Cancer* 1998(4); 83:772-776.
Amberson JB, et al. Flow Cytometric Analysis of Nuclear DNA from Adrenocortical Neoplasms.. A Retrospective Study Using Paraffin-Embedded Tissue. *Cancer* 1987; 59(12):2091-2095.
Weiss LM, et al. Comparative Histologic Study of 43 Metastasizing and Nonmetastasizing Adrenocortical Tumors. *Am J Surg Pathol* 1984; 8(3):163-169.

Orange (UCI Medical Center Residents) - Thymoma
Mountain View (El Camino Path Assoc.) - Multilobulated cystic thymoma
Glendale (Glendale Pathology Associates) - Cystic thymoma
San Diego (Naval Medical Center) - Thymoma (7); Spindle cell thymoma (1)
Arizona (Phoenix Memorial Hospital) - Cystic thymoma
Kansas (Stormont-Vail Hospital) - Multi-lobular thymic cyst
Texas (University of Texas Medical Branch Galveston Residents) - Thymoma
Texas (Propath Associates) - Lymphocytic thymoma (1); Thymoma (1)
Texas (Lubbock) - Thymoma, predominantly mixed
Louisiana (River Ridge) - Thymoma
Mississippi (Kings Daughters Medical Center) - Thymoma
Florida (Monroe Regional Medical Center) - Cystic thymoma
Florida (Winter Haven Hospital) - Multicystic thymoma
Wisconsin (Middleton) - Thymoma
Missouri (Joplin) - Thymoma
Kentucky (University of Louisville Residents) - Thymoma
Michigan (St. Mary's Hospital) - Thymic cyst (2)
Michigan (Foote Hospital) - Lymphocyte predominant thymoma
Pennsylvania (Conemaugh Memorial Hospital Residents) - Spindle cell thymoma
Massachusetts (Longmeadow) - Thymoma with a prominent spindle cell component
Massachusetts (Medfield) - Thymic hyperplasia
Massachusetts (Good Samaritan Medical Center) - Thymoma
New York (Montefiore Medical Care Centre) - Benign thymoma
New York (Impath) - Thymoma, AB type
Maryland (National Naval Medical Center) - Thymoma
Canada, Calgary (Foothills Hospital) - Encapsulated thymoma
Japan (Shimada City) - Encapsulated thymoma
Japan (Hamamatsu University School of Medicine) - Thymoma
Japan (Kurashiki Medical School) - Thymoma, encapsulated (4)
Saudi Arabia (King Khalid University Hospital) - Thymoma, thymus

**DIAGNOSIS:**

**Encapsulated Mixed Thymoma with Spindle Cell Component**
T-98000, M-85800

REFERENCES:

Gripp S, et al. Thymoma. Prognostic Factors and Treatment Outcomes. *Cancer* 1998; 83(8):1495-1503.
Hammond EH, et al. The Diagnosis of Thymoma. A Review. *Ultrastruct Pathol* 1991; 15(4-5):419-438.
Kuo TT, et al. DNA Flow Cytometric Study of Thymic Epithelial Tumors with Evaluation of It's Usefulness in the Pathologic Classification. *Hum Pathol* 1993; 24(7):746-749.
Kuo TT, et al. Thymoma. A Study of the Pathologic Classification of 71 Cases with Evaluation of the Muller-Hermelink System. *Hum Pathol* 1993; 24(7):746-749.
Pescarmona E, et al. The Prognostic Implication of Thymoma Histologic Subtyping. A Study of 80 Consecutive Cases. *Amer J of Clin Pathol* 1990; 93(2)190-195.
Nussbaum MS, et al. Management of Myasthenia Gravis by Extended Thymectomy with Anterior Mediastinal Dissection. *Surg* 1992; 112(4):681-688.

