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DIAGNOSTIC DILEMMA IN INTERPRETING INFERIOR PETROSAL SINUS SAMPLING IN SUSPECTED CYCLICAL CUSHING'S DISEASE IN AN ADOLESCENT

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INTRODUCTION
Cushing's disease in adolescents is rare and frequently difficult to diagnose due to overlapping features with common pubertal and metabolic conditions. We present an adolescent who underwent inferior petrosal sinus sampling (IPSS) with possible cyclical Cushing's disease, highlighting the diagnostic challenges and the interpretive value of IPSS.

CASE
A 16-year-old female presented with progressive weight gain, acne, hirsutism, secondary amenorrhea, proximal myopathy, violaceous striae, and facial plethora over 1 year. Her 24-hour urinary cortisol was >3,310 nmol/L with failure of suppression following a 1-mg overnight dexamethasone suppression test (701 nmol/L). Her adrenocorticotropic hormone (ACTH) was raised (77.9 pg/mL), consistent with ACTH-dependent Cushing syndrome. Her hemoglobin A1c was 5.9%, and she has low bone mass for age with a Z score of -2.9 at the Lumbar spine.

Pituitary magnetic resonance imaging identified a right-sided microadenoma measuring 0.6 × 0.5 cm, while computed tomography of the thorax, abdomen, and pelvis showed no ectopic source. IPSS with desmopressin stimulation was performed to confirm the ACTH source. No steroidogenesis inhibitors were administered prior to testing. Notably, cortisol levels during IPSS were relatively low, with midnight cortisol of 91 nmol/L and morning cortisol of 200 nmol/L, suggesting testing during a trough phase of possible cyclical hypercortisolism. Despite this, IPSS demonstrated a significant central-to-peripheral ACTH gradient supporting a pituitary source.

CONCLUSION
This case highlights the diagnostic dilemma of interpreting IPSS in suspected cyclical Cushing's disease. Fluctuating cortisol secretion may result in discordant biochemical findings and complicate localization studies. IPSS findings should be interpreted cautiously and integrated with clinical features, imaging, and serial biochemical monitoring. Recognition of cyclical disease patterns is essential to ensure appropriate management in adolescent patients.

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WHEN IGF-1 MISLEADS: DISCORDANT BIOCHEMICAL FINDINGS IN ACROMEGALY

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INTRODUCTION
Acromegaly is an endocrine disorder caused by excess growth hormone (GH), causing somatic overgrowth, multiple comorbidities, and premature mortality. It is confirmed biochemically by an elevated GH level, which is not suppressed post oral glucose tolerance test (OGTT). The serum level of insulin-like growth factor-1 (IGF-1) is recommended for diagnosis, monitoring, and screening, and a normal level effectively excludes the disease. We report a patient with acromegaly who presented with normal IGF-1.

CASE
A 21-year-old female, with no known medical illness, presented with a persistent, progressive headache and amenorrhea for the past 6 months. She also noticed a change in facial appearance and an increase in the size of her hands and feet. Blood parameters revealed raised GH level of >50 ng/mL, normal IGF-1 30.3 nmol/L (12.17–44.80), mildly raised prolactin 692 mIU/L, low am cortisol 62 nmol/L (166–507), thyroid-stimulating hormone of 0.63 mIU/L (0.27–4.20), free thyroxine 4 11 pmol/L (12–22), low follicle-stimulating hormone 0.90 IU/L, luteinizing hormone <0.30 IU/L, estradiol <18.4 pmol/L, and fasting blood sugar of 17.7 mmol/L with hemoglobin A1c 9%. In view of normal IGF-1 with a high index of suspicion for acromegaly, she underwent OGTT which showed unsuppressed GH. Magnetic resonance imaging pituitary showed sellar mass 2.4 × 2.9 × 2.1 cm with suprasellar extension as well as extension into the right cavernous sinus, suggestive of pituitary macroadenoma. She was diagnosed with acromegaly with secondary adrenal insufficiency and central hypothyroidism with hypogonadotropic hypogonadism, complicated with poorly controlled diabetes. She was started on thyroxine and hydrocortisone replacement and required basal bolus insulin of 1.3 u/kg/day. Repeated IGF-1 showed a raised

value, 85.4 nmol/L, after optimization of diabetes. She underwent endoscopic transsphenoidal surgery with normalization of blood sugar post-surgery. Blood pressure was normal throughout.

