



62-year-old woman with severe headache

Celeste Thomas
November 1, 2012

History of Present Illness

- **History of hypertension and hyperlipidemia**
 - **Presented to outside hospital after awakening from sleep with**
 - **sudden onset of severe headache**
 - **associated with blurry vision, nausea and vomiting**
 - **Non-infused head CT and CTA performed, patient was told that imaging was abnormal and she should have a follow-up MRI (in ED or through PCP)**
 - **Pt discharged from ED with plan to call her PCP**
-

Sensation 64
Ex: 34274270
CORONAL COW
C: APPLIED
Se: 602/11
Im: 1/58
Cor: A255.9 (COI)

H_p Advocate South Suburban Hospital
HARRIS DOROTHY
1950 Mar 07 F 000715051
Acc: 34274270
2012 Apr 24
Acq Tm: 14:44:05.660014

NJB.PT.WT170
POST INF IS 0370/00ML
512 x 512
B20s

R_F

L_H

120.0 kV
0.0 mA
Tilt: 0.0
0.0 s

Lin: DCM / Lin: DCM / Id: ID
W: 305 L: 114

F_A

DFOV: 20.0 x 20.0cm



C: APPLIED
Se: 602/11
Im: 17/58
Cor: A207.9 (COI)

Acc: 34274270
2012 Apr 24
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Mag: 1.8x

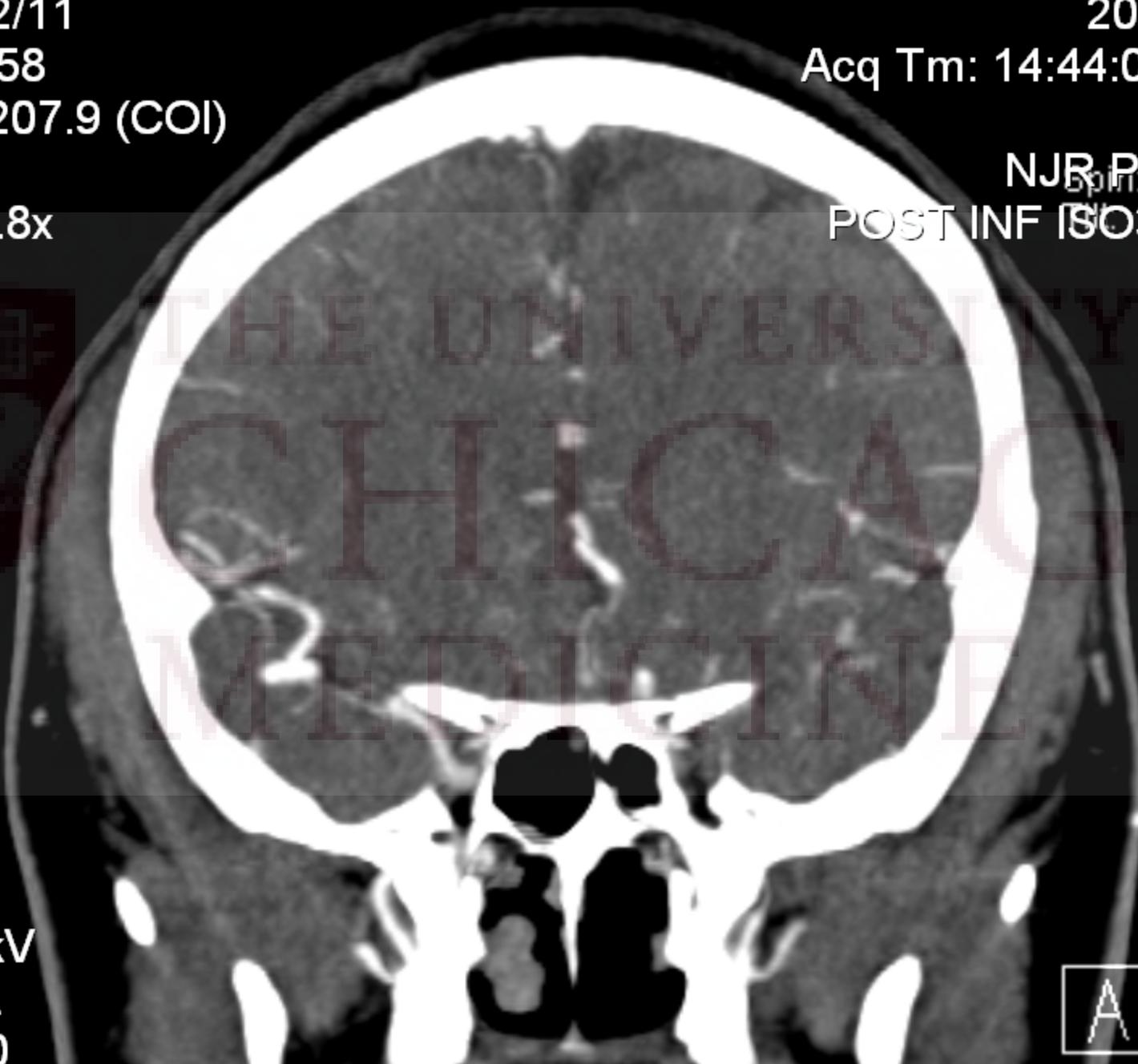
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R_F

