12/28/23 Morning Report with @CPSolvers

*"One life, so many dreams" **Case Presenter**: Robert Weber (@) **Case Discussants**: Rabih Geha (@rabihmgeha) and Bettina Tenorio (@salfopsi)*

CC: Polyuria and polydipsia

HPI:
57 F with breast cancer presents to PCP with polyuria and polydipsia. Thirsty for several months; increased since 3 months - urinating hourly even during sleep. Also complains of blurry vision. Gained some weight, feels tired. Easy bruising and thinning of hair.
HbA1C 7 **(2 years ago)** → now: 12.4

PMH:
ER PR +ve breast CA (recently started chemo)
Type 2 DM (A1C- 7.0 (2 years ago))
HLD, asthma, PUD
Cholecystectomy

Meds:
Letrozole + Palbociclib

Metformin
Empagliflozin,
Dulaglutide,
Atorvastatin,
Albuterol
No Steroids!

Fam Hx:
DM in parents, 4 siblings, 3 children (20s to 30s)

Soc Hx:
Not significant

Vitals: T: HR: 106/min **BP:** 110/71 mm Hg **RR:** 18 SpO2: 97% RA
Gen: BMI 29; **HEENT:** Visual fields - wnl
Supraclavicular fullness, striae, dorsal pad of fat noted on follow up physical exam

Notable Labs & Imaging:
Hematology: WBC: wnl Hgb: wnl Plt: wnl
Chemistry:
Na: 138 K: 3.6 Cl: 104 BUN: 17 Cr: 0.81 glucose: 229 Ca: 9.0
AST: wnl ALT:wnl HCO3-: 28
Alb - 3.4 ; HbA1C - 12.4 ; TSH - 1.2; UA - not obtained
Early morning labs:
Renin activity - 2.46 (N) ; aldosterone - 5 (N)
Plasma metanephrine - 61 (N); normetanephrine 77 (N)
ACTH - 78 (Elevated)
1 mg dexamethasone suppression test - cortisol - 1.9 (≥ 1.8 is elevated)
Cortisol- 21.5 (Elevated); 24h Urine Cortisol- 358 (Elevated)
3PM - ACTH - 64 (Elevated) ; Cortisol - 18
Petrosal sinus sampling: Ratio = 23 (Ratio ≥ 2 = diagnostic)
Post surgery - ACTH - 9 (N) ; Cortisol - 0.9 (Normalized post surgery)
Imaging:
CT Abdomen and Pelvis w/ contrast: 1.1 cm adrenal adenoma
MRI - no lesions in pituitary ; Repeated MRI - adenoma in pituitary (5*5*3)

Initial Dx: MACS (Mild autonomous Cortisol secretion = Subclinical Cushing)

Final dx: Cushing's disease due to pituitary microadenoma

Problem Representation: 57F presenting with worsening polyuria, polydipsia, wt gain and family history of early onset DM. Physical exam revealed findings concerning for Cushing's. Work up showed increased cortisol, ACTH and negative imaging initially.

Teaching Points (Maryana):
Polyuria and polydipsia: increased osmolality increasing diuresis, deficiency of ADH, increased water ingestion, diabetes.
Polyuria + polydipsia vs polyuria alone: polydipsia added shows that polyuria is real - supports the notion that polyuria is due to increased VOLUME instead of increased frequency.
Polyuria alone: leans toward to urinary causes
SGLT-2 use is associated with polyuria and euglycemic DKA/Letrozole can disturb glucose control in a little bit
Blurry vision - cataract, diabetes complication, osmotic swelling of the lens / **Glucose of 229** - associated diabetes insipidus causing polyuria?
Wt gained: volume excess? Uncontrolled insulin?
Insulin is an anabolic hormone- 1) prevent catabolism x 2) control glucose: HHS: no ketones, but inability to control glucose / DKA: ketones AND inability to control glucose
Adrenal adenoma found - **make sure it is active.** Majority of them are not functional.
1) 24h- urinary cortisol, salivary test, dexamethasone suppression test
Types of hormone production adrenal adenoma: aldosteron, cortisol, Epi/non-epi: increased cortisol and pheochromocytoma could be causing hyperglycemia
Cushing syndrome signs: *Anabolic*: wt gain, high BP, lipodystrophy x ***Catabolic***: osteoporosis, thin vessels, thin skin
ACTH dependent - **pituitary source**. Patient with PHMx of breast cancer - investigate if there is not another source (paraneoplastic syndrome).
Long standing ACTH-dependent cortisol producing adrenal adenoma - *pituitary focus* - investigate it despite of normal MRI