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"Endocrine Pathology: Parathyroid Glands and Anterior Mediastinum"

Case 1

54 y/o woman was found to have a 4.6 cm mass associated within the left lobe of the thyroid gland. It extended from the superior mediastinum to the larynx and was filled with 100 ml of straw-colored fluid.

Dx: Parathyroid cyst

Ardito G; Fadda G; Danese D; Modugno P; Giordano A; Revelli L; Ardito F; Pontecorvi A. Coexistence of a parathyroid adenoma and parathyroid cyst causing primary hyperparathyroidism. J Endocrinol Invest 2003 Jul;26(7): p679-82

Casella C; Della Casa D; Baronchelli C; Di Fabio F; Mittempergher F. Giant intrathyroidal parathyroid cyst with hyperparathyroidism: a case report. Ann Ital Chir 2005 Jul-Aug;76(4): p391-4

Mevio E; Gorini E; Sbrocca M; Artesi L; Mullace M; Lecce S. Parathyroid cysts: description of two cases and review of the literature. Acta Otorhinolaryngol Ital 2004 Jun;24(3): p161-4

Lassaletta L; Bernaldez R; Garcia-Pallares M; Morera E. Surgical management of recurrent parathyroid cyst. Auris Nasus Larynx 2002 Jan;29(1): p83-5

Hamy A; Masson S; Heymann MF; Visset J; Paineau J. Parathyroid cyst. Report of ten cases. Ann Chir 2002 Mar;127(3): p203-7

Wani S; Hao Z. Atypical cystic adenoma of the parathyroid gland: case report and review of literature. Endocr Pract 2005 Nov-Dec;11(6): p389-93

Case 2

35 y/o male with hyperparathyroidism, renal failure and hemosiderosis.

Dx: Parathyroid hyperplasia

Schamp S; Dunser E; Schuster H; Kramer-Deimer J; Kettenbach J; Funovics M; Lang U; Meisl FT; Umek H. Ultrasound-guided percutaneous ethanol ablation of parathyroid hyperplasia: preliminary experience in patients on chronic dialysis. Ultraschall Med 2004 Apr;25(2): p131-6

Gordon L; Burkhalter W; Mah E. Dual-phase 99mTc-sestamibi imaging: its utility in parathyroid hyperplasia and use of immediate/delayed image

ratios to improve diagnosis of hyperparathyroidism. J Nucl Med Technol 2002 Dec;30(4): p179-84

Miccoli P; Minuto MN; Cetani F; Ambrosini CE; Berti P. Familial parathyroid hyperplasia: is there a place for minimally invasive surgery? Description of the first treated case. J Endocrinol Invest 2005 Nov;28(10): p942-3

Penner CR; Thompson LD. Primary parathyroid hyperplasia. Ear Nose Throat J 2003 May;82(5): p363

Ricci F; Mingazzini PL; Sebastiani V; D'Erasmo E; Letizia C; De Toma G; Alo PL. P53 as a marker of differentiation between hyperplastic and adenomatous parathyroids. Ann Diagn Pathol 2002 Aug;6(4): p229-35

Takahashi F; Denda M; Finch JL; Brown AJ; Slatopolsky E. Hyperplasia of the parathyroid gland without secondary hyperparathyroidism. Kidney Int 2002 Apr;61(4): p1332-8

Case 3

34 y/o male with hx of hyperparathyroidism, parathyroidectomy and reimplantation into the right forearm. This tissue is from an enlarging mass in the right forearm.

