A 46-year-old Guyanese woman presented with a three-week history of an enlarging right-sided neck mass. The patient to undergo a colonoscopy which was negative for carcinoma cells on cytopathology. While completion thyroidectomy may not be mandatory in this group. It is, therefore, critical to identify these patients and screen them with a colonoscopy to avoid the potentially unnecessary resection of the contralateral lobe and the consequent need for thyroid hormone replacement.

Discussion: PTC-CMV accounts for 0.2% of all PTC. It is associated with FAP in more than 50% of cases but can also occur sporadically. This subtype of PTC generally follows a less aggressive course. Review of current literature revealed several case series of CMV-PTC patients. In the largest one, 32 cases were observed over a 19-year period and only two out of twelve patients with FAP-associated PTC-CMV initially treated with hemithyroidectomy developed recurrence to the contralateral lobe. Interestingly, none of the remaining patients with the sporadic type developed recurrence suggesting that completion thyroidectomy may not be mandatory in this group. It is, therefore, critical to identify these patients and screen them with a colonoscopy to avoid the potentially unnecessary resection of the contralateral lobe and the consequent need for thyroid hormone replacement.

Adrenal

ADRENAL CASE REPORTS I

Adrenal Myelolipoma in a Patient with Sickle Cell Disease

Maria Inês Alexandre, Intern1, Ana Coelho Gomes, MD2, Diogo Cruz, MD2, Maria João Bugalho, MD, PHD1.

Endocrinology, Diabetes and Metabolism Department, Hospital de Santa Maria, CHULN, Lisbon, Portugal, 1Internal Medicine Department, Hospital de Santa Maria, CHULN, Lisbon, Portugal.

SAT-201

Background: Adrenal myelolipoma is a rare benign tumor of the adrenal gland, consisting of adipose tissue and hematopoietic elements. It has been reported to be associated with many chronic diseases such as hematological disorders. The majority of the adrenal myelolipomas are diagnosed in the fourth-sixth decades of life, usually as incidental findings. Despite its benign behavior, it may cause difficulties in the differential diagnosis.

Clinical Case: A 33-year-old woman was found to have a right adrenal incidentaloma in a kidney ultrasonography, during work-up for suspected kidney pathology ultimately not confirmed. Her past medical history was significant for sickle cell disease. There was no history of hypertension nor personal or family history of endocrine diseases. The physical examination was unremarkable.

The ultrasonography revealed a mass above the right kidney, measuring 5.5 cm in diameter, markedly heterogeneous and hypoechoic in the center. On CT imaging, one month later, this mass measured 6.2 x 4.3 cm. The absolute contrast washout of 52% was indeterminate for adrenal adenoma. The MRI, twelve months later, showed a well-demarcated and heterogeneous tumor with 8 x 4.7 x 4 cm, with fat areas, suggesting adrenal myelolipoma, but not excluding the possibility of a malignant lesion, such as liposarcoma. The mass was in contact with the liver although not invading it nor the kidney or inferior vena cava. There was no evidence of metastatic disease. Basal biochemical work-up did not disclose hormonal hypersecretion. The ACTH level was 19.6 pg/ml (N7.2-63.3); free urinary cortisol (24 hours) was 101 µg/24h (N36-137) and the overnight 1 mg dexamethasone suppression test was also normal (0.5 µg/dL). Serum metanephrines were within the normal range: metanephrine 7.8 pg/mL (N <65) and...
normetanephrine 52.3 pg/mL (N<196). Her remaining laboratory values were within normal values including potassium and sodium values. Due to the size, rate of growth and atypical features of the mass, right laparoscopic adrenalectomy was performed. The resected adrenal weighed 66.6g and within it there was an intraparenchymal nodule, measuring 7.5 x 3 x 3.5 cm, which on histologic examination proved to be an adrenal myelolipoma.

**Conclusion:** Adrenal myelolipomas are usually clinically silent. However, their incidental diagnosis should warrant careful diagnostic study. Although the pathogenesis of these tumors remains unclear, theories include retention of embryonic rests, adrenocortical metaplasia and extramedullary hematopoiesis. In this patient with sickle cell disease, bone marrow elements within the myelolipoma may have grown as a result of the persistent anemia. Particular to this case is the patient’s young age, since most cases reported have occurred during the fourth-sixth decades of life. In addition, the association with sickle cell anemia has only been reported in a few cases.

**Diabetes Mellitus and Glucose Metabolism**

**METABOLIC INTERACTIONS IN DIABETES**

**Elevated Osmolal Gap in Long-Term Complication of Type 2 Diabetes**

Monika Klimek, MD, Beata Wojtyśiak-Duma, PhD, Dariusz Duma, PhD, Janusz Solski, Prof.

