



CALIFORNIA
TUMOR TISSUE REGISTRY

ENDOCRINE PATHOLOGY

Minutes – Subscription B

September 2010



SUGGESTED READING (General Topics from Recent Literature):

Molecular target therapy for gastroenteropancreatic endocrine tumours: biological rationale and clinical perspectives. Capurso G; Fazio N, et al. *Crit Rev Oncol Hematol* 2009 Nov;72(2): p110-24.

Progress in tailoring adjuvant endocrine therapy for postmenopausal women with early breast cancer. Bedard PL; Piccart-Gebhart MJ. *Curr Opin Oncol* 2009 Nov;21(6): p491-8.

Adipose tissue: the new endocrine organ? A review article. Wozniak SE; Gee LL, et al. *Dig Dis Sci* 2009 Sep;54(9): p1847-56.

Multiple endocrine neoplasias: advances and challenges for the future. Alevizaki M; Stratakis CA. *J Intern Med* 2009 Jul;266(1): p1-4.

Endocrine and autoimmune aspects of the health history of John F. Kennedy. Mandel LR. *Ann Intern Med* 2009 Sep 1;151(5): p350-4.

Influence of endocrine surgery on general surgery and surgical science. Clark OH. *Arch Surg* 2009 Sep;144(9): p800-5.

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FILE DIAGNOSES

CTTR Subscription B

September 2010

Case 1:

Papillary carcinoma, thyroid, with insular pattern
T-96000, M-80503

Case 2:

Papillary carcinoma, solid variant, thyroid
T-96000, M-80503

Case 3:

Papillary carcinoma, tall cell variant, thyroid
T-96000, M-80103

Case 4:

Papillary carcinoma with oncocytic/Hurthle cell features, thyroid
T-96000, M-82903

Case 5:

Dyshormonogenetic goiter (synthetic defect in T4 synthesis), thyroid
T-96000, D-2205

Case 6:

Parathyroid adenoma
T-97000, M-81400

Case 7:

Paraganglioma, retroperitoneum
T-Y4600, M-86801

Case 8:

Pheochromocytoma, adrenal gland
T-93000, M-87000

Case 9:

Insular carcinoma, thyroid
T-96000, M-80103

Case 10:

Hyalinizing trabecular adenoma
T-96000, M-81900

Glendale - Mixed medullary and follicular carcinoma
Loma Linda - Nodular goiter with adenomatous change
Newport Beach - Follicular carcinoma
Orinda (Kaiser Permanente) - Follicular thyroid carcinoma with insular features
San Diego (Naval Medical Center) - Papillary thyroid carcinoma, follicular variant
Georgia, Atlanta - Papillary thyroid carcinoma, follicular variant
Florida (Naples Pathology Associates) - Insular thyroid carcinoma
Illinois (Heartland Regional Medical Center) - Follicular carcinoma, encapsulated
Illinois (St. Mary's Hospital) - Poorly differentiated carcinoma (insular carcinoma)
Kansas (Coffeyville Regional Medical Center) - Poorly differentiated (insular) carcinoma of thyroid
Kansas (Peterson Laboratory Services) - Papillary carcinoma
Massachusetts (BWH Pathology) - Mixed follicular carcinoma and poorly differentiated carcinoma (insular type)
Michigan (Henry Ford Hospital Residents) - Follicular carcinoma
New York (Albany Medical Center) - Follicular carcinoma
New York SUNY Downstate Medical Center - Poorly differentiated thyroid carcinoma
New York (Westchester Medical Center) - Follicular carcinoma
Ohio, Columbus - Adenoid cystic carcinoma
Ohio (The Ohio State University) - Follicular carcinoma
Ohio (University of Toledo Pathology Residents) - Insular carcinoma of thyroid
Ohio (The Cleveland Clinic Pathology Residents) - Follicular carcinoma with insular features
Pennsylvania (Conemaugh Memorial Medical Center) - Thyroid papillary carcinoma with insular component
Pennsylvania (Drexel University College of Medicine) - Invasive follicular carcinoma
Puerto Rico (University of Puerto Rico) - Minimally invasive follicular carcinoma with areas of poorly differentiated carcinoma
Tennessee, Knoxville - Insular carcinoma
Texas, Crystal Beach - Thyroid carcinoma consistent with combination pattern (follicular papillary, insular)
Texas, Lubbock - Follicular carcinoma
Texas (Scott & White Memorial Hospital) - Insular carcinoma
Virginia (Dominion Pathology Associates) - Follicular carcinoma
Wisconsin, Madison - Neuroendocrine carcinoma, low grade
Australia (Royal Prince Alfred Hospital) - Follicular carcinoma with insular pattern
Canada (Pasqua Hospital) - Poorly differentiated thyroid carcinoma
Canada (University of Sherbrooke) - Follicular carcinoma with poorly differentiated areas
Japan (Asahi General Hospital) - Follicular carcinoma
Japan (Shizuoka Tokushu-kai Hospital) - Mixed medullary follicular carcinoma
Japan, Tokyo - Follicular carcinoma
Japan (University of Yamanashi) - Poorly differentiated carcinoma
Saudi Arabia (King Khalid University Hospital) - Minimally invasive follicular carcinoma of thyroid gland
Spain (Povisa Medical Center) - Mixed medullary follicular carcinoma

Case 1 - Diagnosis:

Papillary carcinoma, thyroid, with insular pattern
T-96000, M-80503

Director's note: Most of the slides showed an insular growth pattern, justifying the designation of "insular carcinoma."
A minority of the slides showed a follicular variant of papillary carcinoma. (drc)

Case 1 - References:

Insular thyroid carcinoma: collective analysis of clinicohistologic prognostic factors and treatment effect with radioiodine or radiation therapy. Lai HW; Lee CH, et al. *J Am Coll Surg* 2006 Nov;203(5): p715-22.