Orange (UCI Medical Center Residents) - Medullary thyroid carcinoma, small cell variant (5); Small cell carcinoma (3)
Mountain View (El Camino Path Assoc.) - Medullary carcinoma
Glendale (Glendale Pathology Associates) - Insular carcinoma
San Diego (Naval Medical Center) - Anaplastic thyroid carcinoma (7); Undifferentiated carcinoma associated with chronic lymphocytic thyroiditis (1)
Arizona (Phoenix Memorial Hospital) - Undifferentiated carcinoma with focal chondroid metaplasia
Kansas (Stormont-Vail Hospital) - Small cell anaplastic carcinoma
Texas (University of Texas Medical Branch Galveston Residents) - Small cell carcinoma, metastatic
Texas (Propath Associates) - Medullary carcinoma of thyroid (1); Poorly differentiated thyroid carcinoma-insular pattern (1)
Texas (Lubbock) - Anaplastic carcinoma
Louisiana (River Ridge) - Small cell neuroendocrine carcinoma
Mississippi (Kings Daughters Medical Center) - Anaplastic carcinoma
Florida (Monroe Regional Medical Center) - Small cell carcinoma
Florida (Winter Haven Hospital) - Medullary carcinoma
Wisconsin (Middleton) - Poorly differentiated carcinoma
Missouri (Joplin) - Metastatic poorly differentiated small cell carcinoma
Kentucky (University of Louisville Residents) - Anaplastic thyroid carcinoma with neuroendocrine and sarcomatous differentiation
Michigan (St. Mary's Hospital) - Metastatic small cell carcinoma (1); Small cell undifferentiated carcinoma, metastatic to thyroid (1)
Michigan (Foote Hospital) - Medullary thyroid carcinoma
Pennsylvania (Conemaugh Memorial Hospital Residents) - Medullary carcinoma, small cell variant/small cell carcinoma
Massachusetts (Longmeadow) - Medullary carcinoma, small cell neuroendocrine type, thyroid
Massachusetts (Medfield) - Medullary carcinoma of thyroid
Massachusetts (Good Samaritan Medical Center) - Metastatic poorly differentiated carcinoma, favor lung origin
New York (Montefiore Medical Care Centre) - Small cell neuroendocrine carcinoma
New York (Impath) - Medullary carcinoma of thyroid gland
Maryland (National Naval Medical Center) - Poorly differentiated neuroendocrine carcinoma (small cell carcinoma)
Canada, Calgary (Foothills Hospital) - Medullary carcinoma, thyroid
Japan (Shimada City) - Medullary thyroid carcinoma, undifferentiated
Japan (Hamamatsu University School of Medicine) - Undifferentiated carcinoma, small cell type
Japan (Kurashiki Medical School) - Small cell neuroendocrine carcinoma (3); Medullary carcinoma (1)
Saudi Arabia (King Khalid University Hospital) - Medullary carcinoma, thyroid

## DIAGNOSIS:

**Small Cell Neuroendocrine Carcinoma ("Small Cell Variant of Medullary Carcinoma"), Thyroid**
T-96000, M-85103

REFERENCES:

Bussolati G, et al. Medullary Carcinoma of the Thyroid with Atypical Patterns. *Cancer* 1979; 44(5):1769-1777.
Saad MF, et al. Medullary Carcinoma of the Thyroid. A Study of the Clinical Features and Prognostic Factors in 161 Patients. *Medicine* 1984; 63(6):319-342.
Bergholm U, et al. Clinical Characteristics in Sporadic and Familial Medullary Thyroid Carcinoma. A Nationwide Study of 249 Patients in Sweden from 1959 Through 1981. *Cancer* 1989; 63(6):1196-1204.
Bigner SH, et al. Medullary Carcinoma of the Thyroid in Multiple Endocrine Neoplasia IIA Syndrome. *Am J Surg Pathol* 1981; 5(5):459-472.
Eusebi V, et al. Calcitonin Free Oat Cell Carcinoma of the Thyroid Gland. *Virchows Arch (A)* 1990; 417:267-271.