L_H

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A



C: APPLIED

Se: 602/11

Im: 18/58

Cor: A204.9 (COI)

Acc: 34274270

2012 Apr 24

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B20s

R_F

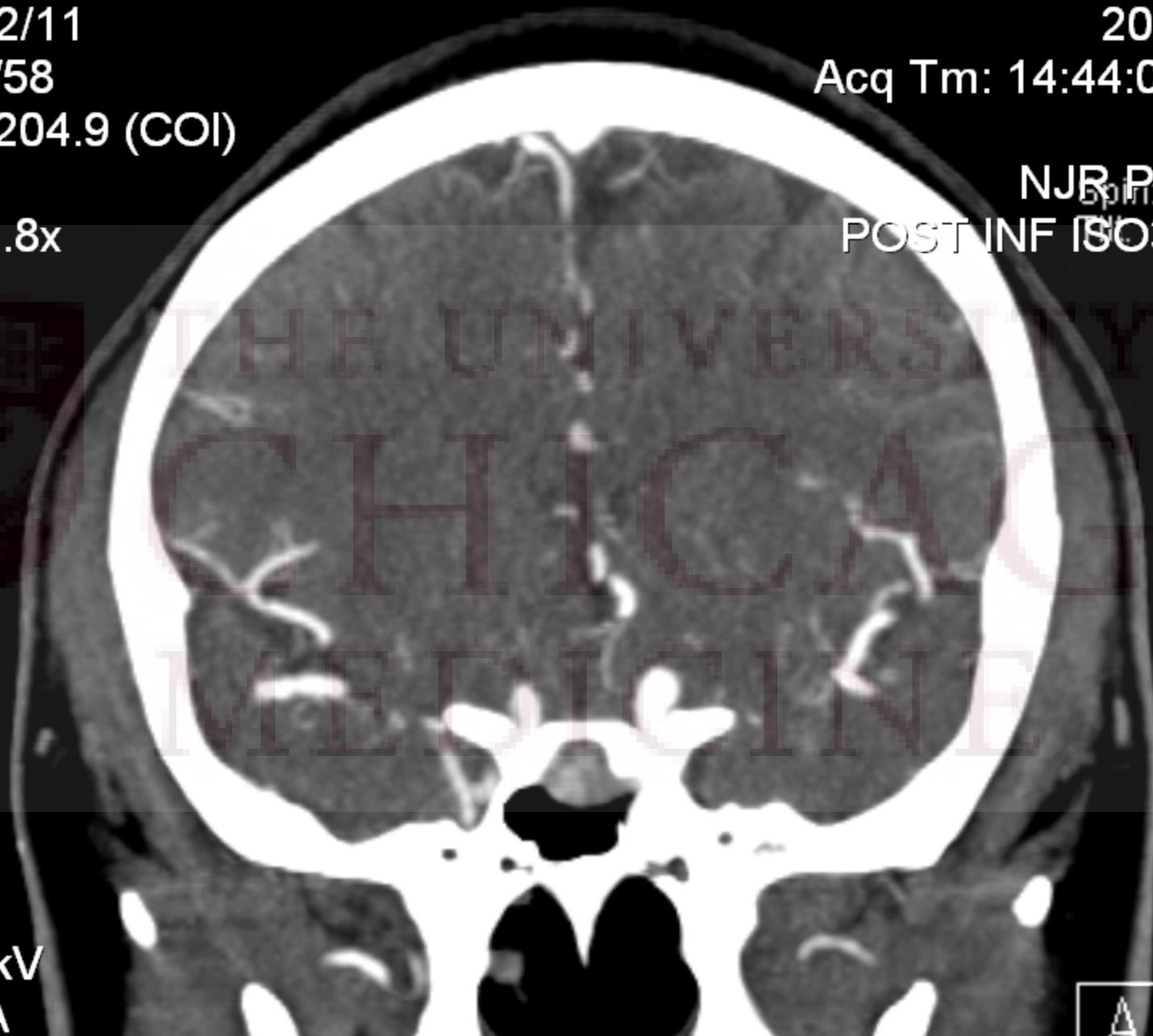
L_H

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0.0 mA

Tilt: 0.0

A



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C: APPLIED
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Im: 19/58
Cor: A201.9 (COI)