Dx: Parathyroid hyperplasia - water clear variant

Prasad KK; Agarwal G; Krishnani N. Water-clear cell adenoma of the parathyroid gland: a rare entity. Indian J Pathol Microbiol 2004 Jan;47(1): p39-40

Gill AJ; Clarkson A; Gimm O; Keil J; Dralle H; Howell VM; Marsh DJ. Loss of nuclear expression of parafibromin distinguishes parathyroid carcinomas and hyperparathyroidism-jaw tumor (HPT-JT) syndrome-related adenomas from sporadic parathyroid adenomas and hyperplasias. Am J Surg Pathol 2006 Sep;30(9): p1140-9

Bell WC. Surgical pathology of the parathyroid glands. Adv Exp Med Biol 2005;563:1-9

Roth SI; Faquin WC. The pathologist's intraoperative role during parathyroid surgery. Comment On: RefSource:Arch Pathol Lab Med. 2003 Jan; 127(1):64-7/PMID:12521369; Comment In: RefSource:Arch Pathol Lab Med. 2003 Sep; 127(9):1082-3; author reply 1083/PMID:12951963. Arch Pathol Lab Med 2003 Jan;127(1): p15

Lewin E; Olgaard K. Influence of parathyroid mass on the regulation of PTH secretion. Kidney Int Suppl 2006 Jul;(102): pS16-21

Sianesi M; Del Rio P; Arcuri MF; Iapichino G; Giuseppe R. Hyperparathyroidism associated with thyroid pathology. Am J Surg 2003 Jan;185(1): p58-60

Pellitteri PK. Directed parathyroid exploration: evolution and evaluation of this approach in a single-institution review of 346 patients. Laryngoscope 2003 Nov;113(11): p1857-69

Case 4

76 y/o asymptomatic woman had an elevated serum calcium of 13.8 mg/dl (3.4 mmol/L) which was discovered on a routine chemistry panel. She had no significant past medical history. A neck exploration was subsequently performed.

The left superior parathyroid gland weighed 3.6 mg. A second parathyroid gland was biopsied and found to be normal.

Dx: Parathyroid adenoma

Marienhagen K; Due J; Hanssen TA; Svartberg J. Surviving extreme hypercalcaemia--a case report and review of the literature. J Intern Med 2005 Jul;258(1): p86-9

Abboud B; Sleilaty G; Helou E; Mansour E; Tohme C; Noun R; Sarkis R. Existence and anatomic distribution of double parathyroid adenoma. Laryngoscope 2005 Jun;115(6): p1128-31

Ardito G; Fadda G; Danese D; Modugno P; Giordano A; Revelli L; Ardito F; Pontecorvi A. Coexistence of a parathyroid adenoma and parathyroid cyst causing primary hyperparathyroidism. J Endocrinol Invest 2003 Jul;26(7): p679-82

Ricci F; Mingazzini PL; Sebastiani V; D'Erasmo E; Letizia C; De Toma G; Alo PL. P53 as a marker of differentiation between hyperplastic and adenomatous parathyroids. Ann Diagn Pathol 2002 Aug;6(4): p229-35

Yeh MW; Barraclough BM; Sidhu SB; Sywak MS; Barraclough BH; Delbridge LW. Two hundred consecutive parathyroid ultrasound studies by a single clinician: the impact of experience. Endocr Pract 2006 May-Jun;12(3): p257-63

Wani S; Hao Z. Atypical cystic adenoma of the parathyroid gland: case report and review of literature. Endocr Pract 2005 Nov-Dec;11(6): p389-93

Case 5

48 y/o man with gradual progression of weakness x 2 yrs. Serum Ca++ 9.8-15.7 mg%. Parathyroid hormone 405 (N < 90). IV pyelogram showed scattered calcified areas. At surgery a single 3.5 x 1.5 x 1.5 cm nodule was removed from the upper posterior aspect of the thyroid. Other parathyroid glands appeared normal.

