

A (Very) Brief Review of Neurosurgery for Internists

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Grand Rounds, 12/10/2021

To Do List

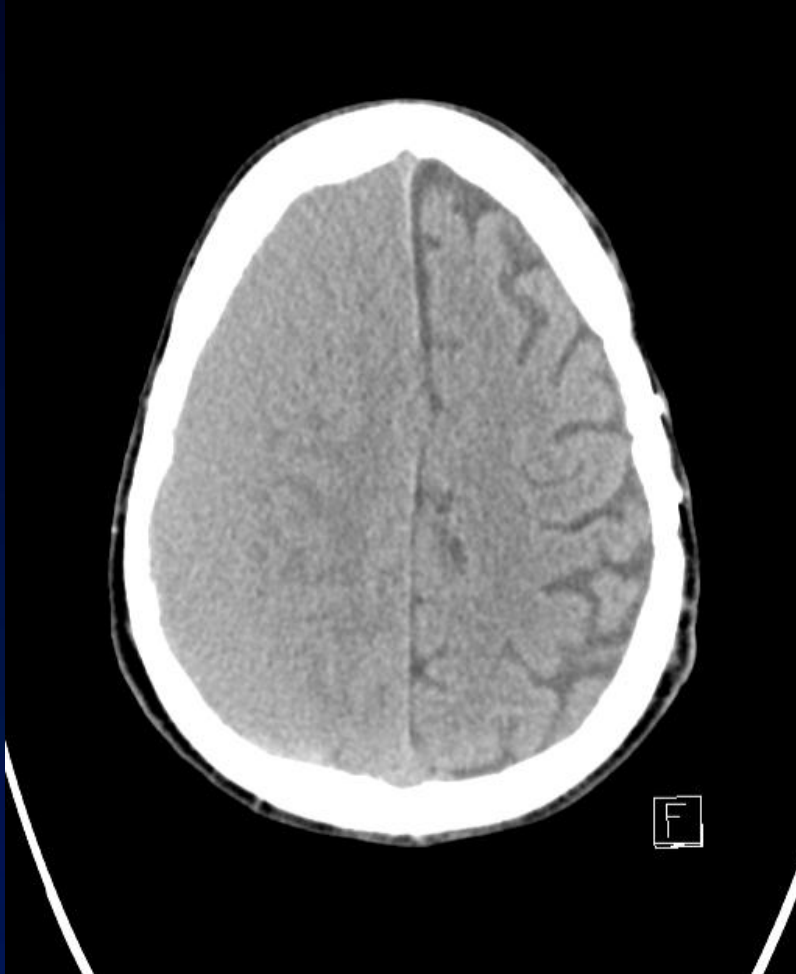
- Discuss Common Neurosurgical Conditions encountered by IM
 - Cranial
 - Small Bias towards Epilepsy
 - Spine
- Discuss Common Neurosurgical treatments
- Discuss Initial Workup, Referrals

Case 1

57M presents to ED with HA after a fall

- PMH: EtOH, DM, withdrawal seizures, LBP/spinal stenosis, history from EMR
- Exam:
 - Slow mentation, but alert and intact
 - LUE drift on exam