Acc: 34274270
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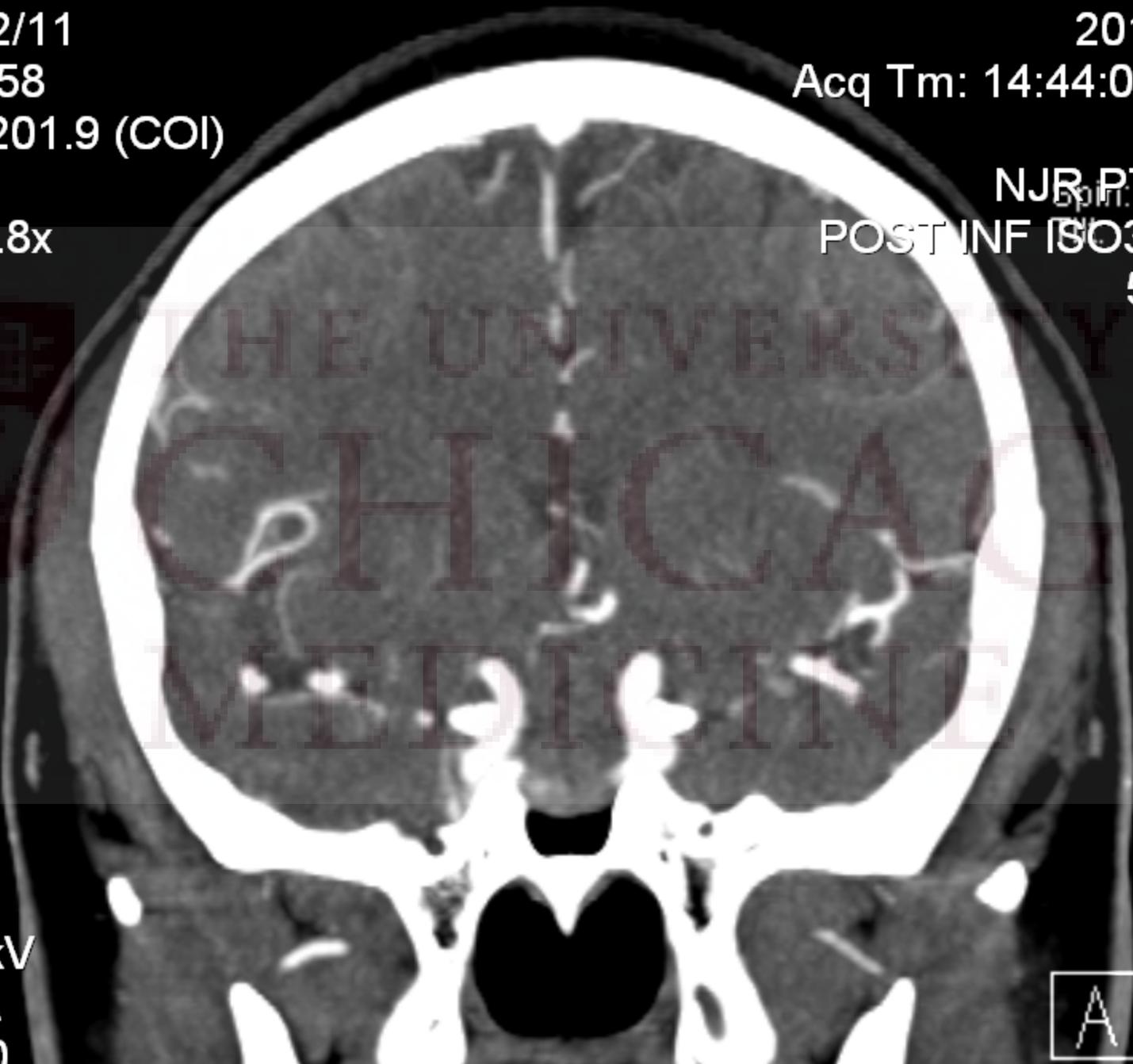
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L_H

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A



C: APPLIED

Se: 602/11

Im: 21/58

Cor: A195.9 (COI)