Insular carcinomas of the thyroid exhibit poor prognosis and long-term survival in comparison to follicular and papillary T4 carcinomas. Agha A; Glockzin G, et al. *Langenbecks Arch Surg* 2007 Nov;392(6): p671-7.

Cytologic features of insular carcinoma of the thyroid: a case report. Oertel YC; Miyahara-Felipe L. *Diagn Cytopathol* 2006 Aug;34(8): p572-5.

Metastatic insular thyroid carcinoma in the pediatric patient. Donnellan KA; Carron JD, et al. *Am J Otolaryngol* 2009 Jan-Feb;30(1): p61-4.

Intra-abdominal insular thyroid carcinoma metastasis. Meyer-Rochow GY; McMullen TP, et al. *Thyroid* 2009 May;19(5): p527-30.

Insular carcinoma of the thyroid with uncommon cytologic features: anisokaryotic cells and microfollicles containing dense colloid. Erkilic S; Kocer NE. *Pathol Res Pract* 2006;202(5): p389-93.

Case No. 2, Accession No. 31190

September 2010

Glendale - Follicular variant of papillary carcinoma
Loma Linda - Thyroid adenoma (oncocytic change)
Newport Beach - Papillary carcinoma, follicular variant
Orinda (Kaiser Permanente) - Hyalinizing trabecular tumor
San Diego (Naval Medical Center) - Papillary thyroid carcinoma
Georgia, Atlanta - Hyalinizing trabecular adenoma
Florida (Naples Pathology Associates) - Hurthle cell neoplasm, rule out carcinoma
Illinois (Heartland Regional Medical Center) - Papillary carcinoma, oxyphilic variant
Illinois (St. Mary's Hospital) - Papillary thyroid carcinoma
Kansas (Coffeyville Regional Medical Center) - Oncocytic carcinoma, thyroid
Kansas (Peterson Laboratory Services) - Papillary carcinoma, follicular variant
Massachusetts (BWH Pathology) - Hyalinizing trabecular neoplasm of thyroid gland
Michigan (Henry Ford Hospital Residents) - Papillary carcinoma, follicular variant
New York (Albany Medical Center) - Hurthle cell papillary carcinoma
New York SUNY Downstate Medical Center) - Papillary thyroid carcinoma/Hyalinizing trabecular adenoma
New York (Westchester Medical Center) - Papillary carcinoma, follicular variant
Ohio, Columbus - Follicular carcinoma
Ohio (The Ohio State University) - Papillary thyroid carcinoma, follicular variant
Ohio (University of Toledo Pathology Residents) - Papillary thyroid carcinoma, follicular variant
Ohio (The Cleveland Clinic Pathology Residents) - Papillary thyroid carcinoma, oncocytic variant
Pennsylvania (Conemaugh Memorial Medical Center) - Thyroid papillary carcinoma, oncocytic variant
Pennsylvania (Drexel University College of Medicine) - Papillary carcinoma, Hurthle cell variant
Puerto Rico (University of Puerto Rico) - Hyalinizing trabecular tumor/papillary carcinoma
Tennessee, Knoxville - Papillary thyroid carcinoma, follicular variant
Texas, Crystal Beach - Follicular adenoma, Hurthle cell type
Texas, Lubbock - Hurthle cell carcinoma
Texas (Scott & White Memorial Hospital) - Papillary carcinoma, follicular variant
Virginia (Dominion Pathology Associates) - Papillary carcinoma, oxyphilic variant
Wisconsin, Madison - Papillary carcinoma of thyroid
Australia (Royal Prince Alfred Hospital) - Oncocytic variant of papillary carcinoma
Canada (Pasqua Hospital) - Papillary carcinoma, follicular variant
Canada (University of Sherbrooke) - Hyalinizing trabecular neoplasm
Japan (Asahi General Hospital) - Oncocytic papillary carcinoma
Japan (Shizuoka Tokushu-kai Hospital) - Oncocytic carcinoma
Japan, Tokyo - Follicular adenoma
Japan (University of Yamanashi) - Papillary carcinoma, follicular and oxyphilic variant
Saudi Arabia (King Khalid University Hospital) - Papillary thyroid carcinoma (follicular variant)
Spain (Povisa Medical Center) - Papillary carcinoma, oncocytic variant

Case 2 - Diagnosis:

Papillary carcinoma, solid variant, thyroid
T-96000, M-80503

Consultation: Lester Thompson, MD: “Papillary carcinoma, solid variant, thyroid”

Case 2 - References:

Solid/trabecular variant papillary carcinoma of the thyroid: Report of three cases with fine-needle aspiration. Nguyen GK; Lee MW. *Diagn Cytopathol* 2006 Oct;34(10): p712-4.

A new BRAF gene mutation detected in a case of a solid variant of papillary thyroid carcinoma. Trovisco V; Soares P, et al. *Hum Pathol* 2005 Jun;36(6): p694-7.

BRAF mutation in solid cell nest hyperplasia associated with papillary thyroid carcinoma. A precursor lesion? Cameselle-Teijeiro J; Abdulkader I, et al. *Hum Pathol* 2009 Jul;40(7): p1029-35.