Case 1



Case 1



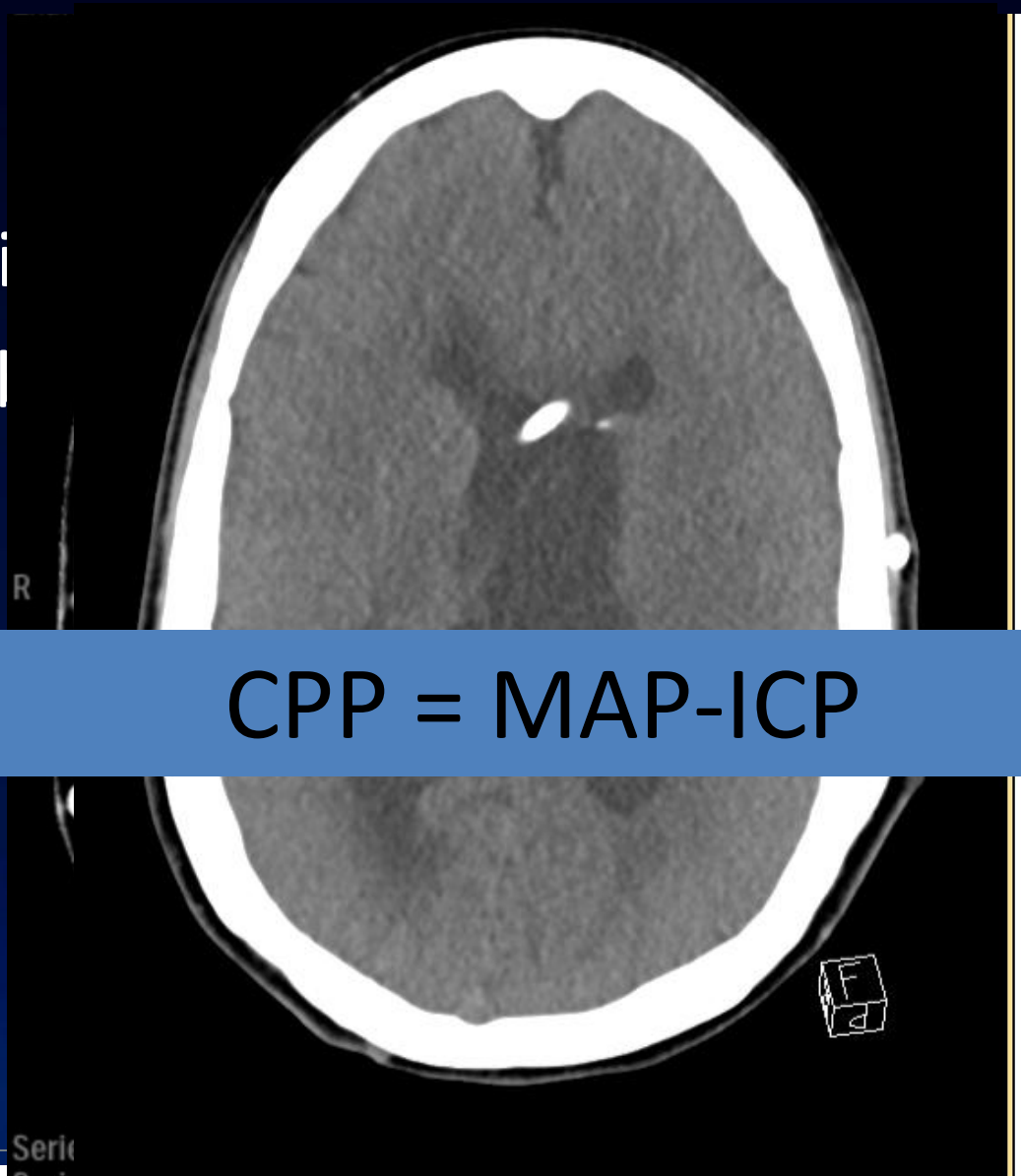
Case 2

31F presents with slowed mentation and UTI

- PMH: complicated; myelomeningocele, congenital hydrocephalus, urostomy, colostomy, multiple spinal and abdominal surgeries
- Exam:
 - Slow mentation, but alert and intact
 - Slight upgaze palsy
 - Foul smelling urine