Mag: 1.8x

Acc: 34274270

2012 Apr 24

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B20s

R_F

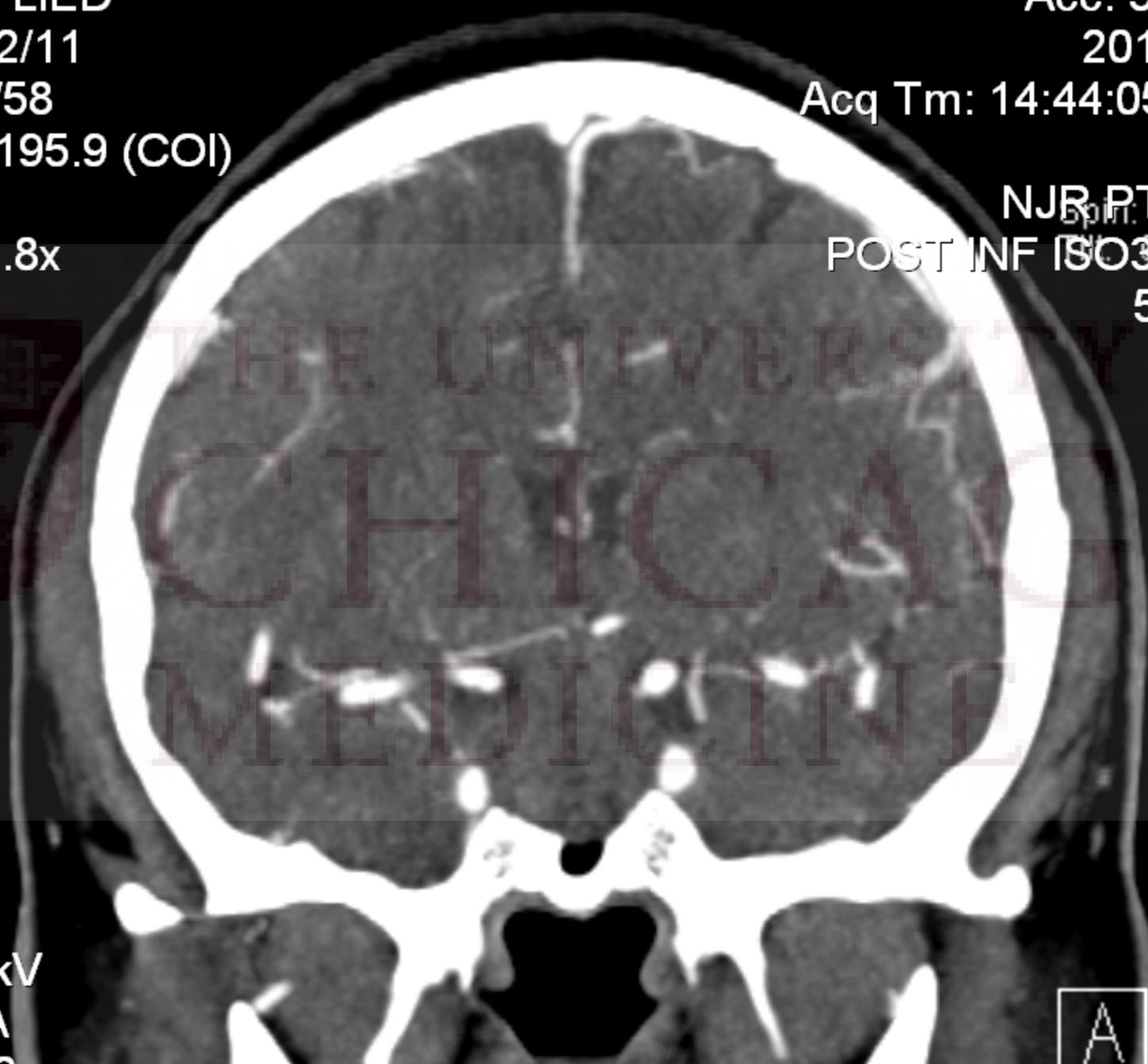
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0.0 mA

