Adrenal

ADRENAL CASE REPORTS III

Pheochromocytoma - Illusive Myriad of Symptoms
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MON-LB041

Background: Pheochromocytoma is a rare neuroendocrine neoplasm arising from the adrenal medullary chromaffin cells. It contributes to 80-85% of catecholamine secreting tumors. The annual incidence of pheochromocytoma is 0.8 cases per 100,000 person-years. It can be both sporadic or familial. The classic triad of headache, palpitations and diaphoresis is seen in only 4% of cases. Rare presentations include cardiomyopathy, stroke, diabetes mellitus, ventricular arrhythmias and myocardial infarction. Our patient presented concurrently with dilated cardiomyopathy, hypertensive emergency and new-onset diabetes mellitus (DM) followed by ischemic stroke within a week. Heart failure can present as takotsubo or dilated cardiomyopathy with an incidence of 10%. The underlying pathophysiology is catecholamine mediated myocardial stunning, diffuse coronary vasospasm, microvasculature dysfunction and fibrosis. DM is in 23% of pheochromocytoma and is due to catecholamine-induced impaired glucose tolerance, and insulin resistance. Cerebral ischemia has an incidence of 3%, and is secondary to severe hypertension and cerebral vasospasm. Clinical Case: A 47-year-old African American woman presented with a 1-week duration of worsening dyspnea, orthopnea, dizziness, and palpitations. Past medical history includes HTN, non-ischemic cardiomyopathy on carvedilol and pravastatin. Physical exam: BP 182/119, HR 120, mild pulmonary crackles. Labs: proBNP 3533 (1-150 pg/ml), HbA1c 13.1%. Echocardiogram: moderate global hypokinesis with left ventricle ejection fraction (LVEF) of 40-45%. Conclusion: Pheochromocytoma can rarely present with multi-organ failure. It warrants a high index of suspicion in non-ischemic cardiomyopathy. As per recent Mayo Clinic criteria, diagnosis of takotsubo cardiomyopathy mandates ruling out pheochromocytoma. As seen in our patient, it is a reversible cause of left ventricular dysfunction, focal weakness and DM. Based on our knowledge, this is the only contingently diagnosed pheochromocytoma with varied clinical presentations. It has been aptly described as “The Great Masquerader”.

Genetics and Development (including Gene Regulation)

ENDOCRINE DISRUPTING CHEMICALS

Tamoxifen Affects MiRNA Expression in Uterus and Breast Tamoxifen Affects MiRNA Expression in Uterus and Breast

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SAT-LB130

In addition to genetic factors, environmental factors and lifestyle can play a significant role in the development of hormone-dependent tumors, such as endometrial cancer (EC) and breast cancer (BC). The discovery of microRNAs (miRs) involved in the post-transcriptional regulation of many genes, including those of hormonal carcinogenesis, namely, steroid receptors and their target genes, strengthened the epigenetic direction in the study of carcinogenesis mechanisms. A critical event in the development of hormone-dependent human tumors is violation in the metabolism of steroid hormones, primarily estradiol. An interesting aspect of the problem of ERα inhibition is the use of tamoxifen (TAM) in clinical practice in the treatment of hormone-dependent BC. A well-known side effect of TAM is increased proliferation in the endometrium and an elevated risk of BC. One of the mechanisms explaining such differences in the effects of TAM is formation of DNA adducts in endometrial cells, but this mechanism has not yet been substantiated. Therefore, the problem of carcinogenesis of the uterus with this drug remains unresolved and requires further research. The aim of our study was to evaluate the expression of miRs and target genes for hormonal carcinogenesis in the uterus and mammary gland under the exposure with TAM. As an object of study, we used female rats, primary human cell cultures and tissues of TAM-induced human endometrial hyperplasia. The results showed that estradiol enhances the expression of oncogenic microRNAs miR-21, 221, -222 by three-times, both in the rat mammary gland and endometrium, which confirms its oncogenic properties. In the rat endometrium, TAM, to a greater extent than estradiol, increased the expression of catecholamine levels, HbA1c of 5.4% and LVEF of 40-45%.
of oncogenic miRs, especially miR-419, -23a, -24-2, -27, and significantly reduced the expression of their target genes. In addition, TAM caused a multiple (8-fold) increase in the expression of cyclin D in uterus compared with mammary gland. In most cases, TAM reduced expression of oncogenic miR-21,-221,-222 by 50% in BC primary cell culture whereas in EC primary cell culture expression of oncogenic 190a was increased. We also investigated the activity of estrogen-metabolizing enzymes in tamoxifen-induced human endometrial hyperplasia. A significant difference was found in the expression of estrogen-metabolizing genes (CYP1A1,1B, CYP19, SULT1A1, SULT1E1, GSTP1,2, COMT, STS) in TAM-induced endometrial hyperplasia, which may be due to the difference in mRNA expression. Thus, both for the animal model and human cell cultures, it was shown that TAM causes other changes in the expression of microRNAs in the endometrium compared with the breast. Further studies with the identification of target miRNA genes will help identify molecular targets of TAM-induced endometrial hyperplasia. This work was supported by Russian Science Foundation, grant # 19-15-00319.

