

California Tumor Tissue Registry's  
Subscription "C" - Vol 6(5)  
February, 2013

*"Endocrine Pathology"*

**Case 1:**

A 54 y/o woman presented with an enlarging mass in the left lower neck of several months duration. A thyroid scan showed a non-functioning mass which displaced the left lobe. PE showed a 4.6 cm mass in the left lobe of the thyroid gland. There was no hyper-reflexia. A cystic mass was surgically found to extend from the superior mediastinum to the larynx. The mass was removed, including a portion of the left lobe of the thyroid gland. The cyst was filled with 100 ml of straw-colored fluid within a smooth walled lining.

Santa Barbara (Miramonte Laboratory) - Thyroglossal duct cyst  
Santa Rosa (Santa Rosa Memorial Hospital) - Parathyroid cyst/Branchial cleft cyst/Benign Epithelial cyst c/w parathyroid cyst (2)  
Woodland Hills (Kaiser Permanente) - Ectopic parathyroid tissue  
Arkansas The Laboratory of Pathology) - Parathyroid carcinoma  
Georgia, Atlanta - Parathyroid cyst  
Idaho, Boise - Parathyroid carcinoma  
Illinois, Oak Brook - Cyst parathyroid  
Kansas (Peterson Laboratory Services) - Parathyroid cyst  
Louisiana, Shreveport (LSU Health Shreveport) - Parathyroid cyst  
Maryland, Baltimore - Parathyroid cyst  
Michigan (Oakwood Hospital) - Parathyroid cyst  
New Mexico, Albuquerque - Parathyroid cyst  
Ohio, Columbus - Parathyroid gland, benign cyst  
Texas, Victoria - Parathyroidal cyst  
Canada (Universite de Sherbrooke) - Parathyroid cyst  
Hong Kong (Hong Kong Baptist Hospital) - Thyroglossal cyst  
India, Kochi - Parathyroid Cyst  
The Netherlands, Amstelveen - Parathyroid cyst

**Dx:**

Parathyroid cyst, neck

**Refs:**

Presentation of 6 cases with parathyroid cysts and discussion of the literature.

Exp Clin Endocrinol Diabetes 2008 Aug;116(8): p501-6  
Wirowski D; Wicke C, et al.

Parathyroid cyst, a rare cause of cystic cervical lesion. Case report.

Med Ultrason 2011 Jun;13(2): p157-60  
Ghervan C; Goel P

Cystic parathyroid lesions: functional and nonfunctional parathyroid cysts.

Arch Surg 2009 Jan;144(1): p52-6; discussion 56  
McCoy KL; Yim JH, et al.

Parathyroid cysts: a case report and review of the literature.  
Laryngoscope 2001 Oct;111(10): p1726-8  
Fortson JK; Patel VG; Henderson VJ

Parathyroid cysts: description of two cases and review of the literature.  
Acta Otorhinolaryngol Ital 2004 Jun;24(3): p161-4  
Mevio E; Gorini E, et al.

### **Case 2:**

A 38 y/o woman with a smoking history presented with hyperparathyroidism and schizophrenia. A 50 gram, 7.7 x 4.5 x 3.0 cm right parathyroid was removed. Within its brown-tan parenchyma were multiple, smooth-walled hemorrhagic cysts up to 1.0 cm in greatest diameter. A serum calcium was 18.8.

Santa Barbara (Miramonte Laboratory) - Parathyroid adenoma  
Santa Rosa (Santa Rosa Memorial Hospital) - Parathyroid adenoma (3)  
Woodland Hills (Kaiser Permanente) - Parathyroid adenoma  
Arkansas The Laboratory of Pathology) - Parathyroid carcinoma  
Georgia, Atlanta - Atypical adenoma of parathyroid  
Idaho, Boise - Parathyroid carcinoma  
Illinois, Oak Brook - Parathyroid adenoma  
Kansas (Peterson Laboratory Services) - Parathyroid carcinoma  
Louisiana, Shreveport (LSU Health Shreveport) - Parathyroid carcinoma  
Maryland, Baltimore - Probably parathyroid carcinoma (size, etc.)  
Michigan (Oakwood Hospital) - Parathyroid adenoma  
New Mexico, Albuquerque - Parathyroid adenoma, infarcted  
Ohio, Columbus - Parathyroid carcinoma  
Texas, Victoria - Parathyroid adenoma  
Canada (Universite de Sherbrooke) - Parathyroid carcinoma  
Hong Kong (Hong Kong Baptist Hospital) - Parathyroid adenoma  
India, Kochi - Parathyroid adenocarcinoma  
The Netherlands, Amstelveen - Parathyroid adenoma/carcinoma

