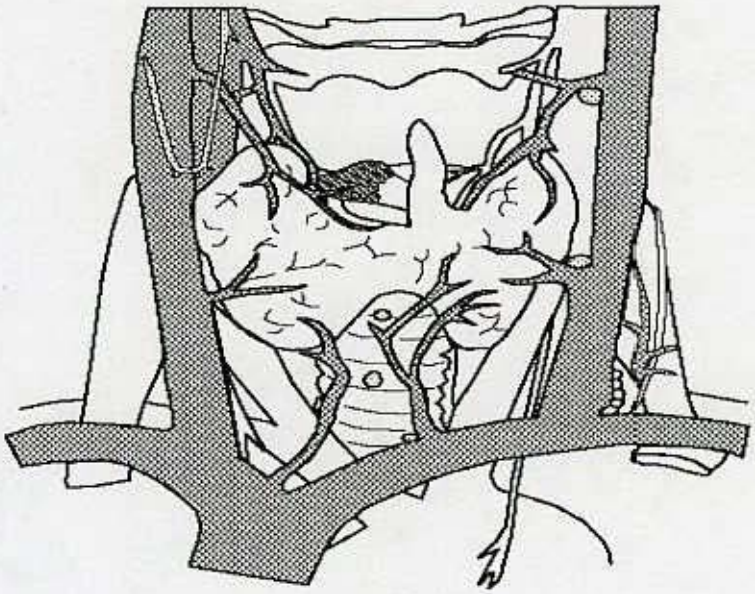
1324

CALIFORNIA
TUMOR TISSUE REGISTRY

"ENDOCRINE PATHOLOGY"

Study Cases, Subscription B

November 2002



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

Target audience:
Practicing pathologists and pathology residents.

Goal:
To acquaint the participant with the histologic features of a variety of benign and malignant neoplasms and tumor-like conditions.

Objectives:
The participant will be able to recognize morphologic features of a variety of benign and malignant neoplasms and tumor-like conditions and relate those processes to pertinent references in the medical literature.

Educational methods and media:
Review of representative glass slides with associated histories.
Feedback on consensus diagnoses from participating pathologists.
Listing of selected references from the medical literature.

Principal faculty:
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: Pamela Boswell, D.O.
San Diego, CA

Case No. 1 - November 2002

Tissue from: Left thyroid gland

Accession #29212

Clinical Abstract:

With congestive heart failure, this 60-year-old male underwent radiographic studies. Results showed a large left thyroid gland mass that was compressing the brachiocephalic area.

Gross Pathology:

The specimen was a 16.0 x 6.5 x 6.5 cm lobulated portion of red brown glistening tissue. Sections revealed a multinodular tan-brown parenchyma with a well-circumscribed 7.0 cm nodule with central fibrosis. There were occasional small cystic spaces present throughout the specimen.

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

Case No. 2 - November 2002

Tissue from: Left thyroid lobe

Accession #28965

Clinical Abstract:

This 81-year-old female had a history of kidney removal. A mass was noted on her left thyroid. Thyroidectomy was performed

Gross Pathology:

The brown lobe of the thyroid weighed 26 grams and measured 5.0 x 4.0 x 2.0 cm. The outer surface had a fistulous tract present. On cut sections there was a central area with 2.5 cm yellow necrotic tissue that was surrounded by thick white tissue. Away from this nodule, the surface was nodular. There was a separate nodule that appeared to be white to yellow with focal hemorrhage, and measured 1.2 cm.

SPECIAL STUDIES:

Cytokeratin	positive
EMA	positive
Chromogranin	positive
Synaptophysin	positive

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

Case No. 3 - November 2002

Tissue from: Thyroid

Accession #28705

Clinical Abstract:

This 19-year-old female noticed a lump on the right side of her neck a year prior to admission. She complained of moderate pressure-type discomfort and ten pounds weight loss within six months. Thyroidectomy was performed.

Gross Pathology:

This was a portion of the thyroid that weighed 22 grams. Both lobes were present, although the upper portion of the first lobe that measured 3.5 x 2.5 cm was missing, it was distended and had a smooth surface. Cut sections revealed dark-red coarsely granular surface. The lobe with the isthmus measured 3.7 x 2.5 1.5 cm, with serial sections that showed dark-red smooth surface.

Contributor: Scott Silveira, M.D.
Dearborn, MI

Case No. 4 - November 2002

Tissue from: Right thyroid lobe

Accession #29543

Clinical Abstract:

With a clinically followed thyroid nodule for two years and a year of Synthroid medication for hypothyroidism, this 38-year-old female underwent a right thyroid lobectomy. The surgeon noted a large, firm thyroid lobe and a recurrent laryngeal nerve invading the tumor. The right neck lymph node was dissected due to obvious involvement.

Gross Pathology:

The thyroid lobe weighed 56 grams, and measured 7.0 x 4.5 x 3.0 cm. It was quite firm and had a smooth tan exterior. Serial sections revealed homogeneity. Bisections showed a firm pale yellow interior all throughout. There were firm nodules with hard yellow cut surfaces palpated.

Contributor: LLUMC Pathology Group (bhl)
Loma Linda, CA

Case No. 5 - November 2002

Tissue from: Parathyroid

Accession #29263

Clinical Abstract:

This is a 32-year-old female that has history of smoking an average of ten cigarettes a day, schizophrenia and hyperparathyroidism. A resection of the thyroid and the parathyroid gland was performed.

Gross Pathology:

The specimen consisted of a 50 gram, 7.5 x 4.5 x 3.0 cm parathyroid gland and a contiguous 10 gram, 3.5 x 2.5 x 1.0 cm thyroid. Within the brown tan parenchyma were multiple smooth walled, small hemorrhagic cysts that measured up to 1.0 cm in diameter.

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

Case No. 6 - November 2002

Tissue from: Pancreas

Accession #29424

Clinical Abstract:

Six months prior to admission, this 76-year-old female experienced epigastric discomfort that radiated to her back, and had breathing problems for more than a year. CT scan revealed a sizable mass located in the body and tail of her pancreas. Distal subtotal pancreatectomy and splenectomy were performed.

Gross Pathology:

The 11.0 x 10.0 x 9.0 cm, 230 gram distal portion of the pancreas was in the form of a large tumor mass. It appeared to be encapsulated and lobulated with multiple grossly visible cyst-like elevations up to 1.5 cm in diameter. Cross sections appeared spongy and multiloculated with spaces that are minute and measured 1.0 to 2.0 cm in diameter. Spaces contained serous-type fluid without any mucinous element identified.