MEDICAL UNIVERSITY OF LUBLIN, Lublin, Poland.

**SUN-668**

Osmolal gap (OG) is the difference between the measured osmolality and calculated osmolality estimated by using the mathematical equation. Elevated OG indicates the presence of osmotically active particles undetected in the plasma of healthy individuals. Elevated OG has been observed in multiorgan trauma as a useful prognostic factor of patient survival [1, 2]. We hypothesized that elevated OG may occur in patients with type 2 diabetes (T2D) and may become a useful indicator of unmeasured endotoxins. One of the major mechanisms of this phenomenon may be non-enzymatic glycation of proteins in hyperglycemia, in which the osmotic active carbonyl compounds such as glyoxal, methylglyoxal, and 3-deoxyglucosone, are formed. Testing was performed for participants with T2D, aged 18 to 85. The osmolality measurement was performed with venous blood using the osmometer. The concentration of individual osmols (sodium, potassium, glucose, urea) was determined and on this basis, osmolality was calculated using the Dorwart-Chalmers formula: osmolality (mOsm/kg H2O) = 1.86 x [Na+] + glucose + urea + 9 (Dorwart, 1975). The clinical profile of patients was established based on history and physical examination (age, sex, age, duration of T2D, complications of T2D, HbA1c, LDL-cholesterol, triglyceride, BMI, coexisting diseases, medication). Data were analyzed using descriptive statistics. This study is currently ongoing, but preliminary data from the pilot study suggest an increased mean measured osmolality as well as elevated OG in patients with T2D compared to the reference values for healthy adults. These values differed depending on the type of long-term complications and the duration of the disease. In the pilot study, the highest OG was reported in diabetic retinopathy. A follow-up study with a larger sample may have a better ability to detect the statistical significance of the association of OG and complications of T2D. The association of the osmolar gap and complication of type 2 diabetes is poorly understood, and further investigation is warranted.

**References:**

[1] Inaba, H., Hirasawa, H., Mizuguchi, T. (1987), Serum Osmolality Gap In Postoperative Patients In Intensive Care. Lancet, 329 (8546): 1331-1335.

[2] Hirasawa, H., Odaka, M., Sugai, T., Ohtake, Y., Inaba, H., Tabata, Y., Kobayashi, H. and Isono, K. (1988), Prognostic Value of Serum Osmolality Gap In Patients with Multiple Organ Failure Treated with Hemopurification. Artificial Organs, 12: 382-387.

**Reproductive Endocrinology**

**BASIC MECHANISMS IN REPRODUCTION: FROM BEGINNING TO END**

**Maternal Adiponectin Prevents Against Metabolic Dysfunction in Prenatally Androgenized PCOS-Like Mice**

Anna Benrick, PhD1, Yanling Wu, PhD2, Elisabet Stener-Victorin, PhD2, Ingrid Wernstedt Asterholm, PhD2.

1University of Gothenburg and University of Skovde, Gothenburg, Sweden, 2University of Gothenburg, Inst. Neuroscience and Physiology, Gothenburg, Sweden, 3Karolinska Institutet, Stockholm, Sweden.

**OR20-02**

More than 10% of women worldwide are diagnosed with polycystic ovary syndrome (PCOS), causing reproductive and metabolic disease. Hyperandrogenism is the main characteristic and elevated levels of androgens during pregnancy affect placenta function and fetal programming, which leads to reproductive and metabolic dysfunction in the offspring. Adiponectin secreted from adipose tissue improves whole-body metabolism, but its role during pregnancy is under explored. Adiponectin affects placental nutrient transport during pregnancy allowing for speculation that adiponectin can exert endocrine effects on the developing fetus. This study aims to investigate if, in prenatally androgenized (PNA) mice, adiponectin can prevent metabolic and reproductive dysfunction in female offspring. Adiponectin transgenic (APNtg) and wildtype (wt) female mice were mated with wt males, and received dihydrotestosterone or vehicle injections between gestational days 16.5-18.5 to induce a PCOS-like phenotype. The anogenital distance, a marker of in utero androgen exposure, was measured at 22 days of age, estrus cyclicity was recorded at 6 weeks of age, and metabolic measures were performed at 4 months of age.

APNtg dams gave birth to significantly smaller offspring, independent of genotype, than wt dams. PNA increased f-insulin in all groups but insulin sensitivity was higher in wt mice from APNtg dams compared to wt mice from wt dams. Insulin resistance correlated with subcutaneous and visceral fat mass. PNA increased visceral fat % and adipocyte size in wt offspring from wt dams while wt and