### **Dx:**

Parathyroid adenocarcinoma, neck

### **Refs:**

Parathyroid carcinoma.  
J Surg Oncol 2005 Mar 1;89(3): p136-42  
Mittendorf EA; McHenry CR

HRPT2, a marker of parathyroid cancer.  
N Engl J Med 2003 Oct 30;349(18): p1691-2  
Weinstein LS; Simonds WF

Primary parathyroid tumors of the mediastinum: a clinicopathologic and immunohistochemical study of 17 cases.  
Am J Clin Pathol 2005 Nov;124(5): p749-54  
Moran CA; Suster S

Parathyroid carcinoma radiographically mimicking a carotid body tumour.

Int J Oral Maxillofac Surg 2010 Jun;39(6): p620-2

Ahmad W; Kanatas AN; Mitchell DA

Molecular alterations in hereditary and sporadic thyroid and parathyroid diseases.

Adv Anat Pathol 2009 Jan;16(1): p23-32

Hunt JL

### **Case 3:**

A 78 y/o man was found to have a thyroid nodule. Thirty-eight years before, he was told that he was hypothyroid on the basis of low protein-bound iodine, and he received thyroid preparations for 1 1/2 years. Four years previously, he was thought to have a nodular goiter. Five months before admission, a hard mass was noted in the left lobe of the thyroid. Serum T4 was 4.1 mcg/dl, antimicrosomal antibody titer was 1:25,600 and a thyroid scan was normal. He received synthroid, 0.2 mg/day for three months without change in the nodule. His pulse was 60 and regular, BP was 170/85. The left thyroid lobe was firm, non-tender, and somewhat enlarged. A left hemithyroidectomy and isthmectomy were performed. The lobe and isthmus weighed 9 grams and measured 5.0 c 3.5 x 1.5 cm. The cut surface was firm to hard, gray-tan and distinctly nodular.

Santa Barbara (Miramonte Laboratory) - Lymphocytic thyroiditis

Santa Rosa (Santa Rosa Memorial Hospital) - Nodular autoimmune/Hashimotos thyroiditis,

Fibrous variant / Nodular Hashimoto's thyroiditis / Hashimotos Thyroiditis

Woodland Hills (Kaiser Permanente) - Hashimoto thyroiditis

Arkansas The Laboratory of Pathology) - Hashimotos thyroiditis

Georgia, Atlanta - Lymphocytic (Hashimoto) thyroiditis

Idaho, Boise - Hashimotos thyroiditis

Illinois, Oak Brook - Hashimotos thyroiditis

Kansas (Peterson Laboratory Services) - Fibrosing variant of Hashimotos thyroiditis

Louisiana, Shreveport (LSU Health Shreveport) - Hashimotos thyroiditis

Maryland, Baltimore - Hashimotos thyroiditis, fibrosing variant

Michigan (Oakwood Hospital) - Hashimoto's thyroiditis

New Mexico, Albuquerque - Hashimotos thyroiditis

Ohio, Columbus - Thyroid, left lobe, Hashimotos thyroiditis

Texas, Victoria - Hashimoto thyroiditis

Canada (Universite de Sherbrooke) - MALT thyroid lymphoma and Hashimotos thyroiditis

Hong Kong (Hong Kong Baptist Hospital) - Hashimotos thyroiditis

India, Kochi - Hashimotos thyroiditis

The Netherlands, Amstelveen - Hashimotos thyroiditis

### **Dx:**

Hashimotos thyroiditis

### **Refs:**

Cytologic, flow cytometry, and molecular assessment of lymphoid infiltrate in fine-needle cytology samples of Hashimoto thyroiditis.

Cancer 2009 Jun 25;117(3): p174-84

Zeppa P; Cozzolino I

Increased incidence of well-differentiated thyroid cancer associated with Hashimoto thyroiditis and the role of the PI3k/Akt pathway.  
J Am Coll Surg 2007 May;204(5): p764-73; discussion 773-5  
Larson SD; Jackson LN, et al.

The link between Graves' disease and Hashimoto's thyroiditis: a role for regulatory T cells.  
Endocrinology 2007 Dec;148(12): p5724-33  
McLachlan SM; Nagayama Y, et al.