Case No. 3, Accession No. 31290

September 2010

Glendale - Papillary carcinoma
Loma Linda - Thyroid, papillary adenoma, calcific foci
Newport Beach - Papillary carcinoma
Orinda (Kaiser Permanente) - Tall cell variant of papillary thyroid carcinoma
San Diego (Naval Medical Center) - Papillary thyroid carcinoma, tall cell variant
Georgia, Atlanta - Papillary thyroid carcinoma
Florida (Naples Pathology Associates) - Papillary thyroid carcinoma
Illinois (Heartland Regional Medical Center) - Papillary carcinoma
Illinois (St. Mary's Hospital) - Papillary thyroid carcinoma
Kansas (Coffeyville Regional Medical Center) - Papillary carcinoma (tall cell variant), thyroid
Kansas (Peterson Laboratory Services) - Papillary carcinoma, tall cell
Massachusetts (BWH Pathology) - Thyroid papillary carcinoma of columnar cell type
Michigan (Henry Ford Hospital Residents) - Papillary carcinoma, conventional variant
New York (Albany Medical Center) - Tall cell papillary carcinoma
New York SUNY Downstate Medical Center - Poorly differentiated thyroid carcinoma (insular carcinoma)
New York (Westchester Medical Center) - Papillary carcinoma
Ohio, Columbus - Papillary thyroid carcinoma
Ohio (The Ohio State University) - Papillary thyroid carcinoma
Ohio (University of Toledo Pathology Residents) - Papillary thyroid carcinoma, tall cell variant
Ohio (The Cleveland Clinic Pathology Residents) - Papillary thyroid carcinoma with tall cell features
Pennsylvania (Conemaugh Memorial Medical Center) - Thyroid papillary carcinoma, tall cell variant
Pennsylvania (Drexel University College of Medicine) - Papillary carcinoma
Puerto Rico (University of Puerto Rico) - Papillary carcinoma, columnar cell variant
Tennessee, Knoxville - Papillary thyroid carcinoma
Texas, Crystal Beach - Papillary carcinoma
Texas, Lubbock - Papillary tall columnar variant
Texas (Scott & White Memorial Hospital) - Papillary carcinoma
Virginia (Dominion Pathology Associates) - Papillary carcinoma
Wisconsin, Madison - Papillary carcinoma, tall cell variant, thyroid
Australia (Royal Prince Alfred Hospital) - Papillary carcinoma of thyroid
Canada (Pasqua Hospital) - Papillary carcinoma
Canada (University of Sherbrooke) - Papillary carcinoma
Japan (Asahi General Hospital) - Papillary carcinoma
Japan (Shizuoka Tokushu-kai Hospital) - Papillary carcinoma

Japan, Tokyo - Papillary carcinoma
Japan (University of Yamanashi) - Papillary carcinoma
Saudi Arabia (King Khalid University Hospital) - Papillary thyroid carcinoma
Spain (Povisa Medical Center) - Papillary carcinoma

Case 3 - Diagnosis:

Papillary carcinoma, tall cell variant, thyroid
T-96000, M-80103

Case 3 - References:

Tall cell variant of papillary thyroid carcinoma: Its characteristic features demonstrated by fine-needle aspiration cytology and immunohistochemical study. Urano M; Kiriya Y, et al. *Diagn Cytopathol* 2009 Oct;37(10): p732-7.

Papillary thyroid carcinoma tall cell variant. Ghossein R; Livolsi VA. *Thyroid* 2008 Nov;18(11): p1179-81.

Prevalence and prognostic significance of tall cell variant of papillary thyroid carcinoma. Michels JJ; Jacques M, et al. *Hum Pathol* 2007 Feb;38(2): p212-9.

Tall cell variant of papillary carcinoma arising from a thyroglossal cyst: report of a case with diagnosis by fine needle aspiration cytology. Koybasioglu F; Simsek GG; Onal BU. *Acta Cytol* 2006 Mar-Apr;50(2): p221-4.

Tall cell variant of papillary thyroid carcinoma without extrathyroid extension: biologic behavior and clinical implications. Ghossein RA; Leboeuf R, et al. *Thyroid* 2007 Jul;17(7): p655-61.