Tilt: 0.0

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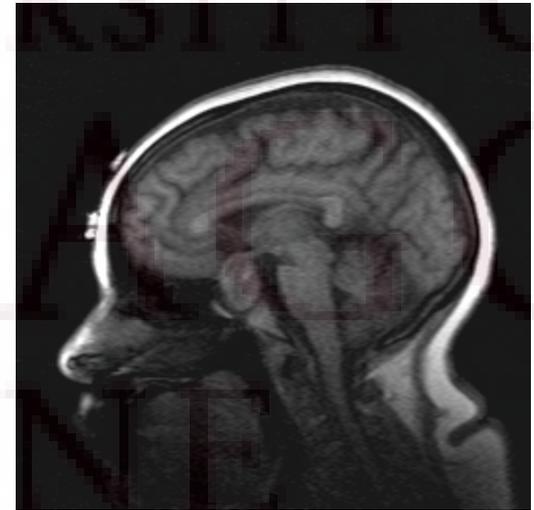
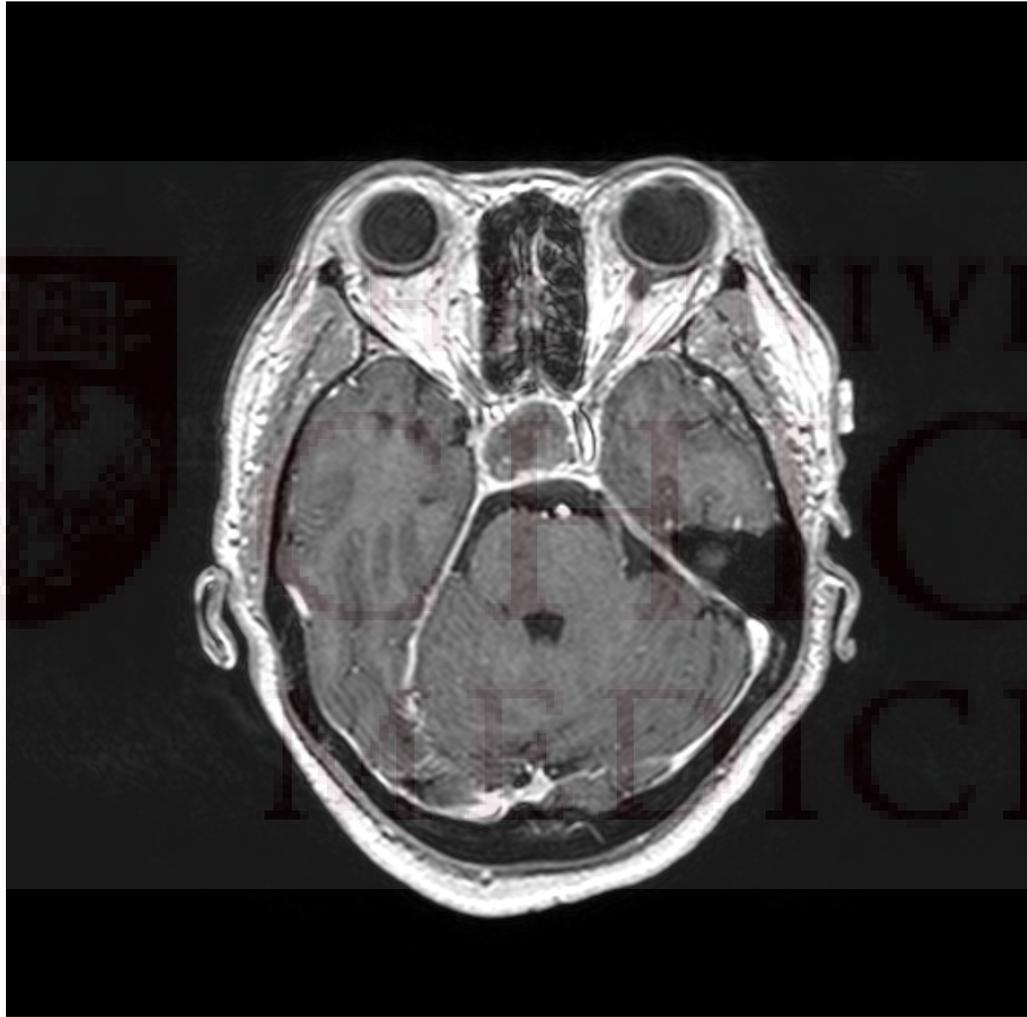
History of Present Illness

- **Following day, pt informed sister (RN) of symptoms and sister transported patient to different OSH**
 - **MR performed revealed 1.5x2.2x2.5cm suprasellar mass with evidence of hemorrhage within the mass and mass effect on the optic chiasm**
-

History of Present Illness

- **Outside Hospital Labs:**
 - Prolactin 4.6 ng/mL
 - TSH 0.895 mcU/mL
 - Free T4 0.43 ng/dL
 - **Dexamethasone was started at OSH**
 - **Neurosurgery here was contacted**
 - **Pt transferred here, continued on dexamethasone 6 mg q4h**
 - **Imaging Reviewed**
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MRI Brain Stealth



Endocrine Consultation

- **Neurosurgery with plan for decompression the following day**
 - **Patient felt her normal self prior to onset of headache with associated blurry vision and nausea**
 - **Stable weight, no new fatigue or muscle weakness**
 - **No lightheadedness**
 - **No abdominal pain, nausea, vomiting, constipation**
 - **No nipple discharge**
 - **No new depression, no new skin changes, no new swelling or puffiness of face or extremities**
 - **Last menstrual period in her early 50s**
-

History

- **Past Medical History**

- Hypertension
- Hyperlipidemia

- **Past Surgical History**

- None

- **Allergies**

- None

- **Medications**

- Aspirin, hydrochlorothiazide, valsartan, atorvastatin
-

History

■ Family History

- Mother deceased at age 42 years after hemorrhagic CVA
- Father alive at 85 years with gout
- Daughter alive with primary hypothyroidism

