Conclusion
60 minute cortisol correctly identified all normal and abnormal results. Relying only on 30 min value resulted in significant false positive results.
Morning basal cortisol over 226 nmol/L should be considered reliable threshold for adequate adrenal function particularly when clinicians have low pretest probability for hypoadrenalism.

Neuroendocrinology and Pituitary

CASE REPORTS IN CLASSICAL AND UNUSUAL CAUSES OF HYPOPITUITARISM

Lymphocytic Hypophysitis Mimicking Pituitary Apoplexy in a 27-Year-Old Woman

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SAT-243
Introduction:
Lymphocytic hypophysitis is an uncommon inflammatory disorder of the pituitary gland. Peripartum women are most often affected, but it can be seen in a wide range of patients. Patients can present with pituitary dysfunction or mass effect symptoms, making it difficult to differentiate from a pituitary adenoma. Pituitary apoplexy is an acute syndrome due to hemorrhage into the pituitary gland causing headache, visual deficits, and hypoadrenalism. We present a case of a woman with a pituitary mass presenting with symptoms mimicking pituitary apoplexy, in whom surgical pathology later revealed lymphocytic hypophysitis without evidence of hemorrhage.
Clinical Case:
A 27-year-old non-pregnant female presented with severe headaches, nausea, vomiting, and diplopia for four days. A presumed pituitary macroadenoma was diagnosed two years previously during a workup for irregular menses. An emergency evaluation with a CT angiogram of the head showed enhancement at the superior aspect of and surrounding the pituitary gland. MRI of the pituitary revealed an enhancing 17 x 17 mm sellar and suprasellar mass compressing the optic chiasm, without evidence of the normal pituitary posterior bright spot. Visual field testing was normal. She was referred for transsphenoidal resection of the pituitary mass due to persistent headaches, optic chiasm impingement, and suspicion of pituitary apoplexy. Intraoperatively, there was no evidence of hemorrhage. Central diabetes insipidus and hypothyroidism developed in the post-operative period. She was discharged on hydrocortisone replacement therapy (20 mg in the morning, 10 mg in the afternoon). An outpatient random cortisol level of 1.2 mcg/dL (reference: 6.7 - 22.6 mcg/dL) while off hydrocortisone for twenty-four hours confirmed hypocortisolism. Surgical pathology showed moderate lymphocytic infiltrate and focal germinal centers in the adenohypophysis consistent with lymphocytic hypophysitis.
Conclusion:
Although lymphocytic hypophysitis is well-described in the literature, its association with symptoms suggesting pituitary apoplexy has been reported only rarely. This atypical case shows that lymphocytic hypophysitis can present with acute symptoms mimicking pituitary apoplexy. The case highlights the difficulties in recognizing lymphocytic hypophysitis prior to surgery and emphasizes the need to consider the diagnosis in patients presenting with pituitary masses and/or symptoms of pituitary apoplexy.

Diabetes Mellitus and Glucose Metabolism

GESTATIONAL DIABETES, DIABETES IN PREGNANCY, AND IN UTERO EXPOSURES

Potential Contributions of Gut Microbiota-Liver Axis to the Transgenerational Metabolic Reprogramming of Maternal Exercise

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SUN-643
Background: Early-life overnutrition programs increased risks of metabolic disorders in adulthood. Regular exercise is widely accepted to be an effective measure to maintain metabolic health. However, the transgenerational effects of maternal exercise and the specific mechanism are largely unclear. **Aims:** Our objective was to investigate whether maternal exercise could alleviate the metabolic disturbances induced by early-life overnutrition in both dams and offspring and to explore the role of gut microbiota-liver axis in mediating the transgenerational metabolic reprogramming. **Methods:** C57BL/6 females were randomly divided into three groups 3 weeks before mating and during pregnancy: the control group, high-fat group, and high-fat with exercise group (voluntary wheel running training). They received their original diets during lactation. The male offspring had ad libitum access to chow diet from weaning to 24 weeks of age. Glucose tolerance test and serum biochemical parameters were detected. The cecal contents from dams at weaning and 8-week and 24 week of offspring were collected for 16s rDNA sequencing. Hepatic HE staining and transcriptome were performed in adult offspring. **Results:** The results showed that perinatal high-fat diet resulted in significant glucose intolerance, insulin resistance and lipid profiles disorders in both dams and offspring. Maternal exercise markedly improved insulin sensitivity in dams and metabolic disorders in offspring from young into adulthood, especially the hepatic steatosis. The decrease in harmful bacteria and the persistent enrichment of short chain fatty acid producers from mothers to adult offspring, particularly the genus *Odoribacter*, were all associated with improvement in metabolism by maternal exercise. In addition, maternal exercise significant upregulated FGF21 and genes involved in the fatty acid oxidation and TCA cycle in adult offspring, which were down-regulated by perinatal high-fat diet and were significantly correlated with the altered microbial species. **Conclusion:** Overall, maternal exercise could significantly mitigate the detrimental effects of perinatal high-fat diet on metabolism in both dams and male offspring. The continuous alterations in gut microbiota and reprogramming hepatic metabolism might be critical factors in deciphering

the transgenerational metabolic benefits of maternal exercise, which provides some novel evidence and targets for combating the metabolic diseases.