Orange (UCI Medical Center Residents) - Hurthle cell adenoma
Mountain View (El Camino Path Assoc.) - Hurthle cell adenoma
Glendale (Glendale Pathology Associates) - Hurthle cell adenoma
San Diego (Naval Medical Center) - Hurthle cell adenoma (8)
Arizona (Phoenix Memorial Hospital) - Hurthle cell adenoma
Kansas (Stormont-Vail Hospital) - Follicular adenoma
Texas (University of Texas Medical Branch Galveston Residents) - Hurthle cell tumor
Texas (Propath Associates) - Hurthle cell tumor (2)
Texas (Lubbock) - Hurthle cell adenoma
Louisiana (River Ridge) - Follicular neoplasm favor adenoma
Mississippi (Kings Daughters Medical Center) - Follicular adenoma
Florida (Monroe Regional Medical Center) - Follicular adenoma
Florida (Winter Haven Hospital) - Follicular adenoma
Wisconsin (Middleton) - Follicular adenoma with Hurthle cell features
Missouri (Joplin) - Atypical follicular adenoma with oncocytic change
Kentucky (University of Louisville Residents) - Follicular adenoma with Hurthle cell features
Michigan (St. Mary's Hospital) - Follicular adenoma (2)
Michigan (Foote Hospital) - Hurthle cell adenoma
Pennsylvania (Conemaugh Memorial Hospital Residents) - Follicular adenoma
Massachusetts (Longmeadow) - Hurthle cell adenoma, follicular type, thyroid
Massachusetts (Medfield) - Follicular adenoma of thyroid (colloid type)
Massachusetts (Good Samaritan Medical Center) - Macro and ?follicular thyroid adenoma with exophytic changes
New York (Montefiore Medical Care Centre) - Hurthle cell adenoma
New York (Impath) - Hurthle cell tumor (probable adenoma)
Maryland (National Naval Medical Center) - Follicular adenoma
Canada, Calgary (Foothills Hospital) - Hurthle cell favor adenoma
Japan (Shimada City) - Oncocytic adenoma of the thyroid
Japan (Hamamatsu University School of Medicine) - Follicular adenoma
Japan (Kurashiki Medical School) - Follicular adenoma (2); Adenomatoid nodule (2)
Saudi Arabia (King Khalid University Hospital) - Hurthle cell adenoma, thyroid

**DIAGNOSIS:**

**Follicular Adenoma with Hurthle Cell Features ("Hurthle Cell Adenoma"), Thyroid**
T-96000, M-83300

REFERENCES:

Mittendorf EA, et al. Follow-Up Evaluation and Clinical Course of Patients with Benign Nodular Thyroid Disease. *Am Surg* 1999; 65(7):653-658.

Frisk T, et al. Low Frequency of Numerical Chromosomal Aberrations in Follicular Thyroid Tumors Detected by Comparative Genomic Hybridization. *Genes Chromosomes Cancer* 1999; 25(4):349-353.

Orange (UCI Medical Center Residents) - Follicular carcinoma
Mountain View (El Camino Path Assoc.) - Follicular carcinoma
Glendale (Glendale Pathology Associates) - Follicular carcinoma, minimally invasion
San Diego (Naval Medical Center) - Follicular carcinoma with evidence of capsular invasion and angioinvasion (7); Well-differentiated angioinvasive follicular carcinoma (1)
Arizona (Phoenix Memorial Hospital) - Hurthle cell carcinoma
Kansas (Stormont-Vail Hospital) - Minimally invasive, encapsulated follicular carcinoma
Texas (University of Texas Medical Branch Galveston Residents) - Medullary carcinoma
Texas (Propath Associates) - Follicular thyroid carcinoma (1); Follicular carcinoma (1)
Texas (Lubbock) - Follicular carcinoma
Louisiana (River Ridge) - Follicular neoplasm favor adenoma
Mississippi (Kings Daughters Medical Center) - Follicular carcinoma with oncocytic features
Florida (Monroe Regional Medical Center) - Follicular carcinoma
Florida (Winter Haven Hospital) - Follicular carcinoma
Wisconsin (Middleton) - Medullary carcinoma
Missouri (Joplin) - Follicular variant of papillary carcinoma
Kentucky (University of Louisville Residents) - Follicular carcinoma
Michigan (St. Mary's Hospital) - Atypical adenoma (2)
Michigan (Foote Hospital) - Follicular carcinoma
Pennsylvania (Conemaugh Memorial Hospital Residents) - Follicular carcinoma
Massachusetts (Longmeadow) - Follicular carcinoma of thyroid showing capsular and vascular invasion
Massachusetts (Medfield) - Follicular variant of papillary carcinoma (thyroid)
Massachusetts (Good Samaritan Medical Center) - Follicular thyroid carcinoma, angio and capsular invasion
New York (Montefiore Medical Care Centre) - Minimally invasive follicular carcinoma
New York (Impath) - Thyroid follicular carcinoma
Maryland (National Naval Medical Center) - Follicular carcinoma
Canada, Calgary (Foothills Hospital) - Papillary carcinoma, solid/trabecular type
Japan (Shimada City) - Medullary thyroid carcinoma
Japan (Hamamatsu University School of Medicine) - Follicular carcinoma, minimally invasive
Japan (Kurashiki Medical School) - Follicular carcinoma (4)
Saudi Arabia (King Khalid University Hospital) - Minimally invasive follicular carcinoma, thyroid