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

Case No. 7 - November 2002

Tissue from: Pancreas

Accession #29506

Clinical Abstract:

In March of 2001, this 76-year-old diabetic male had a workup for abdominal bruit. CT scan showed a mild abnormality of the bile duct. A follow-up scan by May of the same year showed a dominant lesion in the inferior uncinate portion of the pancreas. He underwent an extended Whipple operation with Stramm gastrotomy and omentectomy.

Gross Pathology:

The neck of the pancreas was slightly enlarged and firm when palpated. Cut sections showed a circumscribed yellow-tan neoplasm in the uncinate process that measured 11.0 x 10.0 x 15.0 mm. The central portion was a 5.0 mm cystic, hemorrhagic, degenerated area. The neoplasm measured approximately 30.0 mm from the wall of the duodenum and 15.0 mm from the inferior edge of the pancreas. Serial sections across the pancreas showed a soft yellow-tan lobulated parenchyma.

Contributor: Greg Peterson, M.D.
Sioux Falls, SD

Case No. 8 - November 2002

Tissue from: Pancreas

Accession #28955

Clinical Abstract:

At the age of 69, this female developed a cystic neoplasm in the distal area of the pancreas. Right nephrectomy, distal pancreatectomy, and splenectomy were performed.

Gross Pathology:

The specimen consisted of the distal pancreas with attached spleen. Pancreas area measured 4.5 x 4.5 cm. Sections the tail of the pancreas showed a 3.0 x 2.0 x 2.0 cm bulging, mucinous, cystic mass that extended 1.2 cm within the proximal pancreatic margin.

Contributor: Xeudong Wang, M. D.
Pasadena, CA

Case No. 9 - November 2002

Tissue from: Adrenal gland

Accession #29472

Clinical Abstract:

During her late stages of pregnancy, this 33-year-old female developed multiple medical problems. She had seizures and was diagnosed with fetal demised at 36 weeks gestation, had infarcts in the right upper parietal occipital, left brain, left mid brain and right cerebellum. She had dialysis for acute renal failure, ARDS that required a ventilator, and DIC. She developed panhypopituitarim, bilateral subdural hematomas, diabetes incipidus, and ptosis. While admitted, a mass in her right adrenal gland was noted with very high norepinephrine levels. Adrenalectomy was performed.

Gross Pathology:

The specimen was an enlarged encapsulated adrenal gland with attached fibrofatty tissues that weighed 120 grams, and measured 7.5 x 6.5 x 4.8 cm. The surface was cover with purple/red focally hemorrhagic, membranous tissue. Central cut surface was yellow/gray and necrotic with golden brown and pink area surrounding it.

Contributor: LLUMC Pathology group (mrd)
Loma Linda, CA

Case No. 10 - November 2002

Tissue from: Right adrenal gland

Accession #29239

Clinical Abstract:

Admitted for endocrine laboratory tests during her 21st week gestation, this 21-year-old female had a tumor found in her right adrenal gland. Excisional biopsy was performed.

Gross Pathology:

This is a108 gram, 7.0 x 6.0 x 4.5 cm encapsulated , well circumscribed, orange tumor.

CALIFORNIA
TUMOR TISSUE REGISTRY

"ENDOCRINE PATHOLOGY"

Minutes – Subscription B

November 2002

SUGGESTED READING (General Topics from Recent Literature):

The Impact of the Polymerase Chain Reaction in Clinical Medicine. Post JC, Ehrlich GD. *JAMA.* 2000 Mar 22-29; 283(12):1544-1546.

Warner-Lambert/Parke-Davis Award Lecture. Pathological and Physiological Double-Strand Breaks: Roles in Cancer, Aging, and the Immune System. Lieber MR. *Am J Pathol.* 1998 Nov; 153(5):1323-1332

Physiology and Pathophysiology of Dendritic Cells. Wright-Browne V, McClain KL, Talpaz M, et al. *Hum Pathol.* 1997 May; 28(5):563-579

Mechanisms of Smoking-Related Lung and Pancreatic Adenocarcinoma Development. Schuller HM. Nat Rev Cancer. 2002 Jun; 2(6):455-463.

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FILE DIAGNOSES

CTTR Subscription B **November 2002**

Case 1:

Multinodular ("adenomatous") goiter
T-96000, M-71640

Case 2:

Clear cell carcinoma, likely metastatic from renal primary, thyroid
T-96000, M-8310/3

Case 3:

Papillary carcinoma, thyroid
T-96000, M-8050/3

Case 4:

Sclerosing mucoepidermoid carcinoma with eosinophilia, thyroid
T-96000, M-8430/3

Case 5:

Parathyroid neoplasm, favor carcinoma
T-97000, M-8010/3

Case 6:

Serous microcystic cystadenoma, pancreas
T-59000, M-8441/0

Case 7:

Pancreatic endocrine tumor
T-59000, M-8000/1

Case 8:

Mucinous cystic tumor (cystadenoma), pancreas
T-59000, M-8470/0

Case 9:

Pheochromocytoma, adrenal gland
T-93000, M-8700/0

Case 10:

Adrenocortical neoplasm, favor adenoma
T-93000, M-81400

Case No. 1, Accession No. 29212 **November 2002**

Escondido - Adenomatoid nodule
Glendale (Glendale Pathology Association) - Goiter
Loma Linda - Nodular colloid goiter
Orange (UCI Medical Center Residents) - Multinodular hyperplasia, thyroid
San Diego - Adenomatoid nodule
Arizona (Phoenix Memorial Hospital) - Follicular adenoma
Arkansas, Little Rock - Goiter
Colorado, Denver - Adenomatoid nodule
Florida (Winter Haven Hospital) - Nodular goiter
Florida (Hospital Pathologists) - Multinodular goiter
Georgia, Decatur - Follicular adenoma
Illinois (Marion Memorial Hospital) - Multinodular adenomatous goiter
Indiana (Ball Memorial Hospital) - Nodular hyperplasia (nodular goiter)
Indiana, Fort Wayne - Follicular adenoma, thyroid
[illegible]
Maryland (National Naval Medical Center) - Adenomatoid nodule
Massachusetts (Brigham & Women's Hospital) - Dominant nodule in multinodular goiter
Michigan, Grand Rapids - Nodular goiter
Michigan (St. Joseph Mercy Hospital) - Multinodular colloid goiter
Nebraska (Good Samaritan Hospital) - Nodular hyperplasia
New Mexico (University of New Mexico) - Adenomatous hyperplasia
New York (Nassau University Medical Center Resident Study Group) - Nodular goiter, thyroid
New York (Westchester Medical Center) - Nodular (adenomatous) hyperplasia of thyroid
Ohio, Columbus - Multinodular goiter
Ohio (Medical College of Ohio) - Follicular adenoma (colloid nodule)
Pennsylvania (Allegheny General Hospital) - Multinodular goiter, benign
Pennsylvania (Conemaugh Memorial Medical Center) - Multinodular goiter, thyroid
Pennsylvania (Magee Women's Hospital) - Nodular hyperplasia
Texas, Lubbock - Nodular goiter
Texas, San Antonio - Adenomatous hyperplasia
Texas (Scott & White Hospital) - Nodular goiter
Utah (St. Mark's Hospital) - Multinodular goiter
Washington, DC - Nodular goiter
Canada (CUSE, Site Fleurimont) - Follicular adenoma
Canada (Foothills Hospital) - Multinodular thyroid
China (Sir Run Run Shaw Hospital) - Nodular goiter
Japan, Chiba - Adenomatous goiter
Japan (Hamamatsu University School of Medicine) - Adenomatous goiter
Puerto Rico (University of Puerto Rico) - Nodular goiter
Qatar (Hamad Medical Center) - Multinodular goiter (adenomatous hyperplasia)
Spain (POVISA) - Follicular adenoma/nodular hyperplasia