Reproductive Endocrinology

SEX DETERMINATION AND REPRODUCTIVE AXIS DEVELOPMENT

Social and Psychological Aspects of Partial Androgen Insensitivity Syndrome, Therapeutic Challenges.

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SUN-038

Social and Psychological Aspects of partial Androgen Insensitivity Syndrome, Therapeutic Challenges

Background: Partial Androgen Insensitivity Syndrome (PAIS) is a rare congenital condition with incongruence of chromosomal, gonadal and phenotypic sex and classified as differences of sex development. Distinct from complete Androgen Insensitivity by the presence of ambiguous genitals in a 46, XY individual with normal testis development and partial responsiveness to androgens.

Clinical Case: 18 years phenotypic female presented with primary amenorrhea and ambiguous genitalia with poor secondary sexual characteristics after puberty. Born out of a consanguineous marriage, normal vaginal delivery conducted by midwife at home in a small village, who informed a female with ambiguous genital though. Since childhood she uses to dress up in female attire. She has 5 siblings, two brothers and three sisters, one year back she got engaged to her distant cousin and was about to get married when one of her younger sister now 8 years having similar problem alarmed family to report before the wedlock.Vitals:Weight 55kg,Height 167cm,Physical, biochemical, chromosomal testing and imaging revealed:micropenis 3cm(N=8cm) with hypospadias, a small blind vaginal orifice, hormones within normal male ranges, Karyotype: XY, MRI revealed no female internal organs or prostate gland, left testis seen in partly formed scrotal sac (4.6x2.5cm) right in superficial inguinal region (2.7x1.9cm),normal testes size(4x3cm), bilateral cavernous tissue,respectively. Findings suggested phenotypic female with PAIS. Further investigations could not be carried out due to poor affordability and non-availability of Genetic testing facility. Management: Male gender was preferred (after discussion with urologist and consent of the patient and the family) Assigning the gender, health-related quality of life (QoL), social and psychological well-being, and affective disorders, like fertility and sexual functions in PAIS were discussed. Psychometric data was obtained through psychological questionnaires: Beck Depression Inventory & Hospital Anxiety and Depression Scale revealed moderate depression. An important pre-decision analysis regarding the potential impact of clinical decisions such as the type and timing of genital surgeries on patient's life is missing due to absence of a multidisciplinary team for counseling and decision making.

Conclusion: After spending 18.yrs as a phenotypic female the patient and her family experienced considerable emotional distress. In our culture and society these types of cases are seldom reported. We as medical professionals need to be sensitive to the social and psychological wellbeing of patients so that they can be settled and acceptable in their part of the world.

Tumor Biology

TUMOR BIOLOGY: GENERAL, TUMORIGENESIS, PROGRESSION, AND METASTASIS

Determining the Undetermined: The Role of Tumor Tissue Staining for Interpretation of Inconclusive Genetic Testing Results in Patients with Pheochromocytomas and Paragangliomas.

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SAT-140

Background:

Paragangliomas and pheochromocytomas are neuroendocrine tumors that can occur in several hereditary tumor syndromes. While these are generally rare, individuals with germline loss of function mutations in the succinate dehydrogenase (SDH) genes are at high risk of developing these tumours, with a penetrance of 70% by age 50. Functional SDHB acts as a tumor suppressor. Consequently, pathogenic mutations in the *SDHB* gene predispose to familial paraganglioma syndrome type 4, with high incidence of extra adrenal paragangliomas and high rates of metastasis. *SDHB* mutation carriers are also predisposed to developing tumors in other sites such as renal cell cancer, gastrointestinal stromal tumors and pituitary adenomas. Genetic testing for hereditary syndromes is recommended in patients who present with paragangliomas and pheochromocytomas, especially in those with aggressive tumours or who present at a young age. It is recommended that mutation carriers are monitored with routine clinical and imaging surveillance, and effort is made to identify and screen at-risk family members. In some cases, genetic testing can identify variants that are not clearly pathogenic or benign. In such "variants of undetermined significance", immunohistochemistry or family history can be a helpful tool in discriminating between SDHB related and non-SDH-related pheochromocytomas and paragangliomas.

Clinical case:

We report on three families who presented with manifestations of paraganglioma syndrome and were found to have Variants of Uncertain Significance (VUSs) in the SDHB gene. Absence of SDHB staining was seen on tumour histopathology in two of the families; staining was not performed in the third. The proband in the third case initially presented at the age of 22 with a cardiac pheochromocytoma. Subsequently, her son was diagnosed with metastatic renal cancer at the age of 37. Genetic test results from both these patients identified a heterozygous VUS in SDHB. The son passed away from complications of his aggressive cancer shortly after diagnosis. Had familial screening and surveillance been initiated sooner in this family, this poor outcome may have been prevented.

Conclusion:

Our case highlights the important diagnostic dilemma that can arise in patients with VUSs in risk genes for hereditary pheochromocytomas and paragangliomas. While