**DIAGNOSIS:**

**Minimally Invasive Follicular Carcinoma with Vascular Invasion, Thyroid**
T-96000, M-83303

REFERENCES:

Yamashina M, et al. Follicular Neoplasms of the Thyroid Total Circumferential Evaluation of the Fibrous Capsule. *Am J Surg Pathol* 1992; 16(4):392-400.

Katah R, et al. Birefringent (Calcium Oxalate) Crystals in Thyroid Disease. A Clinicopathological Study with Possible Implications for Differential Diagnosis. *Am J Surg Pathol* 1993; 17(7):698-705.

Ruschoff J, et al. Diagnostic Value of AgNOR Staining in Follicular Cell Neoplasms of the Thyroid Comparison of Evaluation Methods and Nucleolar Features. *Am J Surg Pathol* 1993; 17(12):1281-1288.

Yamashita H, et al. Extracapsular Invasion of Lymph Node Metastasis. A Good Indicator of Disease Recurrence and Poor Prognosis in Patients with Thyroid Microcarcinoma. *Cancer* 1999; 86(5):842-849.

Orange (UCI Medical Center Residents) - Papillary carcinoma
Mountain View (El Camino Path Assoc.) - Papillary carcinoma, tall cell variant
Glendale (Glendale Pathology Associates) - Papillary carcinoma
San Diego (Naval Medical Center) - Papillary thyroid carcinoma (8)
Arizona (Phoenix Memorial Hospital) - Papillary carcinoma, tall cell variant
Kansas (Stormont-Vail Hospital) - Papillary carcinoma of the thyroid
Texas (University of Texas Medical Branch Galveston Residents) - Papillary carcinoma, tall cell variant
Texas (Propath Associates) - Papillary thyroid carcinoma (1); Papillary adenocarcinoma of thyroid (1)
Texas (Lubbock) - Papillary carcinoma
Louisiana (River Ridge) - Papillary carcinoma (tall cell variant)
Mississippi (Kings Daughters Medical Center) - Papillary carcinoma
Florida (Monroe Regional Medical Center) - Papillary carcinoma
Florida (Winter Haven Hospital) - Papillary carcinoma
Wisconsin (Middleton) - Papillary carcinoma
Missouri (Joplin) - Papillary carcinoma
Kentucky (University of Louisville Residents) - Papillary thyroid carcinoma, tall cell variant
Michigan (St. Mary's Hospital) - Papillary carcinoma, tall cell variant (2)
Michigan (Foote Hospital) - Papillary thyroid carcinoma with tall cell features
Pennsylvania (Conemaugh Memorial Hospital Residents) - Papillary carcinoma
Massachusetts (Longmeadow) - Papillary carcinoma, thyroid
Massachusetts (Medfield) - Papillary carcinoma of thyroid gland
Massachusetts (Good Samaritan Medical Center) - Papillary thyroid carcinoma, tall cell variety
New York (Montefiore Medical Care Centre) - Papillary carcinoma of probable thyroid origin
New York (Impath) - Papillary carcinoma of thyroid gland
Maryland (National Naval Medical Center) - Papillary carcinoma, tall cell variety
Canada, Calgary (Foothills Hospital) - Papillary carcinoma, tall cell variant
Japan (Shimada City) - Papillary carcinoma of the thyroid
Japan (Hamamatsu University School of Medicine) - Papillary carcinoma
Japan (Kurashiki Medical School) - Papillary carcinoma, tall-cell variant (3); Metastatic carcinoma (1)
Saudi Arabia (King Khalid University Hospital) - Papillary carcinoma, thyroid

**DIAGNOSIS:**

**Papillary Carcinoma with Tall Cell Features, Thyroid**
T-96000, M-80503

REFERENCES:

Mazzaferri EL, et al. Long-Term Impact of Initial Surgical and Medical Therapy on Papillary and Follicular Thyroid Cancer. *Am J Med* 1994; 97(5):418-428.