Case 2

UA – positive
CT Head of
history



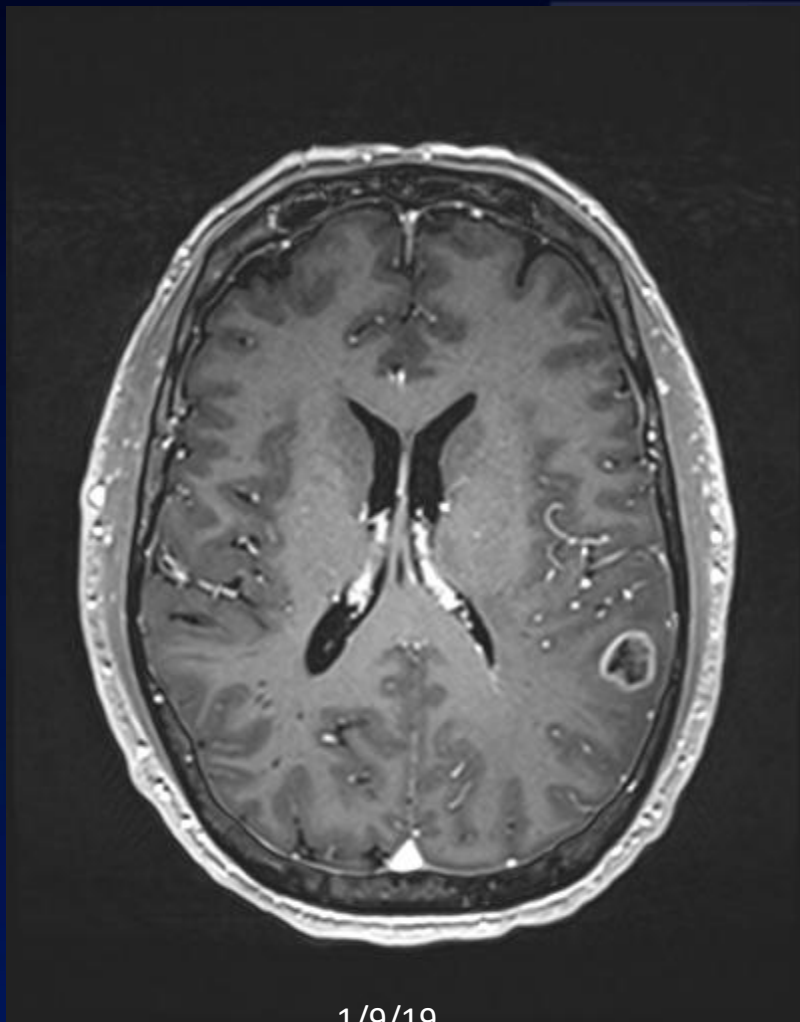
of

CPP = MAP-ICP

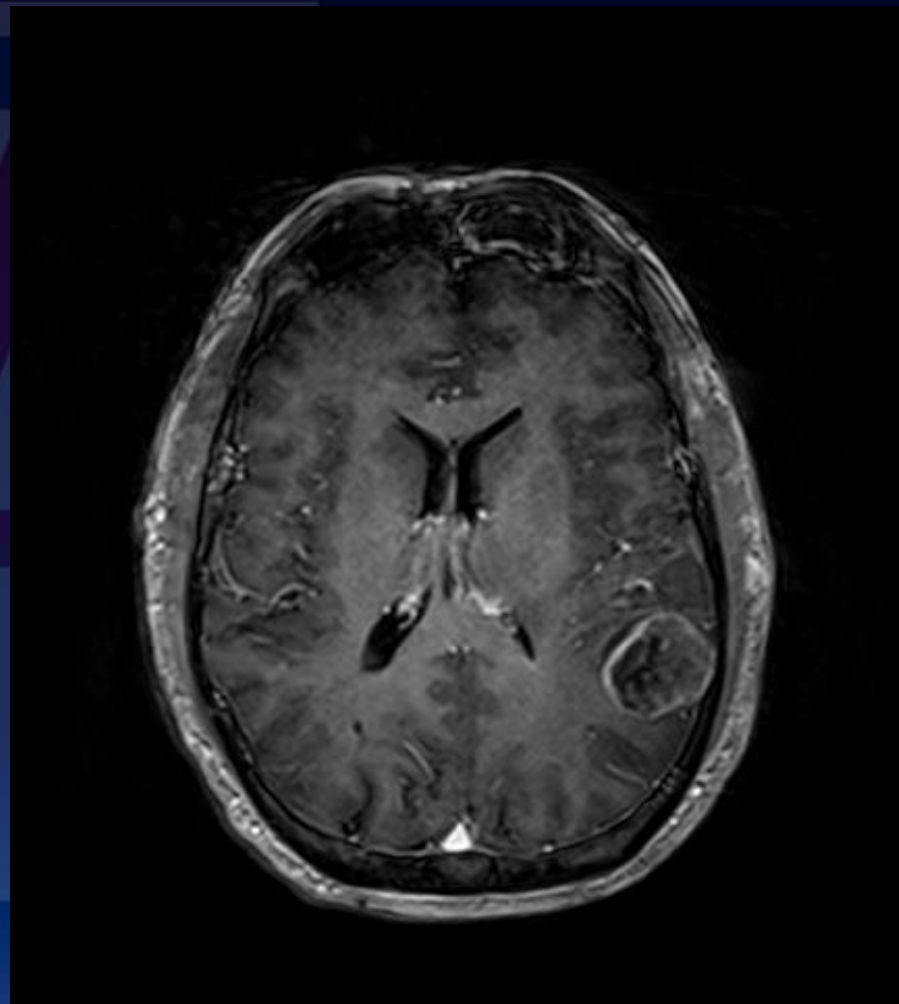
Case 3

63M with episode of complete aphasia, resolved, and lingering word finding difficulty with right hand clumsiness