Case 1 - Diagnosis:

Multinodular ("adenomatous") goiter
T-96000, M-71640

Case 1 - References:

Bonnema SJ, Bennedbaek FN, Ladenson PW, et al. Management of The Nontoxic Multinodular Goiter: A North American Survey. *J Clin Endocrinol Metab*. 2002 Jan; 87(1):112-117.

DeGroot LJ. Treatment of Multinodular Goiter by Surgery. *J Endocrinol Invest*. 2001 Nov; 24(10):820-822

Al-Fifi S, Rodd C. Multinodular Goiter in Children. *J Pediatr Endocrinol Metab*. 2001 Jun; 14(6):749-756.

Thomusch O, Machens A, Sekulla C, et al. Multivariate Analysis of Risk Factors for Postoperative Complications in Benign Goiter Surgery: Prospective Multicenter Study in Germany. *World J Surg*. 2000 Nov; 24(11):1335-1341.

Rotondi M, Amato G, Del Buono A, et al. Postintervention Serum TSH Levels May Be Useful to Differentiate Patients Who Should Undergo Levothyroxine Suppressive Therapy After Thyroid Surgery for Multinodular Goiter in a Region with Moderate Iodine Deficiency. *Thyroid*. 2000 Dec; 10(12):1081-1085.

Escondido - Metastatic renal cell carcinoma
Glendale (Glendale Pathology Association) - Metastatic renal cell carcinoma, clear cell type
Loma Linda - Renal cell carcinoma – metastasis to thyroid
Orange (UCI Medical Center Residents) - Metastatic renal cell carcinoma, thyroid
San Diego - Metastatic renal cell carcinoma
Arizona (Phoenix Memorial Hospital) - Metastatic renal cell carcinoma
Arkansas, Little Rock - Metastatic renal cell carcinoma
Colorado, Denver - Parathyroid adenoma
Florida (Winter Haven Hospital) - Metastatic renal cell carcinoma
Florida (Hospital Pathologists) - Metastatic RCC (renal cell carcinoma)
Georgia, Decatur - Clear cell carcinoma, favor metastatic renal cell carcinoma
Illinois (Marion Memorial Hospital) - Metastatic renal cell carcinoma, clear cell type
Indiana (Ball Memorial Hospital) - Metastatic renal cell carcinoma
Indiana, Fort Wayne - Metastatic clear cell carcinoma from kidney, thyroid
Kansas (Colby Rural Regional Medical Center) - Metastatic renal cell carcinoma
Maryland (National Naval Medical Center) - Metastatic renal cell carcinoma
Massachusetts (Brigham & Women's Hospital) - Metastatic renal cell carcinoma
Michigan, Grand Rapids - Clear cell carcinoma, consistent with metastatic carcinoma from kidney
Michigan (St. Joseph Mercy Hospital) - Metastatic renal cell carcinoma
Nebraska (Good Samaritan Hospital) - Metastatic renal cell carcinoma
New Mexico (University of New Mexico) - Renal cell carcinoma, metastatic
New York (Nassau University Medical Center Resident Study Group) - Metastatic renal cell carcinoma-clear cell type, thyroid
New York (Westchester Medical Center) - Metastatic renal cell carcinoma
Ohio, Columbus - Clear cell carcinoma consistent with metastatic renal cell carcinoma
Ohio (Medical College of Ohio) - Favor anaplastic carcinoma of the thyroid vs. metastatic RCC (renal cell carcinoma)
Pennsylvania (Allegheny General Hospital) - Metastatic conventional renal cell carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Metastatic renal cell carcinoma, thyroid
Pennsylvania (Magee Women's Hospital) - Metastatic renal cell carcinoma
Texas, Lubbock - Metastatic renal cell carcinoma
Texas, San Antonio - Metastatic renal cell carcinoma
Texas (Scott & White Hospital) - Metastatic renal cell carcinoma
Utah (St. Mark's Hospital) - Metastatic clear cell carcinoma consistent with renal primary
Washington, DC - Metastatic renal cell carcinoma
Canada (CUSE, Site Fleurimont) - Renal cell carcinoma, metastatic
Canada (Foothills Hospital) - Metastatic renal cell carcinoma
China (Sir Run Run Shaw Hospital) - Metastatic renal cell carcinoma
Japan, Chiba - Consistent with metastatic renal cell carcinoma
Japan (Hamamatsu University School of Medicine) - Parathyroid adenoma
Puerto Rico (University of Puerto Rico) - Clear cell carcinoma, metastatic from renal primary
Qatar (Hamad Medical Center) - Metastatic renal cell carcinoma
Spain (POVISA) - Metastatic clear cell carcinoma

Case 2 - Diagnosis:

Clear cell carcinoma, likely metastatic from renal primary, thyroid
T-96000, M-8310/3

Case 2 - References:

Rikabi AC, Young AE, Wilson C. Metastatic Renal Clear Cell Carcinoma in The Thyroid Gland Diagnosed by Fine Needle Aspiration Cytology. *Cytopathology.* 1991; 2(1):47-49.

Rigaud C, Bogomoletz WV, Delisle MJ, et al. Metastatic Cancers of The Thyroid Gland. Diagnostic Difficulties. *Bull Cancer.* 1987; 74(2):117-127. French.

Watts NB. Carcinoma Metastatic to The Thyroid: Prevalence and Diagnosis by Fine-Needle Aspiration Cytology. *Am J Med Sci.* 1987 Jan; 293(1):13-17.

Nishiyama RH. Overview of Surgical Pathology of The Thyroid Gland. *World J Surg.* 2000 Aug; 24(8):898-906.