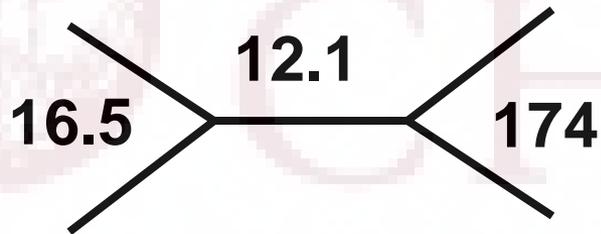
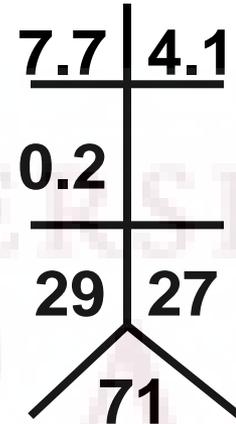
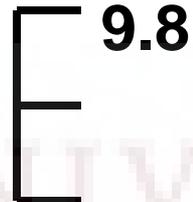
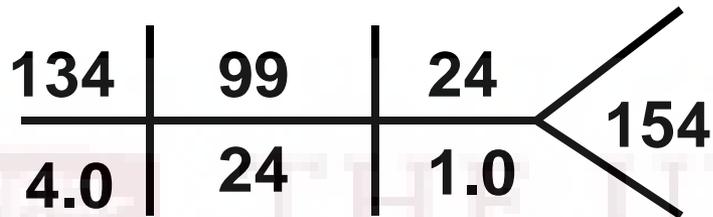
■ Social History

- Supervises telephone operators at an Advocate hospital
 - Former smoker, 0.5 ppd x 10 years, quit in 1987
 - 2 alcoholic beverages per week
 - No illicit drug use
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Physical Exam

- BP 111/58 | Pulse 56 | Temp(Src) 35.1 °C (95.2 °F) (Tympanic) | Resp 20 | Ht 177.8 cm (5' 10") | Wt 77.111 kg (170 lb) | BMI 24.39 kg/m² | SpO₂ 94%
 - Constitutional: well-developed, well-nourished, no acute distress
 - HEENT: EOMI, visual fields full to confrontation
 - Neck: supple, no thyromegaly,
 - Cardiovascular: bradycardic rate, no extra heart sounds
 - Pulmonary/Chest: good respiratory effort, clear to auscultation bilaterally
 - Abdomen: bowel sounds present, soft, non-tender, no violaceous striae
 - Musculoskeletal: moving all extremities
 - Neurological: sensation intact to light touch
 - Skin: warm, dry
-

Labs Here



Prolactin = 3.1 ng/mL

IGF1 = 104 ng/mL

Estradiol = 8 pg/mL

FSH = 0.7 mIU/mL

LH = <0.1 mIU/mL

TSH = 0.22 mcU/mL

free T4 = 0.46 ng/dL

Recommendations

- **Continue dexamethasone per neurosurgery, plan to discharge on replacement hydrocortisone, 20/10**
- **Agee with levothyroxine started – 75 mcg**
- **Follow-up in Endocrine Clinic**

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Pathology

- **"Pituitary tumor" (two specimens, parts B and C):**
 - Pituitary adenoma with features of recent infarction, see comment #1.
- **Comment #1:**
 - Extensively necrotic / devitalized tumor with patchy early reactive changes
 - Highly cellular and comprised of bland small cells with round nuclei.
 - Positive for synaptophysin
 - Lesional cells with expression of prolactin but no staining with antibodies for GH, LH, FSH, TSH, and ACTH.
 - Appears distinctive enough to suggest a prolactin expressing pituitary adenoma

Follow-up Visit – POD # 11

- **Feeling well, no headaches, no nausea, no increased urination or increased thirst**
 - **Reviewed pathology**
 - **Continued hydrocortisone 20 at 8AM, 10 at 2PM**
 - **Continued levothyroxine – 75 mcg**
 - **Return for insulin tolerance test and repeat thyroid function tests**
-

Insulin Tolerance Test – 6 weeks postop

Time Point	Glucose (mg/dL)	Cortisol (mcg/dL)	GH (ng/mL)
-15		7.7	<0.1
0	84	7.3	<0.1
15	63	5.8	<0.1
30	38	9.5	0.5
40	35	10.6	1.5
45	40	11.7	1.8
60	68	15.9	0.9
75	108	17.0	0.4
90	139	14.0	0.2
120	169	10.2	0.1