- PMH: none
- Exam:
 - Slight RUE grip weakness, dexterity problems
 - Very mild dysphasia with word substitutions



1/9/19

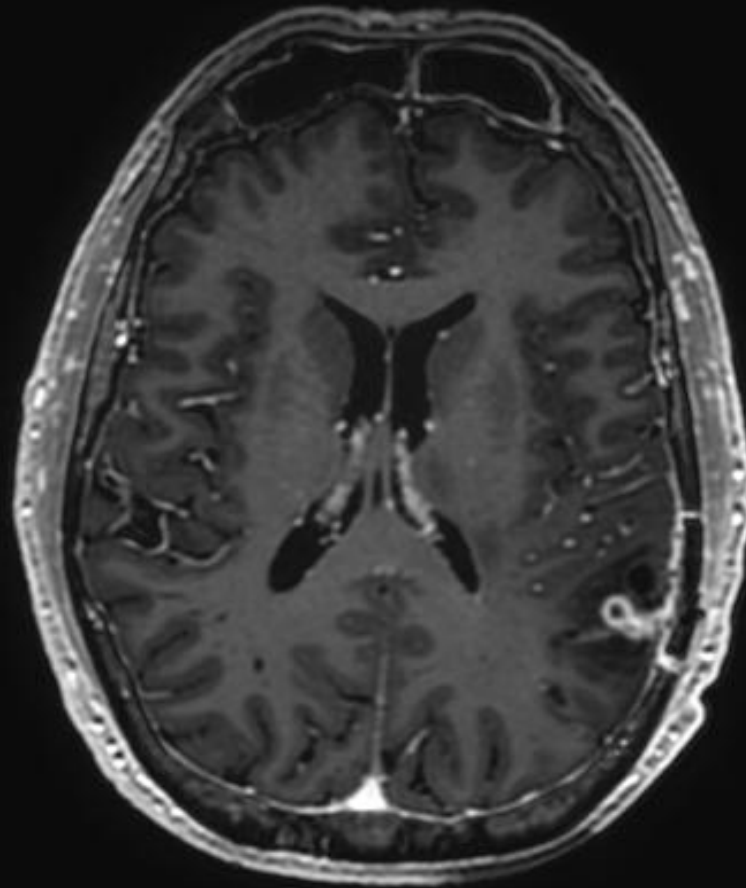


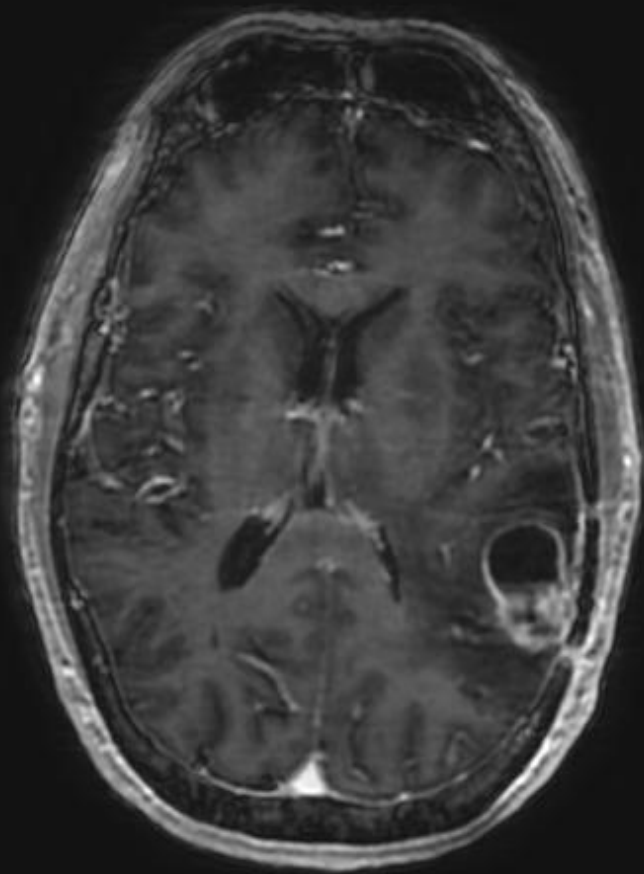
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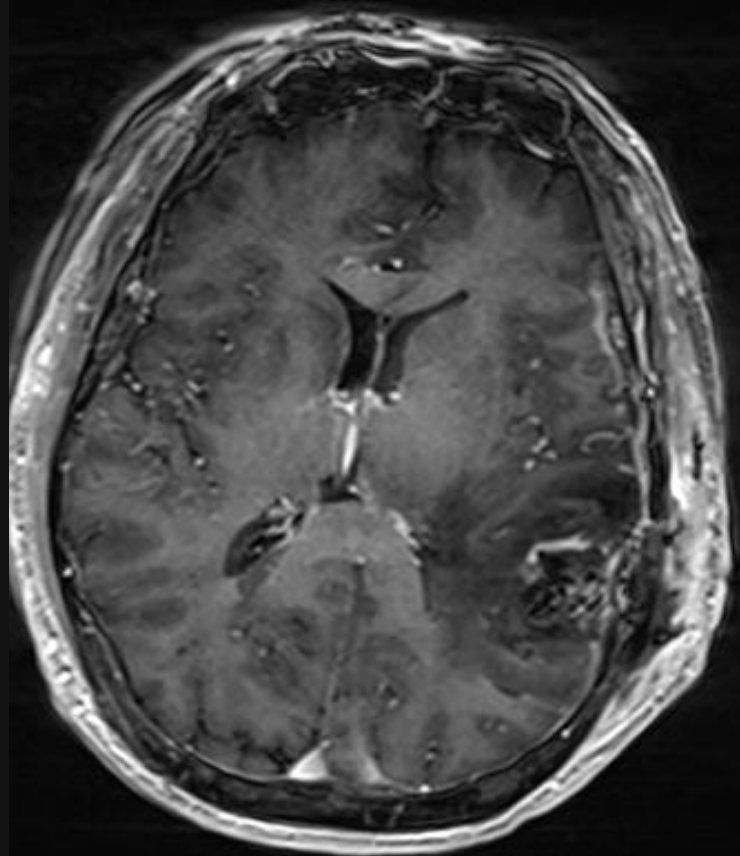
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9/9/19