Dx: Atypical parathyroid adenoma

Gill AJ; Clarkson A; Gimm O; Keil J; Dralle H; Howell VM; Marsh DJ. Loss of nuclear expression of parafibromin distinguishes parathyroid carcinomas and hyperparathyroidism-jaw tumor (HPT-JT) syndrome-related adenomas from

sporadic parathyroid adenomas and hyperplasias. Am J Surg Pathol 2006 Sep;30(9): p1140-9

Odashiro AN; Nguyen GK. Fine-needle aspiration cytology of an intrathyroid parathyroid adenoma. Diagn Cytopathol 2006 Nov;34(11): p790-2

Fischer I; Wieczorek R; Sidhu GS; Pei Z; West B; Lee P. Myxoid lipoadenoma of parathyroid gland: a case report and literature review. Ann Diagn Pathol 2006 Oct;10(5): p294-6

Yusim A; Aspelund G; Ahrens W; Martel M; Scoutt LM; Donovan PI; Udelsman R. Intrathyroidal parathyroid adenoma. Thyroid 2006 Jun;16(6): p619-204

Case 6

30 y/o female with a 10 gram mass in the right pre-vertebral area. The surgeon noted that it was a difficult resection. The patient had secondary hyperparathyroidism (with other glands weighing 50-80 mg).

Dx: Parathyroid adenocarcinoma

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

De Lellis RA. Parathyroid carcinoma: an overview. Adv Anat Pathol 2005 Mar;12(2): p53-61

Jimenez-Garcia A; Milan JA; Garcia-Escudero A; Marin-Velarde C; Cantillana J; Echenique-Elizondo M. Parathyroid carcinoma on transplanted parathyroid tissue after total parathyroidectomy for renal hyperparathyroidism. Am J Clin Oncol 2006 Apr;29(2): p207-8

Ikeda K; Tate G; Suzuki T; Mitsuya T. Cytologic comparison of a primary parathyroid cancer and its metastatic lesions: a case report. Diagn Cytopathol 2006 Jan;34(1): p50-5

Wiseman SM; Rigual NR; Hicks WL; Popat SR; Lore JM; Douglas WG; Jacobson MJ; Tan D; Loree TR. Parathyroid carcinoma: a multicenter review of clinicopathologic features and treatment outcomes. Ear Nose Throat J 2004 Jul;83(7): p491-4

Case 7

Mediastinal mass in a 4 y/o boy.

Dx: Thymic cyst

Scharifker D. True thymic hyperplasia associated with a unilocular thymic cyst: an unusual combination not previously reported. Ann Diagn Pathol 2006 Feb;10(1): p32-5

Rakheja D; Weinberg AG. Multilocular thymic cyst associated with mature mediastinal teratoma: a report of 2 cases. Arch Pathol Lab Med 2004 Feb;128(2): p227-8

Zaitlin N; Rozenman J; Yellin A. Papillary adenocarcinoma in a thymic cyst: a pitfall of thoracoscopic excision. Ann Thorac Surg 2003 Oct;76(4): p1279-81

Moran CA; Suster S; El-Naggar A; Luna MA Carcinomas arising in multilocular thymic cysts of the neck: a clinicopathological study of three cases. Histopathology 2004 Jan;44(1): p64-8

Izumi H; Nobukawa B; Takahashi K; Kumasaka T; Miyamoto H; Yamazaki A; Sonobe S; Uekusa T; Suda K. Multilocular thymic cyst associated with follicular hyperplasia: clinicopathologic study of 4 resected cases. Hum Pathol 2005 Jul;36(7): p841-4

Case 8

59 y/o woman found to have an anterior mediastinal mass on routine chest x-ray. No hx of myasthenia gravis or other systemic diseases.

Resected mass was 5 x 4.5 x 3 cm and well encapsulated with a gray bosselated surface. It was attached to fatty thymic tissue. No calcification, necrosis or cystic change.

CAP put this slide into a 1991 PIP set.