Immunohistochemistry of IgG4 can help subclassify Hashimoto's autoimmune thyroiditis.  
Pathol Int 2009 Sep;59(9): p636-41  
Li Y; Bai Y, et al.

Parvovirus B19 infection in Hashimoto's thyroiditis, papillary thyroid carcinoma, and anaplastic thyroid carcinoma.  
Thyroid 2011 Apr;21(4): p411-7  
Adamson LA; Fowler LJ; Clare-Salzler MJ; Hobbs JA

Clinical review: Riedel's thyroiditis: a clinical review.  
J Clin Endocrinol Metab 2011 Oct;96(10): p3031-41  
Hennessey JV

#### **Case 4:**

A 23 y/o man was admitted with a one year history of palpitations, irritability, headaches, tremors, ill fitting contact lenses, frequent hard stools, a six month history of heat intolerance, a 20 pound weight loss, occasional epistaxis, a two month history of dizziness, and "Bug" eyes. PE showed exophthalmos, fine motor tremors, brisk deep tendon reflexes, and a questionable mass in the left lobe of the thyroid. A radionuclide tracer study of the thyroid with I123 showed a diffuse increase in tracer uptake throughout an enlarged thyroid gland with 77% uptake (nl=10-20%) at 24 hours. No focal hot nodules were seen. The serum T4 was greater than 24 ug/dl (N=5.5-11.5), and the TSH and T3 resin uptake were normal. A subtotal thyroidectomy was done. The gland weighed 87 grams. Both lobes had a homogeneous, beefy red, bulging appearance.

Santa Barbara (Miramonte Laboratory) - Thyroid hyperplasia  
Santa Rosa (Santa Rosa Memorial Hospital) - Graves disease (diffuse toxic goiter), (thyroid hyperplasia)  
Woodland Hills (Kaiser Permanente) - Graves disease  
Arkansas The Laboratory of Pathology) - Graves disease  
Georgia, Atlanta - Graves disease  
Idaho, Boise - Diffuse hyperplasia  
Illinois, Oak Brook - Hyperthyroidism  
Kansas (Peterson Laboratory Services) - Graves disease  
Louisiana, Shreveport (LSU Health Shreveport) - Diffuse hyperplasia, thyroid  
Maryland, Baltimore - Diffuse hyperplasia/toxic goiter, probably Graves  
Michigan (Oakwood Hospital) - Graves disease  
New Mexico, Albuquerque - Graves disease  
Ohio, Columbus - Thyroid hyperplasia  
Texas, Victoria - Graves disease; diffuse thyroid hyperplasia  
Canada (Universite de Sherbrooke) - Graves disease

Hong Kong (Hong Kong Baptist Hospital) - Graves disease  
India, Kochi - Diffuse hyperplasia of thyroid  
The Netherlands, Amstelveen - Hyperplastic (Graves disease)

**Dx:**

Diffuse hyperplasia, thyroid, clinically Graves disease

**Refs:**

The spectrum of histologic changes in thyroid hyperplasia: a clinicopathologic study of 300 cases.  
Hum Pathol 2008 Jul;39(7): p1080-7  
Perez-Montiel MD; Suster S

Thyroidectomy is optimal treatment for Graves disease.  
J Am Coll Surg 2011 Apr;212(4): p714-20; discussion 720-1  
Feliciano DV; Lyons JD

**Case 5:**

This is from a mid-line anterior neck mass from a 50 y/o man.

Santa Barbara (Miramonte Laboratory) - Cystic papillary carcinoma  
Santa Rosa (Santa Rosa Memorial Hospital) - Papillary thyroid carcinoma, possibly arising in thyroglossal duct cyst / Papillary carcinoma of thyroid (metastatic vs. arising in a thyroglossal duct cyst) (2)  
Woodland Hills (Kaiser Permanente) - Papillary thyroid carcinoma  
Arkansas The Laboratory of Pathology) - Papillary thyroid carcinoma arising in a parathyroid duct cyst  
Georgia, Atlanta - Papillary thyroid carcinoma  
Idaho, Boise - Papillary thyroid carcinoma in thyroglossal duct cyst  
Illinois, Oak Brook - Papillary ca follicular  
Kansas (Peterson Laboratory Services) - Papillary carcinoma  
Louisiana, Shreveport (LSU Health Shreveport) - Cystic papillary thyroid carcinoma  
Maryland, Baltimore - Papillary thyroid carcinoma  
Michigan (Oakwood Hospital) - Papillary thyroid carcinoma  
New Mexico, Albuquerque - Papillary thyroid carcinoma  
Ohio, Columbus - Thyroid, anterior neck papillary carcinoma  
Texas, Victoria - TGDC with Pap thyroid ca  
Canada (University de Sherbrooke) - Papillary thyroid carcinoma in thyroglossal cyst  
Hong Kong (Hong Kong Baptist Hospital) - Papillary thyroid carcinoma in thyroglossal cyst  
India, Kochi - Papillary thyroid carcinoma of thyroglossal cyst  
The Netherlands, Amstelveen - Papillary thyroid carcinoma