CONCLUSION

False negative or normal IGF-1 levels may result in patients with hepatic or renal failure, hypothyroidism, malnutrition, use of oral estrogen, severe infection, and poorly controlled diabetes mellitus. Hence, a low or normal IGF-1 does not exclude acromegaly in patients with a high index of suspicion and warrants further investigation.

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BIG AND BLURRY: GIANT PROLACTINOMA CASE SERIES

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INTRODUCTION

Giant prolactinomas represent 2–3% of prolactin-secreting pituitary adenomas and show a male predominance. They present with mass effect symptoms and hypogonadism, but may be overlooked, leading to delayed diagnosis. Although dopamine agonists are first-line therapy, management remains challenging due to the large size and invasive behavior. This study aims to describe the clinical and radiological features, treatment modalities, and outcomes of three cases of giant prolactinomas. We retrospectively reviewed three men with giant prolactinomas, including their clinical, biochemical, and radiological features, along with treatment and outcomes.

CASES

Three male patients aged 35–59 years with giant prolactinomas were included. Two patients presented with visual disturbances, headache, and features of hypogonadism, while one patient had acute confusion and visual loss secondary to obstructive hydrocephalus requiring ventriculoperitoneal shunt insertion. Imaging in all cases demonstrated large invasive pituitary macroadenomas with extensive local extension. Baseline serum prolactin levels were markedly elevated, ranging from 86,568 to 441,116 uIU/mL (86–324 uIU/mL). All patients had secondary hypogonadism, while secondary hypothyroidism and hypocortisolism were each identified in two patients. One patient also had poorly controlled diabetes mellitus at presentation. Dopamine agonist therapy was initiated as the primary therapy for all the patients. Two patients developed cerebrospinal fluid leak following initiation of low-dose dopamine agonist therapy (one patient received cabergoline 0.25 mg weekly, while another received 0.5 mg weekly), which resolved spontaneously with conservative management. Serum prolactin levels decreased markedly, with significant improvement in symptoms related to mass effect following treatment.

CONCLUSION

Giant prolactinomas may present with significant mass effect and multiple pituitary hormone deficiencies. Dopamine agonists remain the cornerstone of management and can result in substantial biochemical and clinical improvement even in large invasive tumors. However, rapid tumor shrinkage may lead to complications such as cerebrospinal fluid leak, highlighting the importance of close monitoring during treatment initiation.

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BEYOND THE INFARCT: THE SILENT SELLAR SURPRISE

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INTRODUCTION

Pituitary apoplexy is a rare, life-threatening endocrine emergency caused by acute hemorrhage or infarction of the pituitary, often in the setting of a pre-existing adenoma (2–12%). While classically presenting with sudden headache, visual loss, and altered consciousness, it can occasionally mimic an acute stroke. Occurrence after coronary procedures is exceptionally rare, particularly when accompanied by cerebral infarction. We report a middle-aged male who developed an acute stroke following percutaneous coronary intervention (PCI) and subsequently had panhypopituitarism secondary to pituitary apoplexy.

CASE

A 50-year-old male, with underlying diabetes mellitus, hypertension, dyslipidemia, and chronic kidney disease stage G3A, initially admitted to a private centre for PCI, however, complicated with acute left-sided weakness, headache, and reduced consciousness 2 days post-procedure. He had a history of progressive left visual loss for 3 months. Examination revealed Glasgow Coma Scale E2V4M4, blood pressure 118/82 mmHg, left-sided power 4/5, and temporal pallor of the left optic disc. His blood sugar was 15.5 mmol/L.