Tutal E, Tutuncu NB, Akcaer N, et al. Unusual Case of Metastatic Thyroid Nodule: Nonpalpable Breast Mass as Origin. *Endocr Pract.* 2001 Sep-Oct; 7(5):379-382

Escondido - Papillary carcinoma
Glendale (Glendale Pathology Association) - Papillary carcinoma of thyroid
Loma Linda - Papillary carcinoma of thyroid
Orange (UCI Medical Center Residents) - Papillary carcinoma, thyroid
San Diego - Papillary carcinoma
Arizona (Phoenix Memorial Hospital) - Papillary carcinoma
Arkansas, Little Rock - Papillary carcinoma
Colorado, Denver - Papillary carcinoma
Florida (Winter Haven Hospital) - Papillary carcinoma
Florida (Hospital Pathologists) - Papillary carcinoma of thyroid
Georgia, Decatur - Papillary carcinoma of the thyroid
Illinois (Marion Memorial Hospital) - Papillary carcinoma of thyroid
Indiana (Ball Memorial Hospital) - Papillary carcinoma, tall cell variant
Indiana, Fort Wayne - Papillary carcinoma, thyroid (R)
Kansas (Coffeyville Regional Medical Center) - Papillary carcinoma, oncocytic?
Maryland (National Naval Medical Center) - Papillary thyroid carcinoma
Massachusetts (Brigham & Women's Hospital) - Papillary carcinoma
Michigan, Grand Rapids - Papillary carcinoma of thyroid
Michigan (St. Joseph Mercy Hospital) - Papillary carcinoma
Nebraska (Good Samaritan Hospital) - Papillary carcinoma
New Mexico (University of New Mexico) - Papillary carcinoma
New York (Nassau University Medical Center Resident Study Group) - Papillary carcinoma , thyroid
New York (Westchester Medical Center) - Papillary carcinoma of thyroid
Ohio, Columbus - Papillary carcinoma
Ohio (Medical College of Ohio) - Papillary carcinoma of the thyroid
Pennsylvania (Allegheny General Hospital) - Papillary thyroid carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Papillary carcinoma, thyroid
Pennsylvania (Magee Women's Hospital) - Papillary carcinoma
Texas, Lubbock - Papillary carcinoma, tall cell variant
Texas, San Antonio - Papillary thyroid carcinoma
Texas (Scott & White Hospital) - Papillary carcinoma
Utah (St. Mark's Hospital) - Papillary carcinoma
Washington, DC - Papillary carcinoma
Canada (CUSE, Site Fleurimont) - Papillary carcinoma
Canada (Foothills Hospital) - Papillary carcinoma
China (Sir Run Run Shaw Hospital) - Thyroid papillary carcinoma
Japan, Chiba - Papillary carcinoma of thyroid gland
Japan (Hamamatsu University School of Medicine) - Papillary carcinoma
Puerto Rico (University of Puerto Rico) - Papillary cell carcinoma
Qatar (Hamad Medical Center) - Papillary carcinoma
Spain (POVISA) - Tall cell papillary carcinoma

Case 3 - Diagnosis:

Papillary carcinoma, thyroid
T-96000, M-8050/3

Case 3 - References:

Huang J, Walker R, Groome PG, et al. Risk of Thyroid Carcinoma in a Female Population after Radiotherapy for Breast Carcinoma. *Cancer*. 2001 Sep 15; 92(6):1411-1418.

Gamboa-Dominguez A, Candanedo-Gonzalez F, Uribe-Uribe NO, et al. Tall Cell Variant of Papillary Thyroid Carcinoma. A Cytohistologic Correlation. *Acta Cytol*. 1997 May-Jun; 41(3):672-676.

Lam AK, Montone KT, Nolan KA, et al. Ret Oncogene Activation in Papillary Thyroid Carcinoma: Prevalence and Implication on the Histological Parameters. *Hum Pathol*. 1998 Jun; 29(6):565-568

Chan JK, Saw D. The Grooved Nucleus. A Useful Diagnostic Criterion of Papillary Carcinoma of The Thyroid. *Am J Surg Pathol*. 1986 Oct; 10(10):672-679.

Escondido - Squamous cell carcinoma, primary
Glendale (Glendale Pathology Association) - Squamous cell carcinoma
Loma Linda - Sclerosing carcinoma (epidermoid) of thyroid
Orange (UCI Medical Center Residents) - Sclerosing mucoepidermoid carcinoma with eosinophilia, thyroid
San Diego - Sclerosing mucoepidermoid carcinoma with eosinophilia
Arizona (Phoenix Memorial Hospital) - Squamous cell carcinoma of thyroid
Arkansas, Little Rock - Sclerosing mucoepidermoid carcinoma with eosinophilia
Colorado, Denver - Follicular carcinoma
Florida (Winter Haven Hospital) - Fibrosing Hashimoto's thyroiditis
Florida (Hospital Pathologists) - Adnexal skin (sebaceous?) tumor
Georgia, Decatur - Sclerosing mucoepidermoid carcinoma with eosinophils
Illinois (Marion Memorial Hospital) - Sclerosing mucoepidermoid carcinoma with eosinophils
Indiana (Ball Memorial Hospital) - Mucoepidermoid carcinoma
Indiana, Fort Wayne - Mucoepidermoid (adenosquamous) carcinoma, (R) thyroid with Hashimoto's thyroiditis
[illegible]
Maryland (National Naval Medical Center) - Sclerosing mucoepidermoid carcinoma with eosinophilia
Massachusetts (Brigham & Women's Hospital) - Mucoepidermoid carcinoma
Michigan, Grand Rapids - Sclerosing mucoepidermoid carcinoma with eosinophilia
Michigan (St. Joseph Mercy Hospital) - Mucoepidermoid carcinoma
Nebraska (Good Samaritan Hospital) - Sclerosing mucoepidermoid carcinoma with eosinophils
New Mexico (University of New Mexico) - SETTLE
New York (Nassau University Medical Center Resident Study Group) - Sclerosing mucoepidermoid carcinoma with eosinophilia, thyroid
New York (Westchester Medical Center) - Mucoepidermoid carcinoma
Ohio, Columbus - Sclerosing mucoepidermoid carcinoma with eosinophilia
Ohio (Medical College of Ohio) - Squamous cell carcinoma
Pennsylvania (Allegheny General Hospital) - Mucoepidermoid carcinoma of thyroid
Pennsylvania (Conemaugh Memorial Medical Center) - Medullary carcinoma, thyroid
Pennsylvania (Magee Women's Hospital) - Medullary carcinoma
Texas, Lubbock - Follicular carcinoma
Texas, San Antonio - MET squamous, lung primary
Texas (Scott & White Hospital) - Sclerosing mucoepidermoid carcinoma with eosinophilia
Utah (St. Mark's Hospital) - Poorly differentiated carcinoma
Washington, DC - Mucoepidermoid carcinoma
Canada (CUSE, Site Fleurimont) - Anaplastic carcinoma, squamoid variant
Canada (Foothills Hospital) - Sclerosing mucoepidermoid carcinoma with eosinophilia
China (Sir Run Run Shaw Hospital) - Squamous cell carcinoma
Japan, Chiba - Sclerosing mucoepidermoid carcinoma with eosinophilia
Japan (Hamamatsu University School of Medicine) - Sclerosing mucoepidermoid carcinoma with eosinophilia
Puerto Rico (University of Puerto Rico) - Mucoepidermoid carcinoma
Qatar (Hamad Medical Center) - Mucoepidermoid carcinoma
Spain (POVISA) - Mucoepidermoid carcinoma

Case 4 - Diagnosis:

Sclerosing mucoepidermoid carcinoma with eosinophilia, thyroid
T-96000, M-8430/3

Consultation: Jorge Albores-Saavedra, M.D. (Southwestern Medical Center, Dallas, Texas) "Sclerosing mucoepidermoid carcinoma with eosinophilia."

