33-Year-Old Female With Amenorrhea
Our Patient

- 33-year-old female presents to endocrinology clinic after amenorrhea for 4 years
The patient had regular periods until after she gave birth to her son 4 years ago in 2010.

Post-partum, the patient became anovulatory.

The patient’s Ob/Gyn treated her with medroxyprogesterone at the time, and she took 4 of 5 pills in the pack.

After this, the patient lost her job and insurance, and was lost to follow-up.
Upon regaining insurance, the patient was seen at the Friend Family Health Center in July, 2014 for continued amenorrhea.
Past Medical History

- **PMH**
  - Migraines
  - Asthma
  - Prior STD
- **Past Surgical History – N/A**
- **Past OB History**
  - G2P1A1
- **Allergies – NKA**

- **Medications**
  - Acetaminophen prn
  - Naproxen prn
  - Albuterol prn

- **Family History**
  - Mother: Osteoarthritis, HTN
  - Brother: HTN

- **Social History**
  - Tobacco: 3-4 cigarettes per day for 9 years
  - EtOH: Denies
  - Illicits: Denies
Further History

- Denies vision changes, visual field defects, or double vision
- Denies numbness or tingling, or paralysis
- Has chronic myopia and wears glasses
- Reports 2-3 headaches per month, which resolve with Naprosyn
  - Occasionally associated with photosensitivity and nausea/vomiting
  - Denies aura
- Patient breastfed for 2 days post-partum, but had ample milk production for 1 year post-partum which tapered off at 14 months post-partum
  - Denies galactorrhea
- Has not tried to conceive a child since she gave birth 4 years ago
- Has no libido
Review of Systems

- Constitutional: **Fatigue**; negative weight loss
- HEENT: Negative for vision changes or visual field defects; Negative for dysphagia
- Respiratory: Negative for SOB or wheezing
- Cardiovascular: **Occasional heart palpitations**; negative chest pain
- GI: Negative for abdominal pain, nausea, vomiting, constipation, diarrhea
- Endocrine: **Occasional heat intolerance**; negative cold intolerance, polydipsia, polyuria
- GU: Negative
- MSK: Negative for arthralgias, myalgias, edema
- Skin: Negative for rashes, erythema, pruritis
- Neuro: **Headaches**; Negative for tremors, syncope, weakness, numbness, paralysis
- Hematological: Negative
- Psychiatric: Negative
Physical Exam

- VS: T: AF; HR 73; BP 97/64; RR 20; BMI 17.9
- General: Thin; well-developed; NAD
- HEENT: Normocephalic, atraumatic; normal conjunctiva and EOM; PERRLA; no visual deficits; supple neck; no thyromegaly present
- CV: RRR; no murmurs, rubs, gallops
- Pulm/Chest: CTAB; no wheezes, crackles; no nipple discharge
- Abd: Soft, non-tender, non-distended; normal bowel sounds
- MSK: Normal ROM; no edema
- Neuro: AAOx3; strength and sensation intact
- Skin: Warm and dry; no acanthosis nigricans; no visible striae
- Psychiatric: Normal mood and affect; normal behavior and judgment
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Available Outside Clinic Labs

17-hydroxyprogesterone: 12
DHEAS: 41
FSH: <0.7
Insulin: <2
Prolactin: 90.5
Estradiol: <15
TSH: 2.34
T3 1.0 ng/dL
FT4 0.94
HbA1C: 5.5%
Total testosterone: 6
Free testosterone: 0.2
Differential Diagnosis?
Differential Diagnosis?

- **Secondary Amenorrhea**
  - Pregnancy
  - Hypothalamic dysfunction
  - Prolactinoma
  - Hyperprolactinemia
  - Sellar mass
  - Craniopharyngioma
  - Meningioma
  - Hyper- and hypothyroidism
  - Cushing Syndrome
  - Congenital adrenal hyperplasia
  - PCOS
  - Premature ovarian failure
  - Asherman Syndrome
  - Anorexia nervosa
  - Anxiety disorders

- **Hyperprolactinemia**
  - Prolactinoma
  - Pituitary Microadenoma
  - Pituitary Macroadenoma
  - Hypothyroidism
  - Acromegaly
  - Acute Renal Failure
  - Craniopharyngioma
  - Meningioma
Pituitary MRI

- Large well-demarcated loculated pituitary macroadenoma with resultant mild expansion of the sella and significant extension superiorly into the basal cistern
- Craniocervical axis of tumor: 35mm
- Largest transaxial dimensions of mass in the basal cistern: 20 x 26.5mm
- Mass superiorly extends to the third ventricle and posteriorly into the interpeduncular cistern
- Mass appears to extend superiorly primarily posterior to the optic chiasm
- There is anterior displacement of the optic chiasm
- No evidence of invasion of cavernous sinuses and no significant depression of the floor of the sella
- No significant mass effect on the A1 segments of anterior cerebral arteries
Assessment

- 65-70% of pituitary adenomas secrete excess prolactin, GH, ACTH, or TSH
  - 30-35% are clinically non-functional ("silent")
- Pituitary macroadenomas associated with prolactin <100 does not represent a lactotroph adenoma
Further Follow-Up

- Consult to ophthalmology for visual field testing
- Consult to neurosurgery for initial evaluation for transphenoidal resection
Further Testing

- AM Cortisol: 6.2
- ACTH: 21.2
- Free T4: 0.76
- T3: 79
Ophthalmology Follow-Up

- Visual field testing unreliable with vague sense of bitemporal hemifield defect
- Repeat visual field testing in 6 months
Neurosurgery Follow-Up

- **Neurological Exam**
  - No focal deficits

- **Musculoskeletal Exam**
  - Muscle tone: Normal in all 4 limbs; no atrophy in any limb; full ROM in arms and legs; normal cervical and lumbar ROM
  - Sensation: Sensation intact in arms and legs
  - DTR’s: 2/4 diffusely and bilaterally
Neurosurgery Follow-Up

- **Differential:** benign adenoma vs hypothalamic glioma vs craniopharyngioma
- **Treatment options**
  - Conservative therapy which includes follow-up MRI and visual field testing in 3 months
  - Establish diagnosis through transphenoidal approach
Neurosurgery Follow-Up

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  - Conservative therapy which includes follow-up MRI and visual field testing in 3 months
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Next Steps?
Endocrinology Management

- Started Hydrocortisone 10mg and 5mg
- Started Levothyroxine 50 mcg
Follow-Up

- The patient is scheduled for follow-up in Endocrinology, Neurosurgery, and Ophthalmology next month
- She will continue on levothyroxine and hydrocortisone replacement therapy at this time.