Case No. 4, Accession No. 31171

September 2010

Glendale - Insular carcinoma
Loma Linda - Thyroid, nodular goiter consistent with hemorrhage in nodule
Newport Beach - Microfollicular carcinoma
Orinda (Kaiser Permanente) - Papillary thyroid carcinoma
San Diego (Naval Medical Center) - Papillary thyroid carcinoma, solid variant
Georgia, Atlanta - Poorly differentiated thyroid carcinoma with focal insular growth
Florida (Naples Pathology Associates) - Poorly differentiated carcinoma
Illinois (Heartland Regional Medical Center) - Follicular carcinoma
Illinois (St. Mary's Hospital) - Medullary thyroid carcinoma
Kansas (Coffeyville Regional Medical Center) - Poorly differentiated follicular carcinoma, thyroid
Kansas (Peterson Laboratory Services) - Follicular carcinoma
Massachusetts (BWH Pathology) - Hurthle cell papillary carcinoma
Michigan (Henry Ford Hospital Residents) - Hyalinizing trabecular carcinoma
New York (Albany Medical Center) - Follicular carcinoma
New York SUNY Downstate Medical Center - Hurthle cell carcinoma/Papillary carcinoma-oncocyctic variant
New York (Westchester Medical Center) - Papillary carcinoma, solid variant
Ohio, Columbus - Papillary thyroid carcinoma
Ohio (The Ohio State University) - Papillary thyroid carcinoma
Ohio (University of Toledo Pathology Residents) - Papillary thyroid carcinoma, solid variant
Ohio (The Cleveland Clinic Pathology Residents) - Papillary thyroid carcinoma, solid variant
Pennsylvania (Conemaugh Memorial Medical Center) - Follicular neoplasm, malignancy isn't excluded
Pennsylvania (Drexel University College of Medicine) - Papillary carcinoma, solid variant
Puerto Rico (University of Puerto Rico) - Papillary carcinoma, solid variant (5); Hyalinizing trabecular tumor (5)
Tennessee, Knoxville - Poorly differentiated thyroid carcinoma
Texas, Crystal Beach - Thyroid trabecular adenoma
Texas, Lubbock - Follicular carcinoma
Texas (Scott & White Memorial Hospital) - Papillary carcinoma
Virginia (Dominion Pathology Associates) - Papillary carcinoma, solid variant

Wisconsin, Madison - Papillary thyroid carcinoma, insular type
Australia (Royal Prince Alfred Hospital) - Insular carcinoma
Canada (Pasqua Hospital) - Papillary carcinoma
Canada (University of Sherbrooke) - Papillary carcinoma (solid variant)
Japan (Asahi General Hospital) - Follicular adenoma
Japan (Shizuoka Tokushu-kai Hospital) - Hyalinizing trabecular adenoma
Japan, Tokyo - Follicular carcinoma
Japan (University of Yamanashi) - Follicular carcinoma, widely invasive
Saudi Arabia (King Khalid University Hospital) - Follicular carcinoma/Hurthle cell carcinoma of thyroid
Spain (Povisa Medical Center) - Papillary carcinoma, solid variant

Case 4 - Diagnosis:

Papillary carcinoma with oncocytic/Hurthle cell features, thyroid
 T-96000, M-82903

Case 4 - References:

Oncocytic variant of papillary thyroid carcinoma associated with Hashimoto's thyroiditis: a case report and review of the literature. Lee J; Hasteh F. *Diagn Cytopathol* 2009 Aug;37(8): p600-6.

Clinicopathologic features and outcome of the oncocytic variant of papillary thyroid carcinoma. Gross M; Eliashar R, et al. *Ann Otol Rhinol Laryngol* 2009 May;118(5): p374-81.

The thyroid Hurthle (oncocytic) cell and its associated pathologic conditions: a surgical pathology and cytopathology review. Montone KT; Baloch ZW; Li Volsi VA. *Arch Pathol Lab Med* 2008 Aug;132(8): p1241-50.

Special variants of differentiated thyroid cancer: does it alter the extent of surgery versus well-differentiated thyroid cancer? Carling T; Ocal IT; Udelsman R. *World J Surg* 2007 May;31(5): p916-23.

Case No. 5, Accession No. 30162

September 2010

Glendale - Hashimoto's thyroiditis with hyperplastic Hurthle cell nodules
Loma Linda - Hashimoto's disease, nodular goiter
Newport Beach - Chronic thyroiditis with scarring
Orinda (Kaiser Permanente) - Hashimoto's thyroiditis
San Diego (Naval Medical Center) - Follicular thyroid carcinoma with Hurthloid features
Georgia, Atlanta - Hurthle cell neoplasm arising in Hashimoto's thyroiditis
Florida (Naples Pathology Associates) - Hashimoto's thyroiditis with hyperplastic Hurthle nodules
Illinois (Heartland Regional Medical Center) - Hashimoto's thyroiditis with nodular hyperplasia
Illinois (St. Mary's Hospital) - Follicular carcinoma
Kansas (Coffeyville Regional Medical Center) - Nodular hyperplastic and thyroiditis
Kansas (Peterson Laboratory Services) - Nodular lymphocytic thyroiditis with atypia
Massachusetts (BWH Pathology) - Hurthle cell tumor with follicular pattern (favor adenoma)
Michigan (Henry Ford Hospital Residents) - Hashimoto's thyroiditis
New York (Albany Medical Center) - Diffuse hyperplasia
New York SUNY Downstate Medical Center - Follicular carcinoma
New York (Westchester Medical Center) - Hurthle cell carcinoma
Ohio, Columbus - Multinodular hyperplasia
Ohio (The Ohio State University) - Hurthle cell change in a background of lymphocytic thyroiditis
Ohio (University of Toledo Pathology Residents) - Hashimoto's thyroiditis
Ohio (The Cleveland Clinic Pathology Residents) - Lymphocytic thyroiditis
Pennsylvania (Conemaugh Memorial Medical Center) - Hashimoto's thyroiditis with Hurthle cell adenomatoid hyperplasia
Pennsylvania (Drexel University College of Medicine) - Multinodular goiter
Puerto Rico (University of Puerto Rico) - Minimally invasive follicular carcinoma/Hurthle cell hyperplasia arising in a multinodular goiter

