MON-200

Objective: Aldosterone- and cortisol-producing adrenal tumors (A/CPTs) are considered to be a subtype of primary aldosteronism (PA). The clinical characterizations of these tumors are still unclear, and they are often neglected by clinicians. The aim of this study was to summarize the clinical characterizations of these tumors to reduce the missed diagnosis.

Methods: The clinical, imaging and pathological data of patients with PA admitted to our hospital from January 1, 2013 to December 31, 2016 was reviewed. All the PA patients with a combination of a positive aldosterone-to-renin ratio (ARR) and a positive captopril challenge test (CCT), in whom the dexamethasone inhibition test was performed as well, were included in our study. These patients were divided into two groups, A/CPTs group and simple PA group, according to the function of cortisol secretion. The data of the two groups were compared and analyzed with SPSS 23.0. $P<0.05$ was statistically significant.

Results: There were 87 patients with PA included in our study, 32 of whom (36.8%) were diagnosed with A/CPTs. In these 32 A/CPTs patients, 31 patients (96.9%) were combined with subclinical Cushing syndrome. Compared to these in simple PA group (n=55), the patients in A/CPTs group (n=32) were elder (53.81±10.70 ys vs 48.42±10.17 ys, $P=0.022$), with larger diameter of adrenal tumors (1.50cm vs 1.15cm, $P=0.001$), higher fasting plasma glucose (5.33mmo/L vs 4.99mmol/L, $P=0.047$), higher serum cortisol levels and lower serum ACTH levels (all $P<0.05$). 24 patients in A/CPTs group and 23 patients in simple PA group underwent adrenalectomy. 6 patients (25.0%) in A/CPTs group and 3 patients (13.0%) in simple PA group received glucocorticoid replacement therapy after adrenalectomy.

Conclusions:The prevalence of A/CPTs in PA is high. The patients with A/CPTs are mainly combined with subclinical Cushing syndrome, and prone to need glucocorticoid replacement therapy. Therefore, we recommend that all patients with PA should evaluate the function of cortisol secretion, and all patients with A/CPTs should be followed up closely after adrenalectomy to reduce the morbidity of adrenal insufficiency.

Thyroid

THYROID DISORDERS CASE REPORTS III

Hypoechoic Nodule Is Not Always the Bad Guy: Lessons Learned from a Patient with Subacute Painful Thyroiditis

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MON-468

Introduction: The diagnosis of subacute painful thyroiditis (SAT) is primarily based on clinical manifestations (thyroid tenderness and diffuse goiter). Suppressed TSH, elevated erythrocyte sedimentation rate (ESR) and low thyroid uptake help confirm the diagnosis. Thyroid ultrasonography and fine-needle aspiration biopsy (FNAB) are rarely necessitated. SAT produces a typical sonographic findings of ill-defined heterogeneously hypoechoic areas, which is difficult to differentiate from thyroid carcinoma. We herein report a patient with SAT who was initially diagnosed as malignancy. **Case Presentation:** A 36-year-old female had pain and swelling at the left thyroid gland for 3 weeks. A left thyroid nodule was diagnosed by her primary care physician. Ultrasonography revealed a poorly defined hypoechoic nodule measuring 2.5x1.1x1.5 cm at the mid pole of the left thyroid gland, for which biopsy was recommended. The nodule showed peripheral vascularity and no calcification. No suspicious cervical lymphadenopathy was detected. Histologic analysis from core biopsy found findings consistency with follicular neoplasm. Thyroid function tests were within normal range. She was treated with ibuprofen as management of thyroid pain and referred for surgery. However, the repeated ultrasonography was performed by endocrinologist in the next 2 weeks and found an interval reduction in size of hypoechoic lesion. FNAB was performed due to the risk of infiltrative malignancies. Cytologic analysis was compatible with SAT. ESR was slightly elevated. Surgery was cancelled and she was treated with ibuprofen. Two weeks later, she reported that the left thyroid pain and swelling had subsided. However, she developed thyroid pain associated with glandular tenderness and swelling of the right thyroid. On sonographic examination, the right lobe, which was previously normal was now similarly affected. Thyroid function showed thyrotoxicosis. The patient was given a further course of beta-blocker, ibuprofen and prednisolone for 2 weeks and recovered well. On follow-up at 2 months, the patient developed biochemical hypothyroidism and received levothyroxine replacement. The lesions in the thyroid gland were not visualized in the 6-month follow-up sonography. **Conclusion:** The ultrasonographic features of the thyroid during the acute stage of SAT may mimic thyroid carcinoma. Awareness of the sonographic findings and interval changes of SAT lesions may helpful for proper diagnosis and treatment of SAT.