Case 4 - References:

Geisinger KR, Steffee CH, McGee RS, et al. The Cytomorphologic Features of Sclerosing Mucoepidermoid Carcinoma of The Thyroid Gland with Eosinophilia. *Am J Clin Pathol.* 1998 Mar; 109(3):294-301.

Solomon AC, Baloch ZW, Salhany KE, et al. Thyroid Sclerosing Mucoepidermoid Carcinoma with Eosinophilia: Mimic of Hodgkin Disease in Nodal Metastases. *Arch Pathol Lab Med.* 2000 Mar; 124(3):446-449.

Sim SJ, Ro JY, Ordonez NG, et al. Sclerosing Mucoepidermoid Carcinoma with Eosinophilia of the Thyroid: Report of Two Patients, One with Distant Metastasis, and Review of the Literature. *Hum Pathol.* 1997 Sep; 28(9):1091-1096.

Baloch ZW, Solomon AC, LiVolsi VA. Primary Mucoepidermoid Carcinoma and Sclerosing Mucoepidermoid Carcinoma with Eosinophilia of the Thyroid Gland: A Report of Nine Cases. *Mod Pathol.* 2000 Jul; 13(7):802-807.

Vazquez Ramirez F, Otal Salaverri C, Argueta Manzano O, et al. Fine Needle Aspiration Cytology of High Grade Mucoepidermoid Carcinoma of the Thyroid. A Case Report. *Acta Cytol.* 2000 Mar-Apr; 44(2):259-264

Escondido - Parathyroid adenoma
Glendale (Glendale Pathology Association) - Parathyroid adenoma
Loma Linda - Papillary carcinoma, parathyroid
Orange (UCI Medical Center Residents) - Parathyroid adenoma
San Diego - Parathyroid adenoma
Arizona (Phoenix Memorial Hospital) - Parathyroid adenoma, chief cell type
Arkansas, Little Rock - Parathyroid adenoma
Colorado, Denver - Parathyroid adenoma
Florida (Winter Haven Hospital) - Atypical parathyroid adenoma
Florida (Hospital Pathologists) - Parathyroid adenoma
Georgia, Decatur - Parathyroid adenoma
Illinois (Marion Memorial Hospital) - Parathyroid adenoma
Indiana (Ball Memorial Hospital) - Parathyroid carcinoma
Indiana, Fort Wayne - Parathyroid adenoma (chief cell), parathyroid gland
[illegible]
Maryland (National Naval Medical Center) - Parathyroid adenoma
Massachusetts (Brigham & Women's Hospital) - Parathyroid adenoma
Michigan, Grand Rapids - Parathyroid adenoma
Michigan (St. Joseph Mercy Hospital) - Adenoma
Nebraska (Good Samaritan Hospital) - Parathyroid adenoma
New Mexico (University of New Mexico) - Parathyroid adenoma
New York (Nassau University Medical Center Resident Study Group) - Adenoma, parathyroid
New York (Westchester Medical Center) - Parathyroid adenoma vs. carcinoma
Ohio, Columbus - Parathyroid adenoma
Ohio (Medical College of Ohio) - Parathyroid carcinoma
Pennsylvania (Allegheny General Hospital) - Parathyroid adenoma
Pennsylvania (Conemaugh Memorial Medical Center) - Parathyroid adenoma, parathyroid
Pennsylvania (Magee Women's Hospital) - Parathyroid adenoma
Texas, Lubbock - Parathyroid adenoma
Texas, San Antonio - Medullary
Texas (Scott & White Hospital) - Parathyroid adenoma
Utah (St. Mark's Hospital) - Parathyroid adenoma
Washington, DC - Parathyroid adenoma
Canada (CUSE, Site Fleurimont) - Parathyroid adenoma
Canada (Foothills Hospital) - Parathyroid adenoma
China (Sir Run Run Shaw Hospital) - Parathyroid adenoma
Japan, Chiba - Parathyroid carcinoma
Japan (Hamamatsu University School of Medicine) - Parathyroid adenoma
Puerto Rico (University of Puerto Rico) - Parathyroid adenoma
Qatar (Hamad Medical Center) - Parathyroid adenoma
Spain (POVISA) - Chief cell adenoma

Case 5 - Diagnosis:

Parathyroid neoplasm, favor carcinoma

Director's note: A review of the chart showed a pre-operative serum calcium of 18.8 mg/dl. (drc)
T-97000, M-8010/3

Case 5 - References:

Yamamoto T, Matsumura A. Comment on "Clinical Review 122: Parathyroid Carcinoma". *J Clin Endocrinol Metab*. 2001 Oct;86(10):5091.

Mozes G, Curlee KJ, Rowland CM, et al. The Predictive Value of Laboratory Findings in Patients with Primary Hyperparathyroidism. *J Am Coll Surg*. 2002 Feb; 194(2):126-130.

Kameyama K, Takami H, Umemura S, et al. PCNA and Ki-67 as Prognostic Markers in Human Parathyroid Carcinomas. *Ann Surg Oncol*. 2000 May; 7(4):301-304.

Casez J, Pfammatter R, Nguyen Q, et al. Diagnostic Approach to Hypercalcemia: Relevance of Parathyroid Hormone and Parathyroid Hormone-Related Protein Measurements. *Eur J Intern Med*. 2001 Jul; 12(4):344-349.

Cougard P, Goudet P, Bilosi M, et al. Videoendoscopic Approach for Parathyroid Adenomas: Results of a Prospective Study of 100 Patients. *Ann Chir*. 2001 May; 126(4):314-31. French.

