

warfarin to rivaroxaban for anticoagulation, who presented to the ED after a syncopal episode following a prior episode of abdominal pain with an unremarkable work-up. He subsequently developed severe fatigue, dizziness, headaches, nausea and 15 lbs weight loss. On presentation, the patient was hypotensive (72/45 mmHg) and tachycardic. Intravenous hydration was started with minimal response. Initial laboratory testing showed serum sodium of 121mmol/L, potassium of 5.5mmol/L and random cortisol of 0.8mcg/dL. The patient was admitted to the intensive care unit where he was started on vasopressors and hydrocortisone 50 mg IV every 8 hours. A non-contrast CT of the abdomen and pelvis showed thickening of the adrenal glands with decreased attenuation. MRI of the abdomen showed hyper-intensity of the adrenal glands bilaterally (T1 images), without post-contrast enhancement suggestive of bilateral adrenal hemorrhage. His electrolytes normalized, and he was successfully discharged home on hydrocortisone and fludrocortisone replacement with outpatient follow-up.

Discussion: Atraumatic bilateral adrenal hemorrhage is rare, but remains one of the most common endocrine-related complications of antiphospholipid syndrome (APLS). The venous anatomical configuration of the adrenal gland increases risk of thrombotic hemorrhagic infarction^[1]. Patients with APLS are commonly anticoagulated to prevent thrombosis. The ideal anticoagulation regimen remains controversial. Only three other cases of spontaneous bilateral adrenal hemorrhage on patients with APLS using new oral anticoagulants (NOACs) were reported. The use of NOACs seem to increase the already-elevated risk of adrenal hemorrhage seen in patients with APLS.

References:

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2. Cervera R, Piette JC, Font J, Khamashta MA, Shoenfeld Y, Camps MT, et al. Antiphospholipid syndrome: Clinical and immunologic manifestations and patterns of disease expression in a cohort of 1,000 patients. *Arthritis Rheum.* 2002;46:1019-27.

Thyroid

THYROID NEOPLASIA AND CANCER

Impact of Nodule Size on the Probability of Hurthle Cell Carcinoma and Other Cancers in Thyroid Nodules with Multiple Chromosomal Copy Number Alterations

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Fine-needle aspiration (FNA) of thyroid nodules yields indeterminate cytological diagnosis in ~20% of cases, confounding patient management. This includes Hurthle cell nodules, which typically yield Bethesda IV and III cytology. Chromosomal copy number alterations (CNA) are known to occur in thyroid tumors, particularly in Hurthle cell carcinomas (HCC) as well as in other

typically follicular-patterned tumors including papillary thyroid carcinomas (PTC) and poorly differentiated thyroid carcinomas (PDTC). The aim of this study was to evaluate thyroid nodules tested positive for CNA but negative for all other genomic alterations using ThyroSeq v3 NGS assay in order to establish the probability of cancer in these nodules and find whether it is influenced by the pattern of CNA and nodule size. We evaluated 111 nodules with multiple CNA detected by ThyroSeq in FNA samples and available surgical pathology outcome. Of those, 69 (62%) nodules showed CNA changes consistent with genome near-haploidization (GNH) whereas 42 (38%) nodules had multiple chromosomal losses and gains (CLG). Nodule size ranged from 0.5-10.2 cm; cytology was Bethesda III in 54%, Bethesda IV in 43%, and Bethesda V-VI in 3% of cases, with Hurthle cells mentioned in the cytology report in 64% of cases. On surgical pathology, 38 (34%) of these nodules were malignant (including 24 HCC, 8 PTC, and 5 oncocytic PDTC) and 73 (66%) were benign (including 43 Hurthle cell and 18 follicular adenomas). No significant difference was observed in probability of malignancy between the two patterns of CNA ($p=0.41$). However, a significant correlation between the nodule size and probability of cancer was found ($p=0.006$). In specific CNA groups, correlation between cancer and nodule size remained significant for nodules with GNH pattern ($P=0.0002$), but not with CLG pattern ($p=0.449$). Specifically, cancer probability in nodules with GNH pattern and <2 cm in size was 14% (all cancers minimally-invasive), 2.0-2.9 cm was 33%, 3.0-3.9 cm was 50%, 4-4.9 cm was 67%, and ≥ 5 cm was 80%. Among high-risk cancers (widely-invasive or angioinvasive HCC, PDTC), all 10 tumors had the GNH pattern ($p=0.01$) and average nodule size of 4.9 cm (range, 2.1-8.5 cm). These findings suggest that CNA of both types are frequently found in Hurthle cell tumors, and probability of cancer in nodules with CNA and no other mutations increases with larger nodule size. This may help to refine the pre-operative assessment of cancer probability and risk of more aggressive disease and offer more tailored management to these patients.

Reproductive Endocrinology

CLINICAL STUDIES IN FEMALE REPRODUCTION I

Fluoxetine Administration Influences Serotonin-Driven Bone Remodeling During Lactation and Pregnancy Outcome in Mice

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SAT-020

Selective serotonin reuptake inhibitors (SSRI) are the most commonly prescribed class of antidepressants during pregnancy and lactation. SSRI decrease bone mineral density (BMD) across all ages and sexes. Lactation is also characterized by increased bone resorption to mobilize calcium due to the demands of lactation and achieves this via a serotonin-induced hormonal cascade. This serotonin-mediated bone loss is normally restored after weaning but is persistent when an SSRI is administered during