**Dx:**

Papillary thyroid carcinoma in a thyroglossal duct cyst, neck

**Refs:**

Primary papillary carcinoma of the thyroglossal duct cyst--a case report.  
Indian J Pathol Microbiol 2005 Apr;48(2): p228-30  
Srinivasan R; Ranjini K; Vadhira BM

Papillary carcinoma of thyroglossal duct cyst.  
Med Sci Monit 2003 Jul;9(7): pCS67-70

Naghavi SE; Jalali MM

Papillary thyroid carcinoma of the thyroglossal duct cyst:  
comparative cytohistologic and immunochemical study of 2 new cases  
and review of the literature.

Int J Surg Pathol 2001 Jan;9(1): p65-71

Falconieri G; Della Libera D; Zanella M

Papillary carcinoma in a thyroglossal duct remnant.

Arch Otolaryngol Head Neck Surg 2002 Apr;128(4): p461-2; discussion  
463-4

Pribitkin EA; Friedman O

Coincidence of thyroid tumor and thyroglossal duct remnants. Review  
of the literature and presentation of three cases.

Tumori 2003 May-Jun;89(3): p314-20

Astl J; Duskova J; Kraus J; Vlcek P; Kodet R; Lastuvka P; Betka J

Thyroglossal duct cyst: a cytopathologic study of 26 cases.

Diagn Cytopathol 2005 Dec;33(6): p365-9

Shahin A; Burroughs FH; Kirby JP; Ali SZ

#### **Case 6:**

An adult woman presented with a myriad of endocrinological disorders. She had a 4 year hx of hypertension and presented with headache and a blood pressure of 300/190. She had a partial thyroidectomy for thyroid carcinoma 30 years previously with a recurrence 12 yrs. later. She had radical mastectomies for breast carcinomas 11 and 9 years previously. And finally, 6 yrs prior to admission, she had metastatic thyroid carcinoma to a right neck lymph node. A workup showed markedly elevated urinary catecholamines. A left retrograde pyelogram showed a mass in the upper pole of the left kidney. At laparotomy, bilateral adrenalectomies were performed. A solitary liver metastasis was removed and found to be from the breast carcinoma. The left adrenal weighed 249 grams and was 9 x 7 x 6 cm. The tumor was orange-brown with areas of hemorrhage and necrosis. It had a positive dichromate reaction. The right adrenal weighed 106 grams and was 8 x 7 x 3 cm.

Santa Barbara (Miramonte Laboratory) - Pheochromocytoma  
Santa Rosa (Santa Rosa Memorial Hospital) - Pheochromocytoma (3)  
Woodland Hills (Kaiser Permanente) - Pheochromocytoma  
Arkansas The Laboratory of Pathology) - Pheochromocytoma  
Georgia, Atlanta - Pheochromocytoma  
Idaho, Boise - Pheochromocytoma  
Illinois, Oak Brook - Pheochromocytoma AMH, familial  
Kansas (Peterson Laboratory Services) - Pheochromocytoma  
Louisiana, Shreveport (LSU Health Shreveport) - Pheochromocytoma  
Maryland, Baltimore - Pheochromocytoma, possibly malignant  
Michigan (Oakwood Hospital) - Pheochromocytoma  
New Mexico, Albuquerque - Pheochromocytoma  
Ohio, Columbus - Adrenal gland, Pheochromocytoma  
Texas, Victoria - Pheochromocytoma  
Canada (Universite de Sherbrooke) - Pheochromocytoma  
Hong Kong (Hong Kong Baptist Hospital) - Pheochromocytoma  
India, Kochi - Pheochromocytoma of adrenal gland

The Netherlands, Amstelveen - Pheochromocytoma

**Dx:**

Pheochromocytoma, adrenal gland

**Refs:**

Clinical spectrum of pheochromocytoma.