Escondido - Serous microcystic adenoma
Glendale (Glendale Pathology Association) - Serous cystadenoma of pancreas
Loma Linda - Cystadenoma of pancreas
Orange (UCI Medical Center Residents) - Serous microcystic adenoma, pancreas
San Diego - Serous microcystic adenoma
Arizona (Phoenix Memorial Hospital) - Serous cystadenoma, pancreas
Arkansas, Little Rock - Microcystic adenoma
Colorado, Denver - Cystadenoma
Florida (Winter Haven Hospital) - Cystadenoma
Florida (Hospital Pathologists) - Microcystic cystadenoma
Georgia, Decatur - Serous (microcystic) adenoma
Illinois (Marion Memorial Hospital) - Serous microcystic adenoma
Indiana (Ball Memorial Hospital) - Microcystic adenoma
Indiana, Fort Wayne - Serous microcystic cystadenoma, pancreas
Kansas (Colby Rural Regional Medical Center) - Serous cystadenocarcinoma
Maryland (National Naval Medical Center) - Serous microcystic adenoma
Massachusetts (Brigham & Women's Hospital) - Serous cystadenoma
Michigan, Grand Rapids - Serous neoplasm of pancreas
Michigan (St. Joseph Mercy Hospital) - Microcystic adenoma
Nebraska (Good Samaritan Hospital) - Serous microcystic adenoma
New Mexico (University of New Mexico) - Serous microcystic adenoma
New York (Nassau University Medical Center Resident Study Group) - Serous cystadenoma, pancreas
New York (Westchester Medical Center) - Microcystic cystadenoma of pancreas
Ohio, Columbus - Serous microcystic adenoma
Ohio (Medical College of Ohio) - Serous microcystic adenoma
Pennsylvania (Allegheny Medical Center) - Microcystic adenoma of pancreas
Pennsylvania (Conemaugh Memorial Medical Center) - Serous cyst adenoma, pancreas
Pennsylvania (Magee Women's Hospital) - Serous microcystic tumor
Texas, Lubbock - Microcystic adenoma
Texas, San Antonio - Serous cystadenoma
Texas (Scott & White Hospital) - Serous microcystic adenoma
Utah (St. Mark's Hospital) - Serous microcystic adenoma
Washington, DC - Microcystic cystadenoma
Canada (CUSE, Site Fleurimont) - Solid pseudo papillary tumor
Canada (Foothills Hospital) - Serous microcystic adenoma
China (Sir Run Run Shaw Hospital) - Serous microcystic adenoma
Japan, Chiba - Serous microcystic adenoma of pancreas
Japan (Hamamatsu University School of Medicine) - Serous microcystic adenoma
Puerto Rico (University of Puerto Rico) - Serous cystadenoma
Qatar (Hamad Medical Center) - Microcystic adenoma
Spain (POVISA) - Serous microcystic adenoma

Case 6 - Diagnosis:

Serous microcystic cystadenoma, pancreas
T-59000, M-8441/0

Case 6 - References:

Alpert LC, Truong LD, Bossart MI, et al. Microcystic Adenoma (Serous Cystadenoma) of The Pancreas. A Study of 14 Cases with Immunohistochemical and Electron-Microscopic Correlation. *Am J Surg Pathol.* 1988 Apr; 12(4):251-263.

Compagno J, Oertel JE. Microcystic Adenomas of the Pancreas (Glycogen-Rich Cystadenomas): A Clinicopathologic Study of 34 cases. *Am J Clin Pathol.* 1978 Mar; 69(3):289-298.

Nyongo A, Huntrakoon M. Microcystic Adenoma of the Pancreas with Myoepithelial Cells. A Hitherto Undescribed Morphologic Feature. *Am J Clin Pathol.* 1985 Jul; 84(1):114-120.

Young NA, Villani MA, Khoury P, et al. Differential Diagnosis of Cystic Neoplasms of the Pancreas by Fine-Needle Aspiration. *Arch Pathol* Lab Med. 1991 Jun; 115(6):571-577.

Escondido - Pancreatic endocrine tumor
Glendale (Glendale Pathology Association) - Pancreatic endocrine tumor
Loma Linda - Endocrine (carcinoid) tumor of pancreas
Orange (UCI Medical Center Residents) - Islet cell tumor, pancreas
San Diego - Pancreatic neuroendocrine neoplasm
Arizona (Phoenix Memorial Hospital) - Acinar cell carcinoma
Arkansas, Little Rock - Pancreatic neuroendocrine cell tumor
Colorado, Denver - Acinar cell carcinoma
Florida (Winter Haven Hospital) - Pancreatic endocrine tumor
Florida (Hospital Pathologists) - Islet cell tumor
Georgia, Decatur - Pancreatic endocrine tumor
Illinois (Marion Memorial Hospital) - Pancreatic endocrine tumor (islet cell tumor), benign
Indiana (Ball Memorial Hospital) - Neuroendocrine tumor
Indiana, Fort Wayne - Islet cell tumor (neuroendocrine neoplasm), pancreas
[illegible]
Maryland (National Naval Medical Center) - Pancreatic endocrine neoplasm
Massachusetts (Brigham & Women's Hospital) - Pancreatic endocrine neoplasm
Michigan, Grand Rapids - Pancreatic endocrine neoplasm
Michigan (St. Joseph Mercy Hospital) - Pancreatic endocrine tumor
Nebraska (Good Samaritan Hospital) - Neuroendocrine tumor
New Mexico (University of New Mexico) - Pancreatic endocrine tumor
New York (Nassau University Medical Center Resident Study Group) - Malignant endocrine tumor, pancreas
New York (Westchester Medical Center) - Endocrine (islet cell) tumor of pancreas
Ohio, Columbus - Islet cell tumor
Ohio (Medical College of Ohio) - Islet cell tumor
Pennsylvania (Allegheny Medical Center) - Pancreatic endocrine well differentiated tumor uncertain malignant potential – angioinvasion.
Pennsylvania (Conemaugh Memorial Medical Center) - Pancreatic endocrine neoplasm/favor malignant, pancreas
Pennsylvania (Magee Women's Hospital) - Neuroendocrine carcinoma
Texas, Lubbock - Islet cell tumor
Texas, San Antonio - Pancreatic endocrine neoplasm
Texas (Scott & White Hospital) - Pancreatic neuroendocrine tumor
Utah (St. Mark's Hospital) - Pancreatic endocrine tumor
Washington, DC - Pancreatic endocrine tumor
Canada (CUSE, Site Fleurimont) - Pancreatic endocrine tumor
Canada (Foothills Hospital) - Pancreatic endocrine neoplasm
China (Sir Run Run Shaw Hospital) - Islet cell tumor
Japan, Chiba - Endocrine tumor of the pancreas
Japan (Hamamatsu University School of Medicine) - Well differentiated endocrine carcinoma
Puerto Rico (University of Puerto Rico) - Endocrine tumor
Qatar (Hamad Medical Center) - Neuroendocrine tumour (adenoma)
Spain (POVISA) - Endocrine cell tumor

Case 7 - Diagnosis:

Pancreatic endocrine tumor, pancreas
T-59000, M-8000/1

Case 7 - References:

Guo SS, Wu X, Shimoide AT, et al. Anomalous Overexpression of p27(Kip1) in Sporadic Pancreatic Endocrine Tumors. *J Surg Res*. 2001 Apr; 96(2):284-288.

