Introduction or Background: Corticomedullary mixed tumors of the adrenal gland was first described in 1969 by Mathison and Waterhouse. It is defined as a single tumor mass of the adrenal gland that histopathologically has presence of adrenal cortical and medullary cells. Such mixed tumors involving the cortical and medullary components of the adrenal glands are very rare. Clinical Case (including diagnostic evaluation, treatment, and follow-up):A 67 year old woman with a history of hypertension and osteoporosis presents for incidental adrenal adenoma. Hypertension was controlled well with olmesartan 40mg, hctz 25mg, and amlodipine 2.5mg. Abdominal CT scan showed a 2.6 cm enhancing left adrenal nodule with delayed washout phase. Biochemical testing showed elevated plasma free metanephrine (132pq/ml, n < or = 57pq/ml) and abnormal 1mg dexamethasone suppression test (10.4mcg/dL, n <2mcg/dL). ACTH was suppressed. Patient underwent left adrenalectomy, after pretreatment with doxazosin. Surgical pathology report showed an unusual neoplasm consisting of a single nodule composed of intermixed aggregates of cortical cells and pheochromocytes displaying morphologic features of adrenal adenoma and pheochromocytoma. Also intermixed with the adenoma was a 3mm myelolipoma. Post surgery, the patient was treated with hydrocortisone for symptoms of adrenal insufficiency. Post surgery, she was able to stop amlodipine and hctz and is on 10 mg olmesartan on alternate days.. She remains on a weaning dose of hydrocortisone at the time of abstract submission. Clinical Lesson(s) or Conclusion(s) (emphasizing the learning point[s] and implications for clinical practice)This unique case report highlights the importance of appropriate workup for incidental adrenal adenoma and keeping in mind the rare possibility of mixed endocrine tumours. A single mixed tumor of the adrenal gland is rare but exhibits distinct morphologic features of both a cortisol producing tumor along with a pheochromocytoma. Furthermore, a concurrent intermixing of a myelolipoma within an adrenal corticomedullary mixed tumor is rarely reported.

Adrenal

ADRENAL CASE REPORTS

ACTH-Dependent Cushing's Syndrome in an Elderly Woman with Pituitary, Adrenal, and Intrathoracic Lesions

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A 77-year-old female with rheumatoid arthritis on etanercept, depression on venlafaxine, and treated hypothyroidism presented with easy bruising and muscle weakness. She denied any steroid use. She had normal BP and BMI, but appeared mildly Cushingoid with round facies, and increased dorsocervical and supraclavicular fat.
Laboratory evaluation showed: ACTH 70.8 pg/mL (< 63.3), cortisol 24.3 ug/dL, 24 h urine free cortisol 223 ug (< 50), salivary cortisol 0.428 ug/dL, DHEA-S 165.7 ug/dL (< 142.8), LH 0.1 mIU/mL, FSH 2.7 mIU/mL, and hgbA1C 6.1 % (< 5.6 %). All other hormonal testing was normal. MRI of the pituitary showed a 4 x 2 x 3 mm hypoenhancing defect of the anterior pituitary. CT of the chest and abdomen showed a 1.1 cm left adrenal nodule, and a 1 cm non-specific right middle lobe lung nodule. Inferior petrosal sinus sampling (IPSS) with CRH did not show a central ACTH step-up. PET/CT with DOTATATE showed mildly increased tracer uptake in the right middle lobe measuring 1 cm with SUV max 3.7, and a 0.6 cm left apical subpleural nodule with SUV max 1.9.
The patient underwent a right middle lobectomy and pathology was positive for typical carcinoid. Post-operatively, she needed hydrocortisone replacement for 9 months. ACTH was 19.7 pg/dL, cortisol 9.5 ug/dL, DHEA-S 31.3 ug/dL, LH 61.8 mIU/mL, and FSH 112.4 mIU/mL. Her Cushingoid features and myopathy resolved.
This case highlights several challenges in the diagnosis and source localization in patients with ACTH-dependent Cushing's Syndrome (CS). In this slim, elderly female, the typical features of CS were subtle. In addition, dynamic biochemical testing with high dose dexamethasone does not reliably distinguish eutopic from ectopic ACTH-dependent CS, as the sensitivity and specificity range from 60–80%. Thus, the diagnosis largely depends on sophisticated imaging and IPSS.
The patient had pituitary, adrenal, and lung lesions. The pituitary lesion initially pointed towards a central ACTH source, but IPSS was negative. The prevalence of pituitary incidentalomas is high, at 10.6% based on autopsy data, with an increasing proportion being recognized in the elderly. Adrenal incidentalomas are also often noted in older individuals, but that was clearly not the cause of CS in this patient with a non-suppressed DHEA-S and elevated ACTH. PET/CT with DOTATATE has emerged as a sensitive test for the detection of often small tumors producing ectopic ACTH and was positive in the lung lesion. In spite of newer localization techniques, the source of ectopic ACTH often remains unidentified (12.5% in a large retrospective case-record study). False negatives on PET/CT with DOTATATE imaging may be due to cortisol's suppressive effect on the somatostatin receptor expression in neuroendocrine tumors. Thus, in cases of ACTH-dependent CS with negative IPSS, ectopic ACTH must remain as a likely source, and be re-explored after medical treatment of the hypercortisolism.

Adrenal

ADRENAL CASE REPORTS

Acute Adrenal Infarct in a Pregnant Female With Severe Abdominal Pain

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Background: The differential diagnosis for pregnant patient presenting with abdominal pain is broad. Adrenal infarction is a rare cause of such presentation. **Clinical Case:** A 24-year-old woman, 30 weeks pregnant, presented to the emergency room with severe, sharp, left upper quadrant abdominal pain that radiated to the back and was associated with nausea and vomiting. Abdominal exam showed tenderness to light palpation in the left upper area with voluntary guarding. Genitourinary exam