J Am Coll Surg 2009 Dec;209(6): p727-32

Guerrero MA; Schreinemakers JM, et al.

Pheochromocytoma associated with neurofibromatosis type 1: concepts and current trends.

World J Surg Oncol 2010;8:14

Zografos GN; Vasiliadis GK, et al.

Pigmented pheochromocytoma: report of a case with diagnosis by fine needle aspiration.

Acta Cytol 2005 Jul-Aug;49(4): p421-3

Handa U; Khullar U; Mohan H

Predictive factors for malignant pheochromocytoma: analysis of 136 patients.

J Urol 2011 May;185(5): p1583-90

Feng F; Zhu Y, et al.

Concurrent pheochromocytoma and cortical carcinoma of the adrenal gland.

J Surg Oncol 2011 Jan 1;103(1): p103-4

Fassina A; Cappellesso R; Schiavi F; Fassan M

Pheochromocytoma and paraganglioma.

Cancer Treat Res 2010;153:135-62

Meyer-Rochow GY; Sidhu SB

Biopsy of pheochromocytomas and paragangliomas: potential for disaster.

Surgery 2009 Dec;146(6): p1158-66

Vanderveen KA; Thompson SM, et al.

**Case 7:**

A 58 y/o man with dx of lymphoepithelioma of nasopharynx had been treated with radical surgery, radiation and hyperthermia. He died 1 yr. after the diagnosis. An autopsy showed widespread metastatic disease to bone, viscera and soft tissues. He also had bilateral lobar pneumonia, tubular adenomas of kidney, cavernous hemangioma of liver, and an islet cell adenoma of the pancreas. Your slide is from the adrenal gland.

Santa Barbara (Miramonte Laboratory) - Metastatic carcinoma

Santa Rosa (Santa Rosa Memorial Hospital) - Adrenal cortical adenoma / Metastatic nasopharyngeal carcinoma/ Adrenal adenoma with metastatic nasopharyngeal carcinoma (2)

Woodland Hills (Kaiser Permanente) - Adrenal cortical hyperplasia

Arkansas The Laboratory of Pathology) - Adrenal adenoma and metastatic carcinoma

Georgia, Atlanta - Metastatic carcinoma

Idaho, Boise - Adrenal adenoma metastatic  
Illinois, Oak Brook - Adrenal cortical adenoma+metastatic ca  
Kansas (Peterson Laboratory Services) - Adrenocortical adenoma, plus metastatic nasopharyngeal undifferentiated carcinoma  
Louisiana, Shreveport (LSU Health Shreveport) - Metastatic tumor to adrenal gland  
Maryland, Baltimore - Adrenal cortical adenoma with a metastasis  
Michigan (Oakwood Hospital) - Adrenocortical hyperplasia  
New Mexico, Albuquerque - Metastatic carcinoma  
Ohio, Columbus - Adrenal gland, cortical adenoma, carcinoma probably metastatic  
Texas, Victoria - Metastatic carcinoma; adenoma thyroid  
Canada (University de Sherbrooke) - Adrenal adenoma with metastatic adenocarcinoma  
Hong Kong (Hong Kong Baptist Hospital) - Adrenal cortical adenoma & Pheochromocytoma  
India, Kochi - Adrenal adenoma with metastatic nasopharyngeal lymphoepithelioma  
The Netherlands, Amstelveen - Adrenal cortical adenoma

**Dx:**

Adrenal adenoma with metastatic nasopharyngeal lymphoepithelioma (collision tumor), adrenal gland

**Refs:**

Adrenal collision tumor diagnosed by F-18 fluorodeoxyglucose PET/CT.  
Clin Nucl Med 2010 Jun;35(6): p414-7  
Anderson SB; Webb MD; Banks KP

Myelolipoma with adrenocortical adenoma: an unusual combination that can resemble carcinoma.  
Endocr Pathol 2007 Summer;18(2): p103-5  
Al-Brahim N; Asa S

Collision/composite tumors of the adrenal gland: a pitfall of scintigraphy imaging and hormone assays in the detection of adrenal metastasis.  
J Clin Endocrinol Metab 2005 Aug;90(8): p4924-9  
Thorin-Savoure A; Tissier-Rible F, et al.