Diabetes Mellitus and Glucose Metabolism

CLINICAL AND TRANSLATIONAL STUDIES IN DIABETES

Chronic Unpredictable Environmental Stress May Induce Predisposition to Diabetes Mellitus

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MON-648

Title: Chronic Unpredictable Environmental Stress may induce predisposition to diabetes mellitus **Objective**: Chronic unpredictable environmental stress (CUES) may induce predisposition to diabetes mellitus. **Material & Methods**: This study investigates the role of CUES on impaired homeostasis. Stressed group mice (n=20) were exposed to CUES for 16 weeks. Weekly body weight, feed consumption, feed efficiency ratio, fasting blood glucose were monitored. Plasma HbA1c, plasma cortisol, plasma epinephrine and plasma insulin, serum lipids, antioxidants and carbohydrate metabolizing enzymes activity were assessed along with DNA damage and histopathological examination of liver, kidney, pancreas, spleen and skeletal muscles. Semi-quantitative expression of IL-4, IL-6 and β- actin was also assessed. **Results**: Fasting blood

glucose levels & HbA1c in the stressed were significantly higher compared to control (p<0.001). Serum lipids were found insignificantly higher in stressed mice compared to control. Body weights of the stressed mice and feed efficiency ratio were found significant (p<0.001). Plasma corticosterone, plasma epinephrine, HOMA-IR was found to be significantly higher in the stressed group (p<0.001). Plasma insulin level was found to be significantly lower in the stressed group (p< 0.001). Significant changes were observed in antioxidants level, carbohydrate metabolizing enzymes activity, peripheral tissues and DNA integrity. Expression of IL-4, IL-6 was found significantly higher in the stressed group. **Conclusions**: CUES initiates pathogenesis of diabetes.

Neuroendocrinology and Pituitary

CASE REPORTS IN UNUSUAL PATHOLOGIES IN THE PITUITARY

A Rare Case of Atypical Rhaboid Teratoid Tumour with Germinoma Differentiation in a 59 Year Old Woman

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SUN-279

Atypical teratoid/rhabdoid tumours (ATRT) are a rare class of central nervous system malignant tumours which are comprised of elements of ectoderm and mesoderm germ-cell layers, but exhibit microscopic similarity to skeletal muscle. These tumours are more commonly seen in pediatric patients, with few case reports recently describing adult patients with this condition, in particular middle-aged women.[1–3] We present the case of a previously healthy 59-year-old woman who was found incidentally to have a pituitary mass on CT head, with retrospective symptoms of headaches, polyuria, polydipsia, diplopia, and low blood pressure. At presentation, she was found biochemically to have pan-hypopituitarism with a left cranial nerve six deficit, with an MRI depicting a 19.5 x 22 x 11 mm suprasellar mass extending into the infundibulum and hypothalamus, with displacement of the optic chiasm; repeat imaging ruled out apoplexy. She was started on supplemental levothyroxine and hydrocortisone replacement therapy, and sent for urgent transsphenoidal resection, which was complicated afterwards by hypernatremia from diabetes insipidus. Preliminary reports were suggestive of germinoma given the diffuse presence of Oct 3/4 and C-kit, with a proliferation index of 99%; further cytology of lumbar puncture revealed no malignant cells. However, upon further pathological analysis, her tumour demonstrated loss of INI-1 expression, which is diagnostic of ATRT. Given the mixed features on immunohistochemistry, the final diagnosis was concluded as an atypical teratoid/rhabdoid tumour of the sella turcica with germinoma differentiation. A multidisciplinary approach consisted of initial radiotherapy, with chemotherapy targeted towards a germinoma-type tumour, and pituitary hormone replacement including treatment for central diabetes insipidus. This represents a unique case of a rare tumour with germinoma differentiation in an older patient that has not been previously reported.

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Reproductive Endocrinology

FEMALE REPRODUCTION: BASIC MECHANISMS

Dynamics of the Transcriptome in Rat Granulosa Cells Exposed to Different Follicle-Stimulating Hormone (FSH) Glycosylation Variants as Revealed by RNA-Seq/New Generation Sequencing (NGS).

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MON-023

Follicle-stimulating hormone exists as different major glycoforms defined by distinct glycosylation patterns of the hormone-specific β-subunit. It has been documented that variations in glycosylation confer differential biological effects to the glycoforms when multiple *in vitro* biochemical readings are analyzed. We here applied Next Generation Sequencing (NGS) to explore changes in the transcriptome of rat granulosa cells exposed for 0, 6, and 12 h to 100 ng/ml of four highly purified FSH glycoforms, each exhibiting distinctly different glycosylation patterns: human pituitary FSH^{21} and equine FSH (*e*FSH) (hypoglycosylated), and human FSH^{24} and CHO cell-derived human recombinant FSH (*rec*FSH) (fully-glycosylated). Total RNA from triplicate incubations was prepared from FSH glycoform-exposed cultured granulosa cells obtained from DES-pretreated immature female rats, and total RNA libraries were sequenced in a HighSeq 2500 sequencer (2 x 125 bp paired-end format, 10–15 x 10^6 reads/sample). The computational workflow was focused on investigating differences among the four FSH glycoforms at three levels: gene expression (Salmon and DESeq2 bioinformatic tools), enriched biological processes (DAVID tool), and perturbed pathways (GAGE tool). Among the top 200 differentially expressed genes, only 4 (0.6%) were shared by all 4 glycoforms at 6 h, whereas 118 genes (40%) were shared at 12 h. At 6 h, up-regulated genes in *rec*FSH were associated with cell response, angiogenesis, extracellular matrix organization, and mitosis; *e*FSH with sex hormones (shared with FSH^{21}); FSH^{21} with cellular response and response to drugs (shared with *rec*FSH); and FSH^{24} with cAMP-related processes. There were more shared biological processes at