Tumor Biology

ENDOCRINE NEOPLASIA CASE REPORTS III

Central Diabetes Insipidus as Presenting Manifestation of Suprasellar Epidermoid Cyst

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SAT-LB312

Back Ground: Epidermoid cysts (ECs) result from the inclusion of squamous epithelial elements during neural tube closure. ECs are tumors constituting 02-1.8% of all brain tumors. ECs are typically found in cerebellopontine angle, but occasionally develop in sellar region. ECs are usually clinically silent, but may produce signs of mass effect as headaches, visual field defects. ECs presenting with Central Diabetes insipidus is reported but rare. Only two cases were reported in literature (Ref: 1). Here we report a case of sellar Epidermoid cyst presenting with Diabetes insipidus. Case Description: 49-year male presented with one-month history of polyuria, polydipsia and weight loss. The initial work up identified normal blood glucose, serum calcium and renal function. The water deprivation test confirmed the diagnosis of central Diabetes insipidus. Further pituitary hormonal assessment revealed panhypopituitarism along with diabetes insipidus. The MRI of brain showed evidence of large sellar suprasellar cystic mass with a differential diagnosis of craniopharyngioma, Rathke’s cyst. Surgery performed in order to remove the tumor. The pathological report confirmed the tumor as epidermoid cyst. He did well through hospital stay. DI and along with pathological report confirmed the tumor as epidermoid cyst. He did well through hospital stay. DI and along with pathological report confirmed the tumor as epidermoid cyst.

Thyroid

HPT-AXIS AND THYROID HORMONE ACTION

Thyroid Radiofrequency Ablation: A New Office Based Procedure for Endocrinologists

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SAT-LB77

Recent FDA approval of thyroid RF has made it possible for endocrinologists in the USA to finally treat their own patients after obtaining training. I have 5 years experience working with these systems and have trained many endocrinologists in my practice. In 2019 I began a preliminary study of 12 patients with negative biopsies to see the feasibility of doing thyroid RF in my ultrasound room in my office without going to imaging centers or the hospital. The fee for office based RF is 3-6 times less expensive. RF system by RF Medical Korea was used in all cases. The results are promising. Skin and thyroid capsule local injection was all that was needed for pain control. Vital signs were monitored by my roving nurse. The maximal watts used was 20-40. There were no major complications and only one bruise in the neck area. No vocal symptoms. All 12 tolerated the procedure and after 30 minutes observation left with only a small band aid over the injection site. Two flew out of state that night. Conclusion: A preliminary assessment of in office thyroid RF without general of conscience sedation by trained endocrinologists suggests larger study with 80-100 cases is the next step.

Thyroid

THYROID CANCER CASE REPORTS I

Incidental Anaplastic Thyroid Carcinoma: An Uncommon Entity

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SUN-LB77

Incidental Anaplastic Thyroid Carcinoma: An Uncommon Entity

Background:

Anaplastic thyroid cancer is an aggressive thyroid malignancy with a median survival of 3 to 9 months. It is rare and represents 2-5% of all thyroid tumors. Even more uncommonly in about 2%-6% of all ATC cases, it is identified as a small, incidental finding after surgical resection of a predominantly non-anaplastic tumor.

Clinical Case:

We report a case of 67 year old Caucasian male who presented with history of hoarseness of voice for one month. Fine needle aspiration biopsy of right dominant thyroid nodule revealed papillary thyroid cancer. Pre-operative imaging was negative for involvement of surrounding structures or distant metastasis. He underwent total thyroidectomy and final pathology revealed Anaplastic carcinoma arising in papillary carcinoma measuring 3.6cm in greatest dimension. Undifferentiated (Anaplastic) Carcinoma comprised approximately 5% of the tumor. Areas from anaplastic and papillary tumor were dissected