Collision adrenal tumors on PET/CT.  
AJR Am J Roentgenol 2004 Sep;183(3): p864-5  
Blake MA; Sweeney AT; Kalra MK; Maher MM

**Case 8:**

This is a 12 x 9 x 7 ovoid adrenal tumor from a 76 y/o woman with hirsutism, water retention, and elevated cortisol levels without diurnal variation. Case seen by Dr. Nancy Warner.

Santa Barbara (Miramonte Laboratory) - Adrenal cortical carcinoma  
Santa Rosa (Santa Rosa Memorial Hospital) - Adrenal cortical carcinoma (3)  
Woodland Hills (Kaiser Permanente) - Adrenal cortical carcinoma  
Arkansas The Laboratory of Pathology) - Adrenal cortical carcinoma  
Georgia, Atlanta - Atypical adrenal cortical neoplasm; r/o malignancy  
Idaho, Boise - Adrenal carcinoma  
Illinois, Oak Brook - Adrenal cortical carcinoma  
Kansas (Peterson Laboratory Services) - Adrenal cortical carcinoma  
Louisiana, Shreveport (LSU Health Shreveport) - Adrenal carcinoma

Maryland, Baltimore - Adrenal cortical carcinoma  
Michigan (Oakwood Hospital) - Adrenocortical carcinoma  
New Mexico, Albuquerque - Oncocytic adrenal adenoma  
Ohio, Columbus - Adrenal gland, carcinoma  
Texas, Victoria - Adrenal cortical carcinoma  
Canada (Universite de Sherbrooke) - Granulosa cell tumor metastatic to adrenal gland  
Hong Kong (Hong Kong Baptist Hospital) - Adrenal cortical carcinoma  
India, Kochi - Low grade adenocarcinoma of adrenal gland  
The Netherlands, Amstelveen - Adrenal cortical carcinoma

**Dx:**

Low grade adrenal adenocarcinoma, adrenal gland

**Refs:**

Chance diagnosis of low stage non-metastasized adrenal cortical carcinoma in a young woman with retroperitoneal hemorrhage.

Pathol Res Pract 2003;199(11): p761-3

Bussani R; Camilot D; Trombetta C; Silvestri F

Myxoid adrenal cortical carcinoma--a rare variant of adrenocortical carcinoma.

Indian J Med Sci 2005 Nov;59(11): p505-7

Suresh B; Kishore TA; Albert AS; Joy A

Cystic adrenal neoplasms.

Cancer 2004 Oct 1;101(7): p1537-44

Erickson LA; Lloyd RV; Hartman R; Thompson G

Adrenal cortical diseases: international case conference.

Endocr Pathol 2002 Summer;13(2): p141-8

Sasano H; Suzuki T; Irie J; Kawai K; Aiba M; McNicol AM; Takami H

Adrenal cortical neoplasms in the pediatric population: a clinicopathologic and immunophenotypic analysis of 83 patients.

Am J Surg Pathol 2003 Jul;27(7): p867-81

Wieneke JA; Thompson LD; Heffess CS

**Case 9:**

A 74 y/o obese, hypertensive, diabetic female was seen for marked dyspnea and ankle edema of one months duration. For the past 4-5 months she had noted increasing facial hirsutism, thinning of scalp hair, and flushing of the skin of the face and neck. Exam showed thinning of hair, hirsutism, rounded facies, truncal obesity and thin extremities. BP was 160/100. Multiple ecchymoses were present. Plasma cortisol 27 (N-5-20), 17-hydroxycorticosteroids 40.3 (N 5-15), 17 ketosteroids 12.1 (N 5-15), cholesterol 448, alkaline phosphatase 225, LDH 459. X-rays showed a large mass superior to the right kidney and a large renal calculus. The excised adrenal was 310 grams and 9 cm in greatest diameter. It had a multinodular surface with focal penetration of tumor through the capsule. Tumor was hemorrhagic, necrotic, and variegated gray-pink-tan to dark purple. The patient had post-op cardiac arrest and died 8 days later.