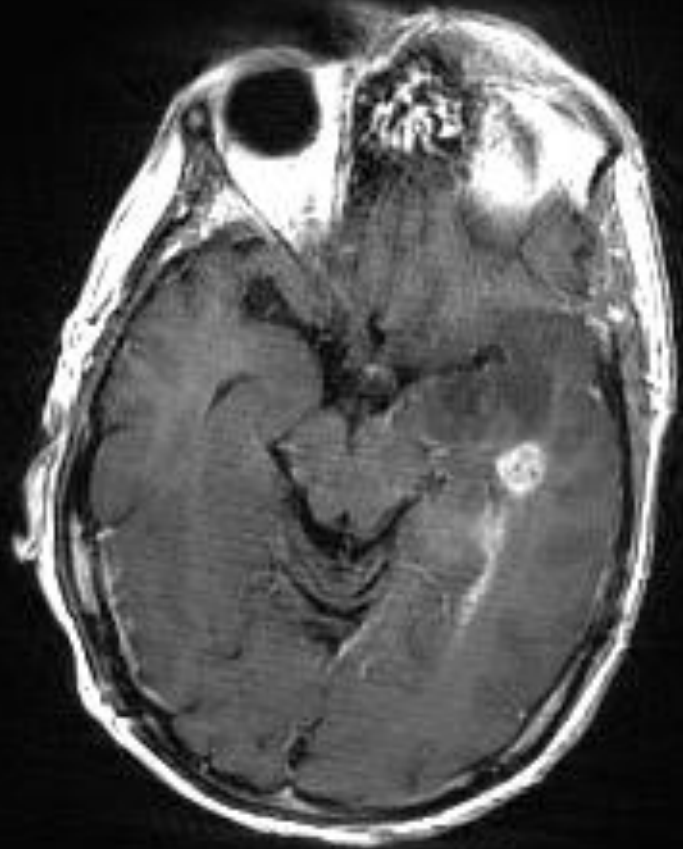
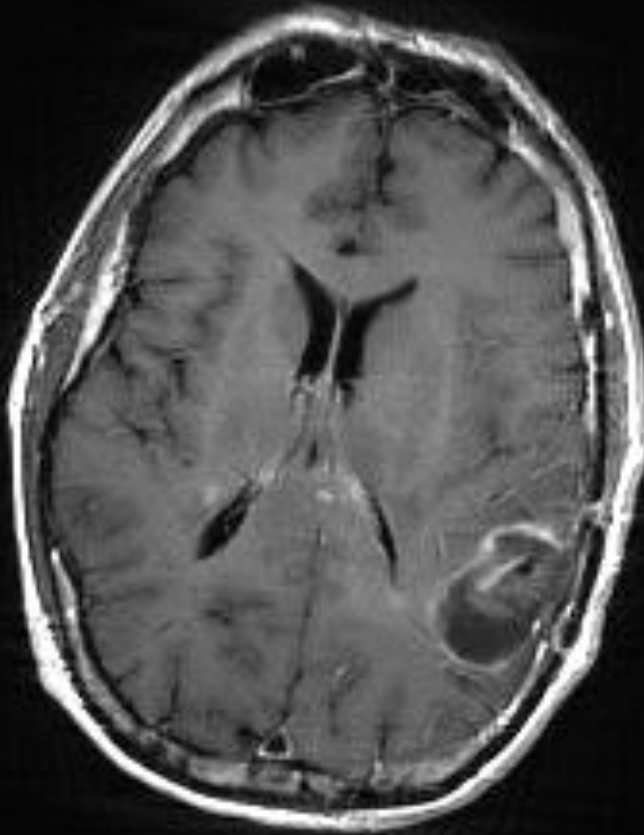