Tennessee, Knoxville - Nodular hyperplasia with Hurthle cell change
Texas, Crystal Beach - Follicular carcinoma in Hashimoto's
Texas, Lubbock - Follicular carcinoma
Texas (Scott & White Memorial Hospital) - Hurthle cell carcinoma
Virginia (Dominion Pathology Associates) - Nodular hyperplasia with chronic lymphocytic thyroiditis
Wisconsin, Madison - Hyperplastic adenomatous goiter
Australia (Royal Prince Alfred Hospital) - Multinodular goiter with Hashimoto's thyroiditis
Canada (Pasqua Hospital) - Multinodular goiter in Hashimoto's thyroiditis
Canada (University of Sherbrooke) - Multinodular goiter and Hashimoto's thyroiditis
Japan (Asahi General Hospital) - Atypical adenoma
Japan (Shizuoka Tokushu-kai Hospital) - Nodular Hashimoto thyroiditis
Japan, Tokyo - Hashimoto's disease
Japan (University of Yamanashi) - Hyperplastic nodules in the background of Hashimoto thyroiditis
Saudi Arabia (King Khalid University Hospital) - Hurthle cell nodule in a background of Hashimoto's thyroiditis
Spain (Povisa Medical Center) - Minimally invasive follicular carcinoma

Case 5 - Diagnosis:

Dyshormonogenetic goiter (synthetic defect in T4 synthesis), thyroid
 T-96000, D-2205

Case 5 - References:

Dyshormonogenetic goiter of the thyroid gland. Thompson L. *Ear Nose Throat J* 2005 Apr;84(4): p200.

Dyshormonogenetic goiter: clinicopathologic study of four cases] Chang XY; Jiang Y, et al. *Zhonghua Bing Li Xue Za Zhi* 2007 Jan;36(1): p39-42.

Cytological features of dyshormonogenetic goiter: case report and review of the literature. Deshpande AH; Bobhate SK. *Diagn Cytopathol* 2005 Oct;33(4): p252-4.

Papillary carcinoma of the thyroid developed in congenital dyshormonogenetic hypothyroidism without goiter: Diagnosis by FNAB. Drut R; Moreno A. *Diagn Cytopathol* 2009 Oct;37(10): p707-9.

Case No. 6, Accession No. 8038

September 2010

Glendale - Parathyroid adenoma
Loma Linda - Parathyroid adenoma
Newport Beach - Parathyroid adenoma
Orinda (Kaiser Permanente) - Parathyroid adenoma
San Diego (Naval Medical Center) - Atypical parathyroid adenoma
Georgia, Atlanta - Parathyroid adenoma
Florida (Naples Pathology Associates) - Parathyroid adenoma
Illinois (Heartland Regional Medical Center) - Parathyroid adenoma
Illinois (St. Mary's Hospital) - Parathyroid adenoma
Kansas (Coffeyville Regional Medical Center) - Parathyroid adenoma
Kansas (Peterson Laboratory Services) - Parathyroid carcinoma
Massachusetts (BWH Pathology) - Parathyroid carcinoma
Michigan (Henry Ford Hospital Residents) - Parathyroid adenoma
New York (Albany Medical Center) - Parathyroid adenoma
New York SUNY Downstate Medical Center) - Parathyroid adenoma
New York (Westchester Medical Center) - Parathyroid adenoma
Ohio, Columbus - Parathyroid adenoma
Ohio (The Ohio State University) - Parathyroid adenoma
Ohio (University of Toledo Pathology Residents) - Parathyroid adenoma
Ohio (The Cleveland Clinic Pathology Residents) - Parathyroid adenoma
Pennsylvania (Conemaugh Memorial Medical Center) - Parathyroid neoplasm, favor carcinoma

Pennsylvania (Drexel University College of Medicine) - Parathyroid adenoma
Puerto Rico (University of Puerto Rico) - Parathyroid adenoma without hyperparathyroidism/ thyroid adenoma
Tennessee, Knoxville - Parathyroid adenoma
Texas, Crystal Beach - Follicular adenoma consistent with papillary hyperplasia
Texas, Lubbock - Parathyroid adenoma
Texas (Scott & White Memorial Hospital) - Parathyroid adenoma
Virginia (Dominion Pathology Associates) - Parathyroid adenoma
Wisconsin, Madison - Parathyroid adenoma
Australia (Royal Prince Alfred Hospital) - Atypical parathyroid adenoma
Canada (Pasqua Hospital) - Parathyroid adenoma
Canada (University of Sherbrooke) - Parathyroid adenoma
Japan (Asahi General Hospital) - Parathyroid adenoma
Japan (Shizuoka Tokushu-kai Hospital) - Parathyroid carcinoma
Japan, Tokyo - Parathyroid adenoma
Japan (University of Yamanashi) - Parathyroid adenoma
Saudi Arabia (King Khalid University Hospital) - Parathyroid adenoma
Spain (Povisa Medical Center) - Parathyroid adenoma

Case 6 - Diagnosis:

Parathyroid adenoma
 T-97000, M-81400

Case 6 - References:

Parathyroid chief cell adenoma associated with massive chronic parathyroiditis in a woman with hyperparathyroidism.
 Kovacs K; Bell CD, et al. *Endocr Pathol* 2007 Spring;18(1): p42-5.

Parathyroid fine-needle aspiration cytology in the evaluation of parathyroid adenoma: cytologic findings from 53 patients. Agarwal AM; Bentz JS, et al. *Diagn Cytopathol* 2009 Jun;37(6): p407-10.

Impact of adenoma weight and ectopic location of parathyroid adenoma on localization study results. Erbil Y; Barbaros U, et al. *World J Surg* 2008 Apr;32(4): p566-71.