Santa Barbara (Miramonte Laboratory) - Adrenal cortical carcinoma

Santa Rosa (Santa Rosa Memorial Hospital) - Adrenal cortical carcinoma (3)

Woodland Hills (Kaiser Permanente) - Adrenal cortical carcinoma  
Arkansas The Laboratory of Pathology) - Adrenal cortical carcinoma  
Georgia, Atlanta - Atypical adrenal cortical neoplasm r/o malignancy  
Idaho, Boise - Adrenal cortical carcinoma  
Illinois, Oak Brook - Cortical neoplasia  
Kansas (Peterson Laboratory Services) - Adrenocortical carcinoma  
Louisiana, Shreveport (LSU Health Shreveport) - Adrenal carcinoma  
Maryland, Baltimore - Adrenal cortical carcinoma  
Michigan (Oakwood Hospital) - Adrenocortical carcinoma  
New Mexico, Albuquerque - Adrenal carcinoma  
Ohio, Columbus - Adrenal gland, carcinoma  
Texas, Victoria - Adrenal cortical carcinoma  
Canada (Universite de Sherbrooke) - Oncocytic adrenocortical carcinoma  
Hong Kong (Hong Kong Baptist Hospital) - Adrenal cortical carcinoma  
India, Kochi - Adrenal cortical carcinoma  
The Netherlands, Amstelveen - Adrenal cortical carcinoma

**Dx:**

Adrenal cortical adenocarcinoma, adrenal gland

**Refs:**

Myxoid adrenal cortical neoplasms.

Ann Diagn Pathol 2008 Oct;12(5): p344-8

Raparia K; Ayala AG; Sienko A; Zhai QJ; Ro JY

Adrenal cortical carcinoma--review of current knowledge and treatment practices.

Hematol Oncol Clin North Am 2007 Jun;21(3): p489-507; viii-ix

Phan AT

32-year survival with metastatic adrenal cortical carcinoma--update of a case report.

Anticancer Res 2007 Mar-Apr;27(2): p1045-6

Meyer A; Behrend M

Immunohistochemical distinction of primary adrenal cortical lesions from metastatic clear cell renal cell carcinoma: a study of 248 cases.

Am J Surg Pathol 2011 May;35(5): p678-86

Sangoi AR; Fujiwara M, et al.

Adrenal cortical neoplasms in children: why so many carcinomas and yet so many survivors?

Pediatr Dev Pathol 2009 Jul-Aug;12(4): p284-91

Dehner LP; Hill DA

**Case 10:**

A large, hemorrhagic mass was removed from the region of an adrenal gland of an adult male. It was clinically secreting estradiol.

Santa Barbara (Miramonte Laboratory) - Neuroendocrine carcinoma

Santa Rosa (Santa Rosa Memorial Hospital) - Adrenal cortical carcinoma / Malignant endocrine tumor with

hemorrhage / Malignant tumor r/o adrenal cortical carcinoma vs. germinal tumor

Woodland Hills (Kaiser Permanente) - Adrenal cortical carcinoma  
Arkansas The Laboratory of Pathology) - Adrenal cortical carcinoma  
Georgia, Atlanta - Adrenal cortical carcinoma  
Idaho, Boise - Adrenal carcinoma  
Illinois, Oak Brook - Pheochromocytoma  
Kansas (Peterson Laboratory Services) - Adrenocortical carcinoma  
Louisiana, Shreveport (LSU Health Shreveport) - Adrenal carcinoma  
Maryland, Baltimore - Adrenal cortical carcinoma  
Michigan (Oakwood Hospital) - Adrenocortical carcinoma  
New Mexico, Albuquerque - Metastatic renal cell carcinoma  
Ohio, Columbus - Adrenal gland, carcinoma  
Texas, Victoria - Adrenal cortical carcinoma  
Canada (Universite de Sherbrooke) - Adrenocortical carcinoma  
Hong Kong (Hong Kong Baptist Hospital) - Adrenal cortical carcinoma  
India, Kochi - Adrenal cortical carcinoma secreting estradiol  
The Netherlands, Amstelveen - Adrenal cortical adenoma/carcinoma

**Dx:**

Adrenal cortical adenocarcinoma secreting estradiol, adrenal gland

**Refs:**

Tailored hormonal therapy in secretory adrenocortical cancer.  
Ann Oncol 2007 Jul;18(7): p1281  
Carmona-Bayonas A; Soler IO, et al.

Androgen- and estrogen-secreting adrenal cancers.  
Semin Oncol 2010 Dec;37(6): p638-48  
Cavlan D; Bharwani N; Grossman A

Adrenal incidentalomas: surgical treatment in 28 patients and update of the literature.  
Int Urol Nephrol 2001;32(3): p295-302  
Porcaro AB; Novella G, et al.

Functioning adrenal tumours in children and adolescents: an institutional experience.  
ANZ J Surg 2001 Feb;71(2): p103-7  
Mishra A; Agarwal G; Misra AK; Agarwal A; Mishra SK