Perren A, Komminoth P, Saremaslani P, et al. Mutation and Expression Analyses Reveal Differential Subcellular Compartmentalization of PTEN in Endocrine Pancreatic Tumors Compared to Normal Islet Cells. *Am J Pathol*. 2000 Oct; 157(4):1097-1103.

Lam KY, Lo CY, Fan ST, et al. Telomerase Activity in Pancreatic Endocrine Tumours: A Potential Marker for Malignancy. *Mol Pathol*. 2000 Jun; 53(3):133-136.

Veenhof CH. Pancreatic Endocrine Tumours, Immunotherapy and Gene Therapy: Chemotherapy and Interferon Therapy of Endocrine Tumours. *Ann Oncol*. 1999; 10 Suppl 4:185-187.

Eubanks PJ, Sawicki MP, Samara GJ, et al. Pancreatic Endocrine Tumors with Loss of Heterozygosity at the Multiple Endocrine Neoplasia Type I Locus. *Am J Surg*. 1997 Jun; 173(6):518-520.

Escondido - Mucinous cystic tumor, adenoma
Glendale (Glendale Pathology Association) - Mucinous cystic tumor of pancreas
Loma Linda - Mucinous cystadenoma of pancreas
Orange (UCI Medical Center Residents) - Mucinous cystadenoma, pancreas
San Diego - Mucinous cystic neoplasm
Arizona (Phoenix Memorial Hospital) - Mucinous cystadenoma
Arkansas, Little Rock - Mucinous cystadenoma
Colorado, Denver - Neuroendocrine tumor
Florida (Winter Haven Hospital) - Mucinous cystadenoma
Florida (Hospital Pathologists) - Mucinous cystadenoma
Georgia, Decatur - Mucinous cystic neoplasm of borderline malignancy
Illinois (Marion Memorial Hospital) - Mucinous cystadenoma
Indiana (Ball Memorial Hospital) - Mucinous cystic adenoma
Indiana, Fort Wayne - Mucinous cystic neoplasm, pancreas
[illegible]
Maryland (National Naval Medical Center) - Mucinous pancreatic cystic tumor
Massachusetts (Brigham & Women's Hospital) - Mucinous cystadenoma
Michigan, Grand Rapids - Mucinous cystic tumor, pancreas
Michigan (St. Joseph Mercy Hospital) - Mucinous cystadenoma
Nebraska (Good Samaritan Hospital) - Mucinous cystadenoma
New Mexico (University of New Mexico) - Mucinous cystic tumor, adenoma
New York (Nassau University Medical Center Resident Study Group) - Mucinous cystadenoma, pancreas
New York (Westchester Medical Center) - Cystic mucinous tumor of pancreas
Ohio, Columbus - Mucinous cystic neoplasm
Ohio (Medical College of Ohio) - Mucinous cystic tumor (cystadenoma)
Pennsylvania (Allegheny Medical Center) - Mucinous (colloid) carcinoma
Pennsylvania (Conemaugh Memorial Medical Center) - Mucinous cyst neoplasm, pancreas
Pennsylvania (Magee Women's Hospital) - Mucinous cystadenoma
Texas, Lubbock - Mucinous neoplasm
Texas, San Antonio - Chronic pancreatitis with non-neoplastic cyst formation
Texas (Scott & White Hospital) - Mucinous cystic tumor
Utah (St. Mark's Hospital) - Mucinous cystic tumor borderline
Washington, DC - Mucinous cystadenoma
Canada (CUSE, Site Fleurimont) - Mucinous cystadenoma
Canada (Foothills Hospital) - Mucinous cystic neoplasm
China (Sir Run Run Shaw) - Mucinous cystadenoma
Japan, Chiba - Mucinous cystic tumor of pancreas (mucinous cystadenoma)
Japan (Hamamatsu University School of Medicine) - Mucinous cystadenoma
Puerto Rico (University of Puerto Rico) - Mucinous cystic adenoma
Qatar (Hamad Medical Center) - Mucinous cystadenoma
Spain (POVISA) - Cystic mucinous tumor

Case 8 - Diagnosis:

Mucinous cystic tumor (cystadenoma), pancreas
T-59000, M-8470/0

Case 8 - References:

Fukushima N, Mukai K. Pancreatic Neoplasms with Abundant Mucus Production: Emphasis on Intraductal Papillary-Mucinous Tumors and Mucinous Cystic Tumors. *Adv Anat Pathol.* 1999 Mar; 6(2):65-77.

Itai Y. Different Terms for the Same Disease: Intraductal Mucin-Producing Tumor Versus Mucinous Tumor of the Pancreas. *Radiology.* 1996 Jul; 200(1):285.

Longnecker DS. Observations on The Etiology and Pathogenesis of Intraductal Papillary-Mucinous Neoplasms of The Pancreas. *Hepatogastroenterology.* 1998 Nov-Dec; 45(24):1973-1980.

Helpap B, Vogel J. Immunohistochemical Studies on Cystic Pancreatic Neoplasms. *Pathol Res Pract.* 1988 Dec; 184(1):39-45.

Mukawa K, Kawa S, Aoki Y, et al. Reduced Expression of p53 and Cyclin A in Intraductal Mucin-Hypersecreting Neoplasm of the Pancreas Compared with Usual Pancreatic Ductal Adenocarcinoma. *Am J Gastroenterol.* 1999 Aug; 94(8):2263-2267.