DeGroot LJ, et al. Natural History, Treatment and Course of Papillary Thyroid Carcinoma. *J Clin Endocrinol Metab* 1990; 71(2):414-424.

Filie AC, et al. The Tall Cell Variant of Papillary Carcinoma of the Thyroid. Cytologic Features and Loss of Heterozygosity of Metastatic and/or Recurrent Neoplasms and Primary Neoplasms. *Cancer* 1999; 87(4):238-242.

Shimizu M, et al. Tall Cell Variant of Papillary Thyroid Carcinoma with Foci of Columnar Cell Component. *Virchows Arch* 1999; 434(2):173-173.

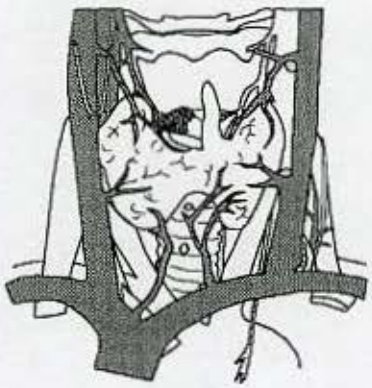
Cameselle-Teijeiro J, et al. Cytologic Clues for Distinguishing the Tall Cell Variant of Thyroid Papillary Carcinoma. A Case Report. *Acta Cytol* 1997; 41(4 Suppl):1310-1316.

CALIFORNIA
TUMOR TISSUE REGISTRY

# "TUMORS OF THE ENDOCRINE SYSTEM"

## Study Cases, Subscription B

## February 2000




**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
**Case of the Month:** www.llu.edu/llu/cttr/cotm

**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:**
Weldon K. Bullock, MD
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: D.R. Dickson, M.D.**
**Santa Barbara, CA**

**Case No. 1 - February 2000**

**Tissue from: Pancreas**

**Accession #9853**

**Clinical Abstract:**

This 52-year-old male patient expired six months after onset of difficulty in swallowing and five months after being diagnosed with squamous cell carcinoma of the esophagus. An autopsy was performed.

**Gross Pathology:**

The pancreas weighed 80 grams and had a thickened fibrous capsule. Sectioning revealed a tough and fibrous tissue with obliteration of the lobular architecture and irregular dilation of the ducts. Metastases were not seen.

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**Contributor: Beverly Myers, M.D.**
**Sacramento, CA**

**Case No. 2 - February 2000**

**Tissue from: Pancreas**

**Accession #28484**

**Clinical Abstract:**

Severe abdominal pain brought this 41-year-old female to medical attention. Ultrasound showed a large mass in the pancreas with apparent metastatic involvement of peripancreatic lymph nodes.

**Gross Pathology:**

The 14.0 x 4.5 x 5.0 cm pancreas was largely replaced by pseudocysts with a shaggy green lining. Adherent to the pancreas was a 6.5 x 5.0 x 3.5 cm lymph node which was grossly replaced by tumor.

SPECIAL STUDIES (contributor's report):

| | |
|---|---|
| CAM 5.2 | positive |
| Synaptophysin | positive |
| Chromogranin | positive |
| NSE | positive |

**Contributor: LL Pathology Group (drc)**
**Loma Linda, CA**

**Case No. 3 - February 2000**

**Tissue from: Left adrenal gland**

**Accession #28457**

**Clinical Abstract:**

After several years of mild hyperadosteronism this 52-year-old male was referred because of increased difficulty maintaining normokalemia. A mass in the left adrenal gland had remained unchanged for at least 5 years.

**Gross Pathology:**

The 20 gram adrenal gland was 7.3 x 4.8 x 1.8 cm and contained a 1.2 x 1.0 x 1.1 cm well-circumscribed yellow-orange cortical nodule.