Silent parathyroid adenoma mistakenly interpreted on FDG-PET as thyroid cancer metastasis in a patient with elevated thyroglobulin and negative I-131 whole body scan and removed by radioguided minimally invasive surgery. Mendoza PL; Ongkeko EE; Santiago JF. *Clin Nucl Med* 2008 Jan;33(1): p23-5.

Parathyroid carcinoma, atypical parathyroid adenoma, or parathyromatosis? Fernandez-Ranvier GG; Khanafshar E, et al. *Cancer* 2007 Jul 15;110(2): p255-64.

Case No. 7, Accession No. 8153

September 2010

Glendale - Carcinoid
Loma Linda - Adrenal pheochromocytoma, apparently malignant
Newport Beach - Pheochromocytoma
Orinda (Kaiser Permanente) - Neuroendocrine carcinoma (pancreatic)
San Diego (Naval Medical Center) - Paraganglioma
Georgia, Atlanta - Paraganglioma
Florida (Naples Pathology Associates) - Malignant carcinoid tumor
Illinois (Heartland Regional Medical Center) - Leydig cell tumor
Illinois (St. Mary's Hospital) - Well-differentiated neuroendocrine carcinoma
Kansas (Coffeyville Regional Medical Center) - Paraganglioma
Kansas (Peterson Laboratory Services) - Adrenal cortical carcinoma
Massachusetts (BWH Pathology) - Adrenal cortical carcinoma
Michigan (Henry Ford Hospital Residents) - Paraganglioma/pheochromocytoma
New York (Albany Medical Center) - Malignant pheochromocytoma

New York SUNY Downstate Medical Center - Pancreatic endocrine neoplasm, neuroendocrine carcinoma
New York (Westchester Medical Center) - Paraganglioma
Ohio, Columbus - Well-differentiated neuroendocrine neoplasm
Ohio (The Ohio State University) - Adrenal cortical carcinoma
Ohio (University of Toledo Pathology Residents) - Pheochromocytoma
Ohio (The Cleveland Clinic Pathology Residents) - Paraganglioma
Pennsylvania (Conemaugh Memorial Medical Center) - Paraganglioma with necrosis, hemorrhage
Pennsylvania (Drexel University College of Medicine) - Paraganglioma
Puerto Rico (University of Puerto Rico) - Paraganglioma vs. endocrine neoplasm
Tennessee, Knoxville - Adrenocortical carcinoma
Texas, Crystal Beach - Solid-pseudopapillary tumor of pancreas
Texas, Lubbock - Adrenal cortical carcinoma
Texas (Scott & White Memorial Hospital) - Adrenocortical carcinoma
Virginia (Dominion Pathology Associates) - Paraganglioma
Wisconsin, Madison - Neuroendocrine tumor consistent with paraganglioma
Australia (Royal Prince Alfred Hospital) - Paraganglioma
Canada (Pasqua Hospital) - Paraganglioma
Canada (University of Sherbrooke) - Pheochromocytoma (malignant)
Japan (Asahi General Hospital) - Paraganglioma
Japan (Shizuoka Tokushu-kai Hospital) - Adrenal cortical carcinoma
Japan, Tokyo - Adrenal cortical carcinoma
Japan (University of Yamanashi) - Paraganglioma
Saudi Arabia (King Khalid University Hospital) - Low grade neuroendocrine tumor
Spain (Povisa Medical Center) - Paraganglioma

Case 7 - Diagnosis:

Paraganglioma, retroperitoneum
 T-Y4600, M-86801

Case 7 - References:

Cytologic features of pheochromocytoma and retroperitoneal paraganglioma: a morphologic and immunohistochemical study of 13 cases. Jimenez-Heffernan JA; Vicandi B, et al. *Acta Cytol* 2006 Jul-Aug;50(4): p372-8.
 Cytomorphologic spectrum in paraganglioma. Varma K; Jain S; Mandal S. *Acta Cytol* 2008 Sep-Oct;52(5): p549-56.
 Parasympathetic paragangliomas are part of the Von Hippel-Lindau syndrome. Gaal J; van Nederveen FH, et al. *J Clin Endocrinol Metab* 2009 Nov;94(11): p4367-71.
 Clinicopathological analysis of paraganglioma with literature review. Feng N; Zhang WY; Wu XT. *World J Gastroenterol* 2009 Jun 28;15(24): p3003-8.
 Biopsy of pheochromocytomas and paragangliomas: potential for disaster. Vanderveen KA; Thompson SM, et al. *Surgery* 2009 Dec;146(6): p1158-66.

Case No. 8, Accession No. 15080

September 2010

Glendale - Pheochromocytoma
Loma Linda - Adrenal hyperplasia with pheochromocytoma
Newport Beach - Adrenal adenoma
Orinda (Kaiser Permanente) - Pheochromocytoma
San Diego (Naval Medical Center) - Pheochromocytoma
Georgia, Atlanta - Pheochromocytoma
Florida (Naples Pathology Associates) - Pheochromocytoma
Illinois (Heartland Regional Medical Center) - Pheochromocytoma
Illinois (St. Mary's Hospital) - Pheochromocytoma