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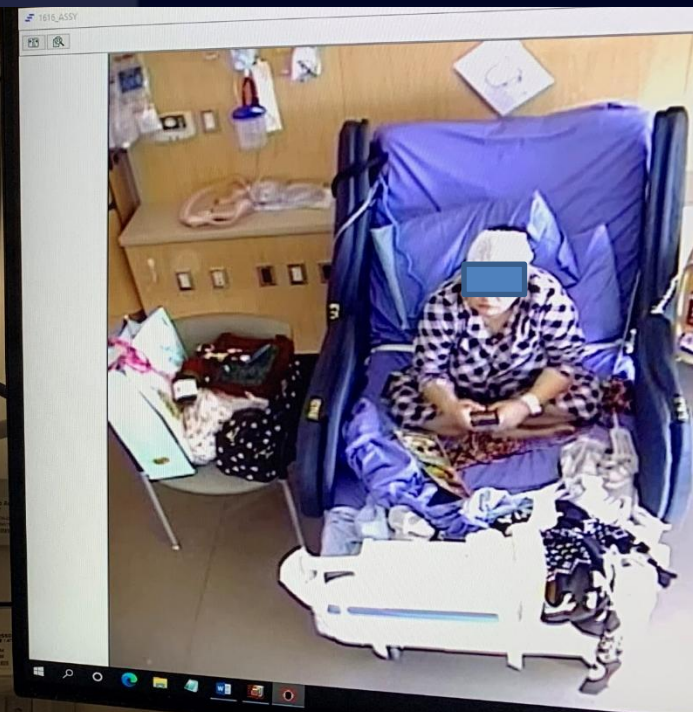
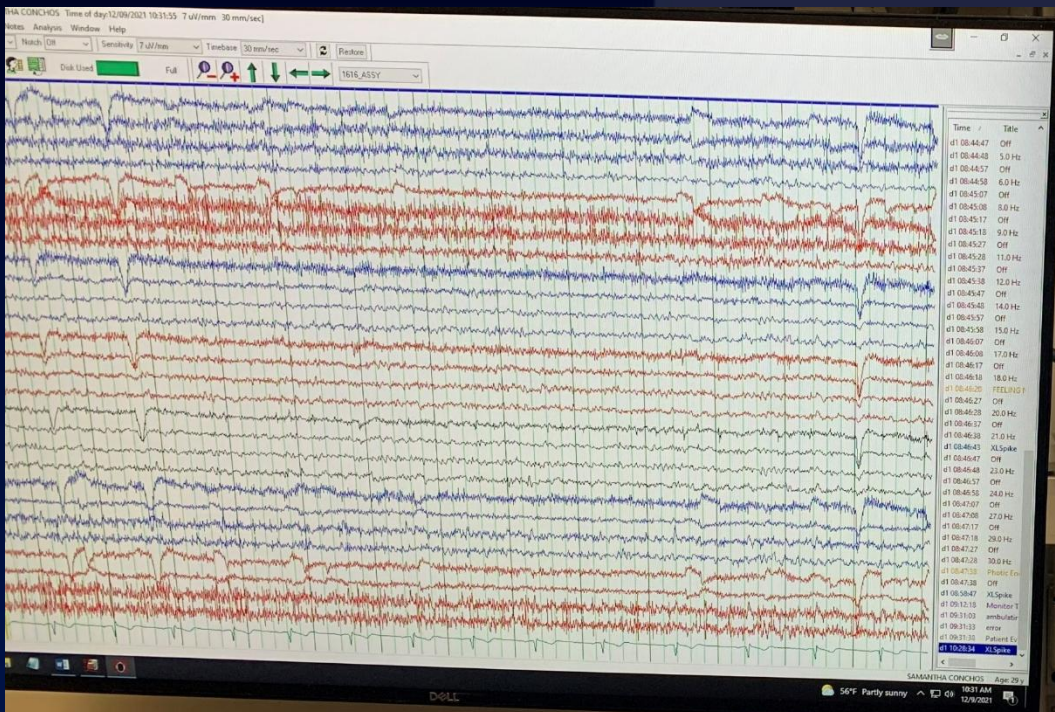
Case 4