Free T4 = 1.11 ng/dL, TSH = 0.22 mcU/mL

Assessment

- **If seriously ill, patient may not have the requisite adrenocorticotrophs to mount a sufficient response and would likely require exogenous glucocorticoid**

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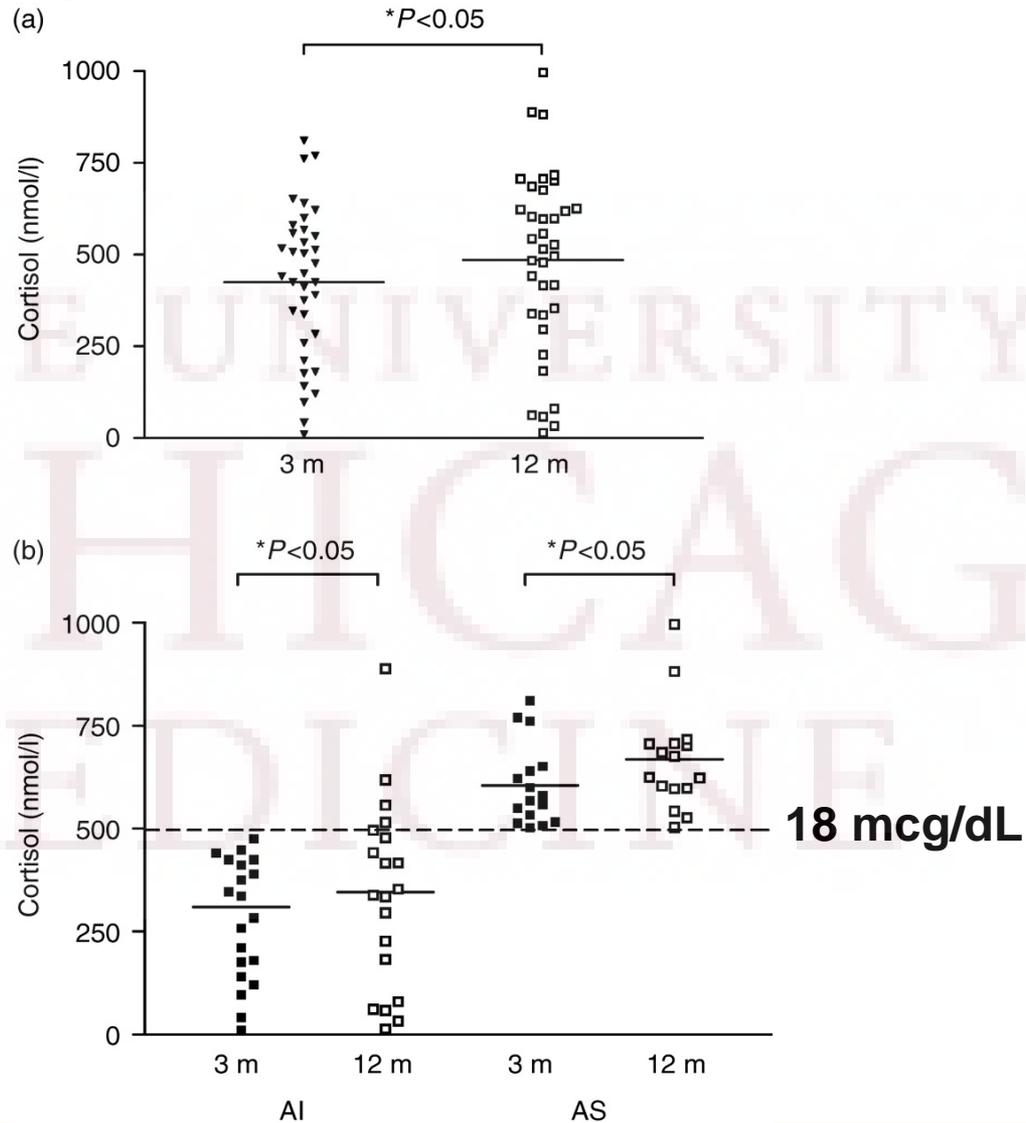
Recommendations