Kansas (Coffeyville Regional Medical Center) - Pheochromocytoma
Kansas (Peterson Laboratory Services) - Pheochromocytoma
Massachusetts (BWH Pathology) - Adrenal pheochromocytoma
Michigan (Henry Ford Hospital Residents) - Pheochromocytoma
New York (Albany Medical Center) - Pheochromocytoma
New York SUNY Downstate Medical Center) - Pheochromocytoma
New York (Westchester Medical Center) - Pheochromocytoma
Ohio, Columbus - Pheochromocytoma
Ohio (The Ohio State University) - Pheochromocytoma
Ohio (University of Toledo Pathology Residents) - Extra adrenal abdominal paraganglioma
Ohio (The Cleveland Clinic Pathology Residents) - Pheochromocytoma
Pennsylvania (Conemaugh Memorial Medical Center) - Pheochromocytoma
Pennsylvania (Drexel University College of Medicine) - Pheochromocytoma
Puerto Rico (University of Puerto Rico) - Pheochromocytoma
Tennessee, Knoxville - Pheochromocytoma
Texas, Crystal Beach - Adrenal medullary hyperplasia, nodular
Texas, Lubbock - Pheochromocytoma
Texas (Scott & White Memorial Hospital) - Pheochromocytoma
Virginia (Dominion Pathology Associates) - Pheochromocytoma
Wisconsin, Madison - Pheochromocytoma
Australia (Royal Prince Alfred Hospital) - Pheochromocytoma
Canada (Pasqua Hospital) - Pheochromocytoma
Canada (University of Sherbrooke) - Pheochromocytoma
Japan (Asahi General Hospital) - Pheochromocytoma
Japan (Shizuoka Tokushu-kai Hospital) - Pheochromocytoma
Japan, Tokyo - Composite endocrine tumor
Japan (University of Yamanashi) - Pheochromocytoma
Saudi Arabia (King Khalid University Hospital) - Pheochromocytoma
Spain (Povisa Medical Center) - Pheochromocytoma

Case 8 - Diagnosis:

Pheochromocytoma, adrenal gland
 T-93000, M-87000

Case 8 - References:

Clinical spectrum of pheochromocytoma. Guerrero MA; Schreinemakers JM, et al. *J Am Coll Surg* 2009 Dec;209(6): p727-32.

 Biopsy of pheochromocytomas and paragangliomas: potential for disaster. Vanderveen KA; Thompson SM, et al. *Surgery* 2009 Dec;146(6): p1158-66.

 Composite pheochromocytoma: a clinicopathologic and molecular comparison with ordinary pheochromocytoma and neuroblastoma. Comstock JM; Willmore-Payne C, et al. *Am J Clin Pathol* 2009 Jul;132(1): p69-73.

 Adrenal pheochromocytoma with surrounding brown fat stimulation. Iyer RB; Guo CC; Perrier N. *AJR Am J Roentgenol* 2009 Jan;192(1): p300-1.

Case No. 9, Accession No. 7654

September 2010

Glendale - Follicular carcinoma
Loma Linda - Nodular goiter with adenomatous change
Newport Beach - Multinodular goiter with chronic thyroiditis
Orinda (Kaiser Permanente) - Oncocytic adenoma
San Diego (Naval Medical Center) - Follicular thyroid carcinoma
Georgia, Atlanta - Papillary thyroid carcinoma with focal tall cell change

Florida (Naples Pathology Associates) - Poorly differentiated carcinoma with insular and follicular features
Illinois (Heartland Regional Medical Center) - Follicular carcinoma, poorly differentiated
Illinois (St. Mary's Hospital) - Poorly differentiated carcinoma (insular carcinoma)
Kansas (Coffeyville Regional Medical Center) - Medullary carcinoma, thyroid
Kansas (Peterson Laboratory Services) - Medullary carcinoma
Massachusetts (BWH Pathology) - Hurthle cell carcinoma of thyroid gland
Michigan (Henry Ford Hospital Residents) - Hurthle cell neoplasm
New York (Albany Medical Center) - Poorly differentiated carcinoma
New York SUNY Downstate Medical Center - Poorly differentiated follicular carcinoma
New York (Westchester Medical Center) - Poorly differentiated thyroid carcinoma
Ohio, Columbus - Hurthle cell neoplasm
Ohio (The Ohio State University) - Hurthle cell neoplasm
Ohio (University of Toledo Pathology Residents) - Follicular thyroid carcinoma
Ohio (The Cleveland Clinic Pathology Residents) - Hurthle cell carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Hurthle cell carcinoma
Pennsylvania (Drexel University College of Medicine) - Papillary carcinoma, follicular variant
Puerto Rico (University of Puerto Rico) - Poorly differentiated carcinoma
Tennessee, Knoxville - Hurthle cell carcinoma
Texas, Crystal Beach - Thyroid carcinoma, insular type
Texas, Lubbock - Follicular carcinoma
Texas (Scott & White Memorial Hospital) - Follicular carcinoma
Virginia (Dominion Pathology Associates) - Hurthle cell neoplasm
Wisconsin, Madison - Thyroid follicular carcinoma
Australia (Royal Prince Alfred Hospital) - Follicular carcinoma (oncocytic type)
Canada (Pasqua Hospital) - Medullary carcinoma
Canada (University of Sherbrooke) - Papillary carcinoma (tall cell variant)
Japan (Asahi General Hospital) - Poorly differentiated carcinoma
Japan (Shizuoka Tokushu-kai Hospital) - Oncocytic carcinoma
Japan, Tokyo - Follicular carcinoma
Japan (University of Yamanashi) - Poorly differentiated carcinoma
Saudi Arabia (King Khalid University Hospital) - Follicular/Hurthle cell carcinoma of thyroid
Spain (Povisa Medical Center) - Follicular carcinoma oncocytic variant

Case 9 - Diagnosis:

Insular carcinoma, thyroid
 T-96000, M-80103

Case 9 - References:

Insular carcinomas of the thyroid exhibit poor prognosis and long-term survival in comparison to follicular and papillary T4 carcinomas. Agha A; Glockzin G, et al. *Langenbecks Arch Surg* 2007 Nov;392(6): p671-7.