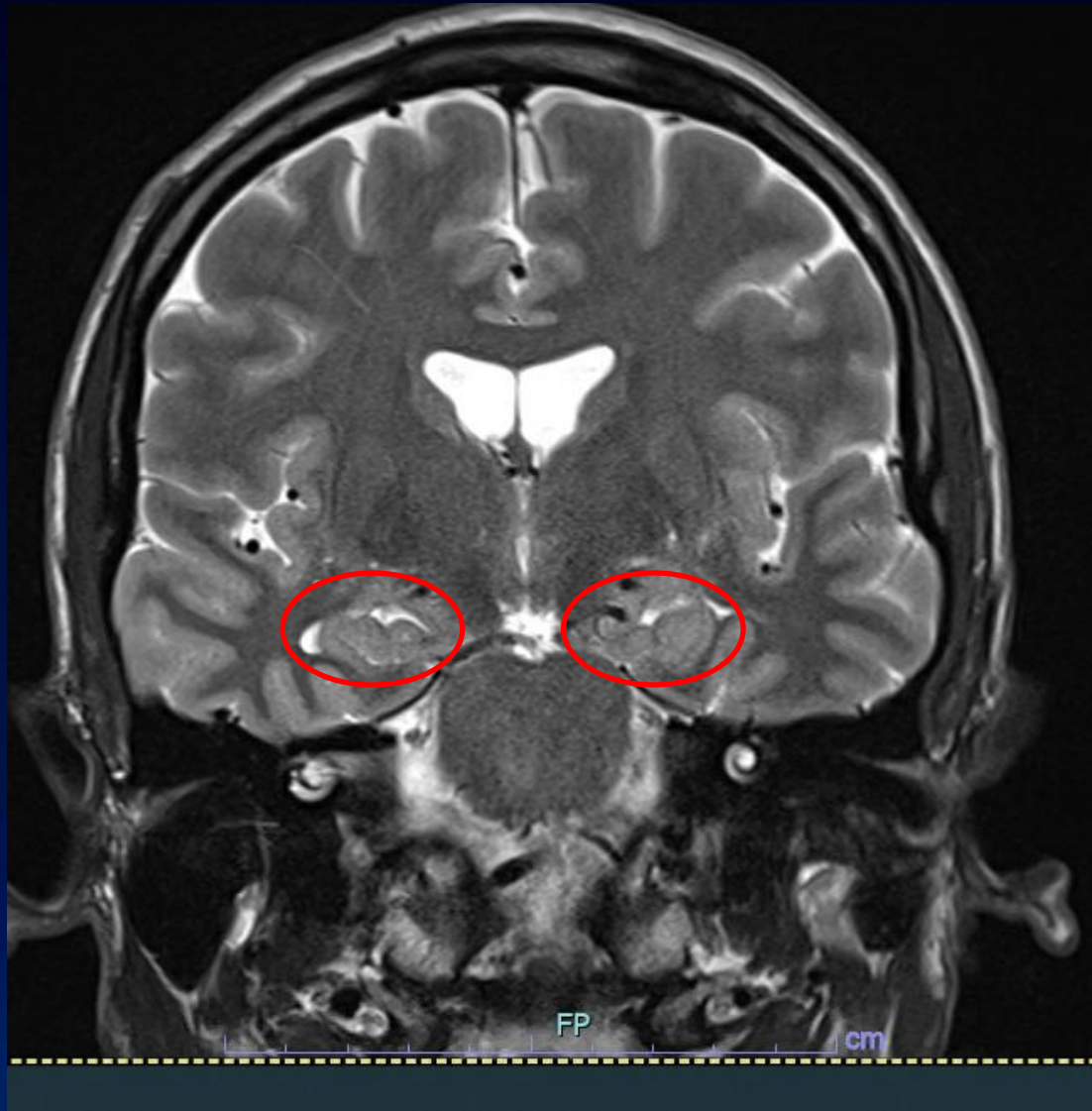
34M with episodes of gurgling, gasping during sleep, starting 1 year after head trauma.