- **Discussed with patient**
 - **Reminder to obtain ID bracelet**
 - **Option to take hydrocortisone only when ill**
 - **Continue on daily replacement with increase when ill**
 - **Pt opted to continue on hydrocortisone (10/5)**
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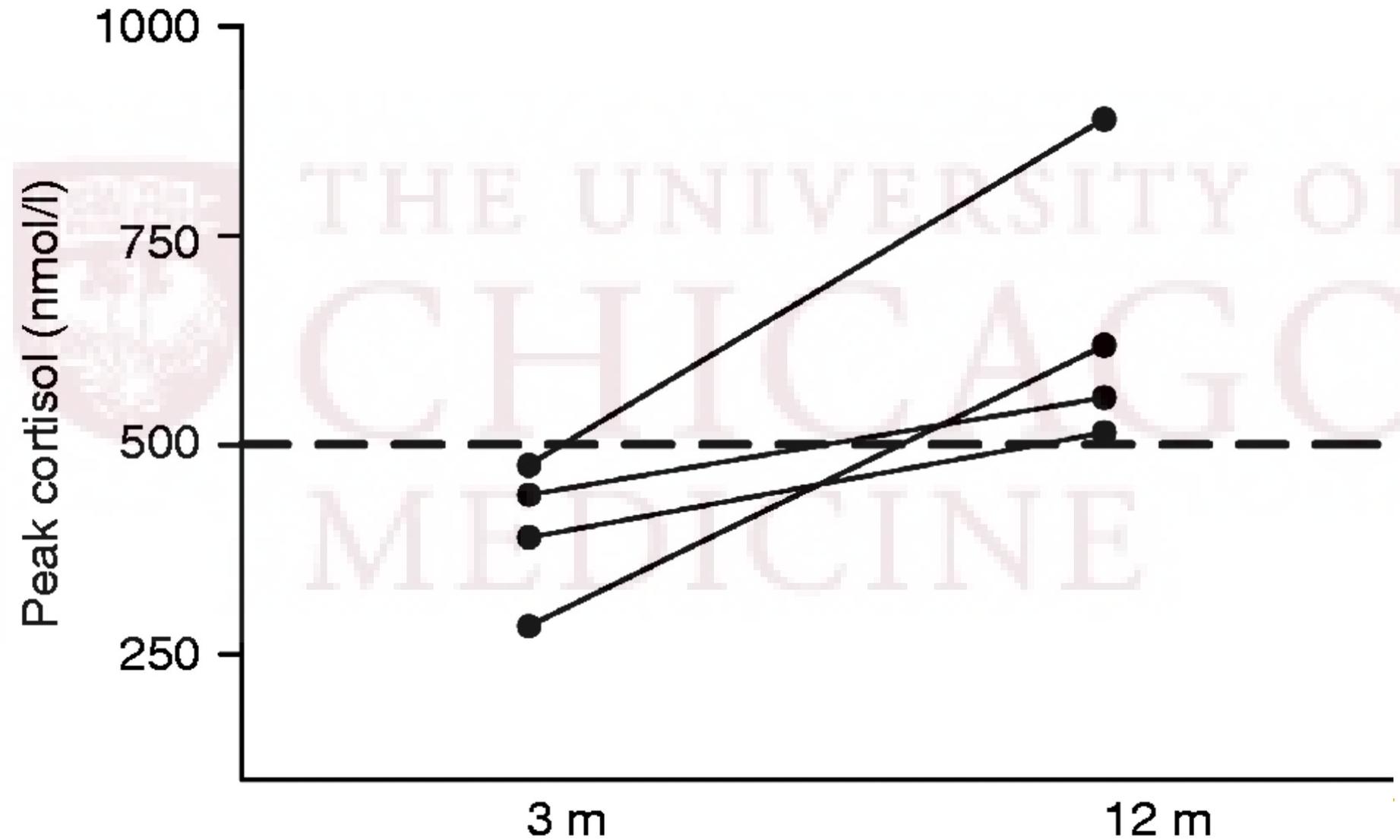
But...could things change?

- Clinical Study to evaluate the diagnostic utility of an additional ITT 12 months after pituitary surgery
- 36 patients (13 woman, 23 men)
- 26 nonfunctioning adenomas, 5 prolactinomas, 3 craniopharyngiomas, 2 meningiomas (all > 1cm)
- All resected via transsphenoidal surgery
- No difference in nadir blood glucose between 3 and 12 month ITT
- At 12 months
 - Basal cortisol was not sufficiently changed
 - Median cortisol peak levels increased by 17%
 - Four of twenty patients restored ACTH reserve

Individual and median peak cortisol responses (nmol/l) to ITT at 3 and 12 months after pituitary surgery in 36 patients



Individual change in peak cortisol levels to ITT at 12 months compared to 3 months in patients who became sufficient when re-tested



Take Home Point

- Consider repeat evaluation of adrenocorticotroph reserve in patients with suboptimal response at initial evaluation after transphenoidal surgery

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References

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- Erturk E, Jaffe CA, Barkan AL. Evaluation of the integrity of the hypothalamic–pituitary–adrenal axis by insulin hypoglycemia test. *Journal of Clinical Endocrinology and Metabolism* 1998 83 2350–2354.
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- Grinspoon SK, Biller BM. Laboratory assessment of adrenal insufficiency. *Journal of Clinical Endocrinology and Metabolism* 1994 79 923–931.