Cytologic features of insular carcinoma of the thyroid: a case report. Oertel YC; Miyahara-Felipe L. *Diagn Cytopathol* 2006 Aug;34(8): p572-5.

Significance of an insular component in follicular thyroid carcinoma with distant metastasis at initial presentation. Yamashita H; Noguchi Y, et al. *Endocr Pathol* 2005 Spring;16(1): p41-8.

Insular-type component follicular thyroid carcinoma in a 10-year-old girl--case report. Prommegger R; Haussler B, et al. *J Pediatr Surg* 2006 Jun;41(6): pe5-7.

Insular thyroid carcinoma: collective analysis of clinicohistologic prognostic factors and treatment effect with radioiodine or radiation therapy. Lai HW; Lee CH, et al. *J Am Coll Surg* 2006 Nov;203(5): p715-22.

Glendale - Medullary carcinoma
Loma Linda - Thyroid, follicular adenoma, very vascular
Newport Beach - Parathyroid adenoma
Orinda (Kaiser Permanente) - Medullary thyroid carcinoma
San Diego (Naval Medical Center) - Papillary thyroid carcinoma
Georgia, Atlanta - Follicular adenoma, spindle cell type
Florida (Naples Pathology Associates) - Hyalinizing trabecular adenoma
Illinois (Heartland Regional Medical Center) - Papillary carcinoma, solid (trabecular) pattern, encapsulated
Illinois (St. Mary's Hospital) - Medullary thyroid carcinoma
Kansas (Coffeyville Regional Medical Center) - Medullary carcinoma, small cell variant
Kansas (Peterson Laboratory Services) - Hyalinizing trabecular adenoma
Massachusetts (BWH Pathology) - Medullary carcinoma of thyroid gland
Michigan (Henry Ford Hospital Residents) - Medullary carcinoma
New York (Albany Medical Center) - Follicular adenoma
New York SUNY Downstate Medical Center - Hyalinizing trabecular adenoma
New York (Westchester Medical Center) - Papillary carcinoma
Ohio, Columbus - Amyloid goiter
Ohio (The Ohio State University) - Amyloid goiter
Ohio (University of Toledo Pathology Residents) - Hyalinizing trabecular adenoma of thyroid
Ohio (The Cleveland Clinic Pathology Residents) - Hyalinizing trabecular tumor of the thyroid
Pennsylvania (Conemaugh Memorial Medical Center) - Thyroid medullary carcinoma
Pennsylvania (Drexel University College of Medicine) - Follicular adenoma
Puerto Rico (University of Puerto Rico) - Medullary thyroid carcinoma/papillary carcinoma, diffuse sclerosing variant
Tennessee, Knoxville - Medullary thyroid carcinoma
Texas, Crystal Beach - Follicular adenoma (or adenomatous hyperplasia)
Texas, Lubbock - Follicular carcinoma
Texas (Scott & White Memorial Hospital) - Hyalinizing trabecular adenoma
Virginia (Dominion Pathology Associates) - Follicular adenoma
Wisconsin, Madison - Medullary carcinoma vs. papillary carcinoma
Australia (Royal Prince Alfred Hospital) - Medullary carcinoma of thyroid
Canada (Pasqua Hospital) - Hyalinizing trabecular adenoma
Canada (University of Sherbrooke) - Hyalinizing trabecular neoplasm
Japan (Asahi General Hospital) - Hyalinizing trabecular tumor
Japan (Shizuoka Tokushu-kai Hospital) - Hyalinizing trabecular adenoma
Japan, Tokyo - Follicular carcinoma
Japan (University of Yamanashi) - Mixed medullary and follicular carcinoma
Saudi Arabia (King Khalid University Hospital) - Hyalinizing trabecular adenoma
Spain (Povisa Medical Center) - Medullary carcinoma

Case 10 - Diagnosis:

Hyalinizing trabecular adenoma
T-96000, M-81900

Consultation, Lester Thompson, MD: "Hyalinizing trabecular adenoma"

Case 10 - References:

Hyalinizing trabecular tumors of the thyroid gland are almost all benign. Carney JA; Hirokawa M, et al. *Am J Surg Pathol* 2008 Dec;32(12): p1877-89.

Hyalinizing trabecular adenoma of the thyroid revisited: a histologic and immunohistochemical study of thyroid lesions with prominent trabecular architecture and sclerosis. Galgano MT; Mills SE; Stelow EB. *Am J Surg Pathol* 2006 Oct;30(10): p1269-73.

Hyalinizing trabecular tumors of the thyroid gland: quadruply described but not by the discoverer. Carney JA. *Am J Surg Pathol* 2008 Apr;32(4): p622-34.

Hyalinizing trabecular adenoma--an uncommon thyroid tumor frequently misdiagnosed as papillary or medullary thyroid carcinoma. Evenson A; Mowschenson P, et al. *Am J Surg* 2007 Jun;193(6): p707-12.

Hyalinizing trabecular carcinoma of the thyroid gland. Gowrishankar S; Pai SA; Carney JA. *Histopathology* 2008 Mar;52(4): p529-31.