Dx: Encapsulated thymoma

Suster S; Moran CA. Thymoma classification: current status and future trends. Am J Clin Pathol 2006 Apr;125(4): p542-54

Wright CD; Wain JC. Acute presentation of thymoma with infarction or hemorrhage. Ann Thorac Surg 2006 Nov;82(5): p1901-4

Wakely PE. Cytopathology of thymic epithelial neoplasms. Semin Diagn Pathol 2005 Aug;22(3): p213-22

Wright CD; Kessler KA. Surgical treatment of thymic tumors. Semin Thorac Cardiovasc Surg 2005 Spring;17(1): p20-6

Kondo K; Monden Y. Thymoma and myasthenia gravis: a clinical study of 1,089 patients from Japan. Ann Thorac Surg 2005 Jan;79(1): p219-24

Moran CA; Suster S. "Ancient" (sclerosing) thymomas: a clinicopathologic study of 10 cases. Am J Clin Pathol 2004 Jun;121(6): p867-71

Case 9

82 y/o male with an encapsulated mass in the anterior mediastinum.

Dx: Thymoma

Chuah C; Lim TH; Lim AS; Tien SL; Lim CH; Soong R; Lee F; Linn YC; Goh YT; Cheah FK; Loh AH. Dasatinib induces a response in malignant thymoma. J Clin Oncol 2006 Dec 1;24(34): pe56-8

Renshaw AA; Haja JC; Neal MH; Wilbur DC. Distinguishing carcinoid tumor of the mediastinum from thymoma: correlating cytologic features and performance in the College of American Pathologists Interlaboratory Comparison Program in Nongynecologic Cytopathology. Arch Pathol Lab Med 2006 Nov;130(11): p1612-5

Volk EE. Association between thymoma and autoimmune enteropathy in adults. Comment On: RefSource:Hum Pathol. 2006 Mar; 37(3):373-6. Hum Pathol 2006 Oct;37(10): p1368; author reply 1368-9

Meyer S; Kroiss M; Landthaler M; Vogt T. Thymoma, myasthenia gravis, eruptions of pemphigus vulgaris and a favourable course of relapsing melanoma: an immunological puzzle. Br J Dermatol 2006 Sep;155(3): p638-40

Riedel RF; Burfeind WR. Thymoma: benign appearance, malignant potential. Oncologist 2006 Sep;11(8): p887-94

Case 10

47 y/o man with an anterior mediastinal mass on chest x-ray. There were no associated symptoms. At surgery the mass was 8 cm in diameter, encapsulated, moderately firm, and fleshy.

Dx: Thymic carcinoid

Luh SP; Kuo C; Liu WS; Wu TC; Koo CL; Chen JY. Carcinoid tumor of the thymus: a clinicopathologic report of two cases with a review of the literature. Int Surg 2005 Nov-Dec;90(5): p270-4

Takagi J; Otake K; Morishita M; Kato H; Nakao N; Yoshikawa K; Ikeda H; Hirooka Y; Hattori Y; Larsson C; Nogimori T. Multiple endocrine neoplasia type I and Cushing's syndrome due to an aggressive ACTH producing thymic carcinoid. Intern Med 2006;45(2): p81-6

Lin FC; Lin CM; Hsieh CC; Li WY; Wang LS. Atypical thymic carcinoid and malignant somatostatinoma in type I multiple endocrine neoplasia syndrome: case report. Am J Clin Oncol 2003 Jun;26(3): p270-2

Gao Z; Kahn L; Bhuiya T. Thymic carcinoid with mucinous stroma: a rare variant of carcinoid with an aggressive clinical course. Ann Diagn Pathol 2006 Apr;10(2): p114-6

Renshaw AA; Haja JC; Neal MH; Wilbur DC. Distinguishing carcinoid tumor of the mediastinum from thymoma: correlating cytologic features and performance in the College of American Pathologists Interlaboratory Comparison Program in Nongynecologic Cytopathology. Arch Pathol Lab Med 2006 Nov;130(11): p1612-5

Wu MH; Tseng YL; Cheng FF; Lin TS. Thymic carcinoid combined with myasthenia gravis. J Thorac Cardiovasc Surg 2004 Feb;127(2): p584-5