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**Contributor: Pamela Bowell, M.D.**
**San Diego, CA**

**Case No. 4 - February 2000**

**Tissue from: Adrenal gland**

**Accession #28596**

**Clinical Abstract:**

A 62-year-old female was referred with poorly controlled episodic hypertension, palpitations, and elevated urine catecholamines and vanillylmandelic acid. An MRI revealed a 4.0 cm non-enhancing mass in left adrenal gland.

**Gross Pathology:**

The 7.0 x 4.0 x 2.8 cm adrenal gland contained a well-circumscribed 4.5 cm gray-pink mass.

**Contributor:** **Ernest Holburt, M.D.**
**Fallbrook, CA**

**Case No. 5 - February 2000**

**Tissue from:** **Left adrenal**

**Accession #28557**

**Clinical Abstract:**

A mass was found in the left adrenal gland of this 44-year-old female.

**Gross Pathology:**

The 64 gram specimen consisted of a 6.0 x 4.0 x 4.0 cm ovoid, well-encapsulated mass. The cut surface was a brilliant yellow with punctate areas of necrosis.

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**Contributor:** **D.L. Kell, M.D.**
**Santa Barbara, CA**

**Case No. 6 - February 2000**

**Tissue from:** **Thymus**

**Accession #28574**

**Clinical Abstract:**

Following a thyroidectomy several years earlier, this 57-year-old female had a routine follow-up with CT scan. The scan revealed a mass in the anterior superior mediastinum. A thymectomy was performed.

**Gross Pathology:**

The 101 gram, 12.0 x 9.0 x 3.0 cm specimen consisted predominately of soft yellow adipose tissue, with a 3.4 x 4.0 x 2.4 cm firm oval mass at one end. Sectioning revealed a well-circumscribed, completely encapsulated mass composed of lobulated homogenous white tissue.

**Contributor: Karl Anders, M.D.**
**Woodland Hills, CA**

**Case No. 7 - February 2000**

**Tissue from: Thyroid**

**Accession #27805**

**Clinical Abstract:**

After experiencing shortness of breath, this 47-year-old female, with a history of heavy smoking, was found to have airway compromised due to a large mass in the right lobe of the thyroid. CT scan showed a large mass with a cystic component in the right neck, compressing the right trachea.

**Gross Pathology:**

This 22 gram, 7.5 x 3.5 x 1.8 cm thyroid lobectomy specimen included a 0.5 cm well-defined nodule near one end.

SPECIAL STUDIES (contributor's report):

| | |
|---|---|
| Cytokeratin: | positive |
| NSE: | positive |
| CEA: | positive |
| Calcitonin: | negative |
| LCA: | negative |

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**Contributor: Philip Robinson, M.D.**
**Boynton Beach, FL**

**Case No. 8 - February 2000**

**Tissue from: Right lobe of thyroid**

**Accession #28610**

**Clinical Abstract:**

This 49-year-old male presented with a mass on the right side of his neck. A right thyroidectomy was performed following a fine needle aspiration.

**Gross Pathology:**

This 48 gram, 4.8 x 4.5 x 3.9 cm portion of thyroid was largely replaced by a solitary nodule with a thin rim of thyroid or connective tissue.

**Contributor:** **W. Michael Green, M.D.**
**Oxnard, CA**

**Case No. 9 - February 2000**

**Tissue from:** **Left thyroid**

**Accession #28641**

**Clinical Abstract:**

This 42-year-old female presented with a mass in the left thyroid lobe.

**Gross Pathology:**

The specimen included a 3.0 cm well-circumscribed nodule.

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**Contributor:** **Chisa Aoyama, M.D.**
**Sylmar, CA**

**Case No. 10 - February 2000**

**Tissue from:** **Thyroid**

**Accession #28583**

**Clinical Abstract:**

For about a month this 62-year-old female experienced neck swelling, which was getting progressively painful and enlarging in size.

**Gross Pathology:**

The 4.8 x 4.0 x 3.0 cm specimen consisted of a single fragment of firm tissue with an apparent fibrous capsule. Sectioning revealed a tan-white cut surface with several lobulations.