Escondido - Adrenal cortical carcinoma
Glendale (Glendale Pathology Association) - Pheochromocytoma
Loma Linda - Pheochromocytoma – adrenal
Orange (UCI Medical Center Residents) - Pheochromocytoma, adrenal gland
San Diego - Pheochromocytoma
Arizona (Phoenix Memorial Hospital) - Pheochromocytoma
Arkansas, Little Rock - Pheochromocytoma
Colorado, Denver - Pheochromocytoma
Florida (Winter Haven Hospital) - Pheochromocytoma
Florida (Hospital Pathologists) - Adrenal gland carcinoma
Georgia, Decatur - Pheochromocytoma
Illinois (Marion Memorial Hospital) - Pheochromocytoma
Indiana (Ball Memorial Hospital) - Pheochromocytoma
Indiana, Fort Wayne - Pheochromocytoma, (R) adrenal
Kansas (Coffeyville Regional Medical Center) - Pheochromocytoma
Maryland (National Naval Medical Center) - Pheochromocytoma
Massachusetts (Brigham & Women's Hospital) - Pheochromocytoma
Michigan, Grand Rapids - Pheochromocytoma
Michigan (St. Joseph Mercy Hospital) - Pheochromocytoma
Nebraska (Good Samaritan Hospital) - Pheochromocytoma
New Mexico (University of New Mexico) - Pheochromocytoma
New York (Nassau University Medical Center Resident Study Group) - Pheochromocytoma, adrenal gland
New York (Westchester Medical Center) - Pheochromocytoma
Ohio, Columbus - Pheochromocytoma
Ohio (Medical College of Ohio) - Pheochromocytoma
Pennsylvania (Allegheny General Hospital) - Pheochromocytoma
Pennsylvania (Conemaugh Memorial Medical Center) - Pheochromocytoma, adrenal gland
Pennsylvania (Magee Women's Hospital) - Pheochromocytoma
Texas, Lubbock - Pheochromocytoma
Texas, San Antonio - Pheochromocytoma
Texas (Scott & White Hospital) - Pheochromocytoma
Utah (St. Mark's Hospital) - Pheochromocytoma
Washington, DC - Pheochromocytoma
Canada (CUSE, Site Fleurimont) - Pheochromocytoma
Canada (Foothills Hospital) - Pheochromocytoma
China (Sir Run Run Shaw Hospital) - Pheochromocytoma
Japan, Chiba - Pheochromocytoma
Japan (Hamamatsu University School of Medicine) - Pheochromocytoma
Puerto Rico (University of Puerto Rico) - Pheochromocytoma
Qatar (Hamad Medical Center) - Pheochromocytoma
Spain (POVISA) - Pheochromocytoma

Case 9 - Diagnosis:

Pheochromocytoma, adrenal gland
T-93000, M-8700/0

Case 9 - References:

Sutton MG, Sheps SG, Lie JT. Prevalence of Clinically Unsuspected Pheochromocytoma. Review of a 50-year Autopsy Series. *Mayo Clin Proc*. 1981 Jun; 56(6):354-360.

Medeiros LJ, Wolf BC, Balogh K, et al. Adrenal pheochromocytoma: a clinicopathologic review of 60 cases. *Hum Pathol*. 1985 Jun; 16(6):580-589.

Inabnet WB, Caragliano P, Pertsemlidis D. Pheochromocytoma: inherited associations, bilaterality, and cortex preservation. *Surgery*. 2000 Dec; 128(6):1007-1011;discussion 1011-2.

Dannenberg H, Speel EJ, Zhao J, et al. Losses of Chromosomes 1p and 3q are Early Genetic Events in the Development of Sporadic Pheochromocytomas. *Am J Pathol*. 2000 Aug; 157(2):353-359.

Escondido - Adrenal cortical adenoma
Glendale (Glendale Pathology Association) - Adrenal cortical adenoma
Loma Linda - Adrenal cortical adenoma
Orange (UCI Medical Center Residents) - Adrenal cortical adenoma
San Diego - Adrenal cortical neoplasm, favor adenoma
Arizona (Phoenix Memorial Hospital) - Adrenal cortical adenoma, functioning
Arkansas, Little Rock - Adrenal cortical adenoma
Colorado, Denver - Adrenocortical adenoma
Florida (Winter Haven Hospital) - Adrenal adenoma
Florida (Hospital Pathologists) - ? MET (malignant endocrine tumor) ?RCC (renal cell carcinoma)
Georgia, Decatur - Adrenocortical adenoma
Illinois (Marion Memorial Hospital) - Adrenal cortical adenoma
Indiana (Ball Memorial Hospital) - Adrenal cortical adenoma
Indiana, Fort Wayne - Adrenal cortical adenoma, (R) adrenal
[illegible]
Maryland (National Naval Medical Center) - Adrenal cortical adenoma
Massachusetts (Brigham & Women's Hospital) - Adrenocortical adenoma
Michigan, Grand Rapids - Cortical adenoma
Michigan (St. Joseph Mercy Hospital) - Cortical adenoma
Nebraska (Good Samaritan Hospital) - Adrenal cortical adenoma
New Mexico (University of New Mexico) - Adrenal cortical adenoma
New York (Nassau University Medical Center Resident Study Group) - Cortical adenoma, adrenal gland
New York (Westchester Medical Center) - Adrenal cortical adenoma
Ohio, Columbus - Adrenal cortical adenoma
Ohio (Medical College of Ohio) - Adrenal cortical adenoma
Pennsylvania (Allegheny General Hospital) - Adrenal cortical neoplasm
Pennsylvania (Conemaugh Memorial Medical Center) - Adrenal cortical adenoma, adrenal gland
Pennsylvania (Magee Women's Hospital) - Adrenal cortical neoplasm rule out carcinoma
Texas, Lubbock - Cortical adenoma
Texas, San Antonio - Adrenocortical neoplasm, favor adenoma
Texas (Scott & White Hospital) - Adrenal cortical adenoma
Utah (St. Mark's Hospital) - Adrenal cortical adenoma
Washington, DC - Adrenal cortex adenoma
Canada (CUSE, Site Fleurimont) - Adrenal cortical adenoma
Canada (Foothills Hospital) - Adrenal adenoma
China (Sir Run Run Shaw Hospital) - Adrenocortical adenoma
Japan, Chiba - Adrenal cortical adenoma
Japan (Hamamatsu University School of Medicine) - Cortical adenoma
Puerto Rico (University of Puerto Rico) - Adrenal cortical adenoma
Qatar (Hamad Medical Center) - Adrenal cortical adenoma
Spain (POVISA) - Adrenal cortical adenoma

Case 10 - Diagnosis:

Adrenocortical neoplasm, favor adenoma
T-93000, M-81400

Case 10 - References:

Favia G, Lumachi F, Basso S, et al. Management of Incidentally Discovered Adrenal Masses and Risk of Malignancy. *Surgery*. 2000 Dec; 128(6):918-924.

Diaz-Cano SJ, de Miguel M, Blanes A, et al. Contribution of the Microvessel Network to the Clonal and Kinetic Profiles of Adrenal Cortical Proliferative Lesions. *Hum Pathol*. 2001 Nov; 32(11):1232-1239.

Ocker M, Sachse R, Rico A, et al. PCR-SSCP Analysis of Human Adrenocortical Adenomas: Absence of K-ras Gene Mutations. *Exp Clin Endocrinol Diabetes*. 2000; 108(8):513-514.

Barnett CC Jr, Varma DG, El-Naggar AK, et al. Limitations of Size as a Criterion in The Evaluation of Adrenal Tumors. *Surgery*. 2000 Dec; 128(6):973-982;discussion 982-983.