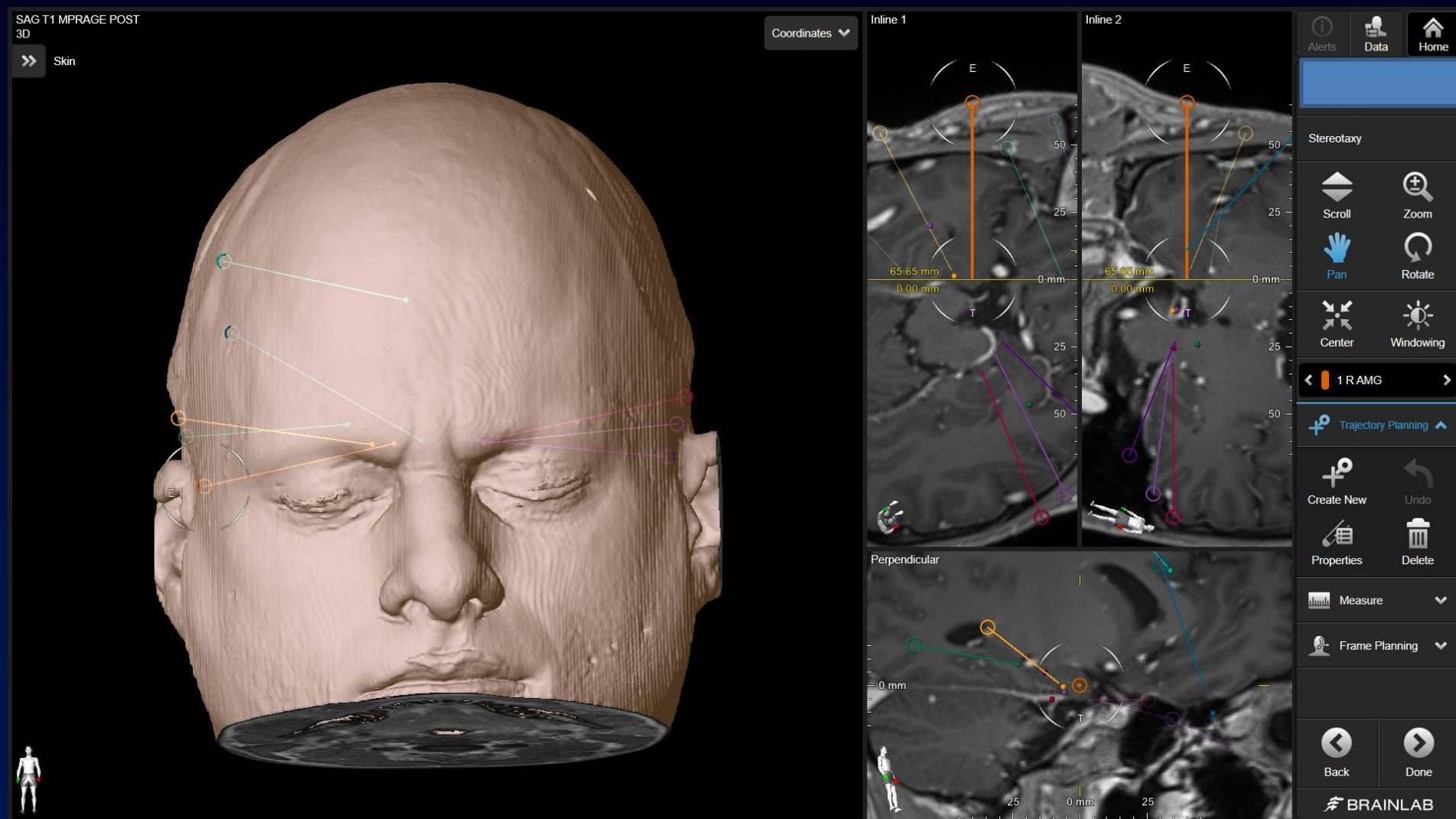
Increase in incidence – multiple GTCs monthly with multiple absence events. No aura

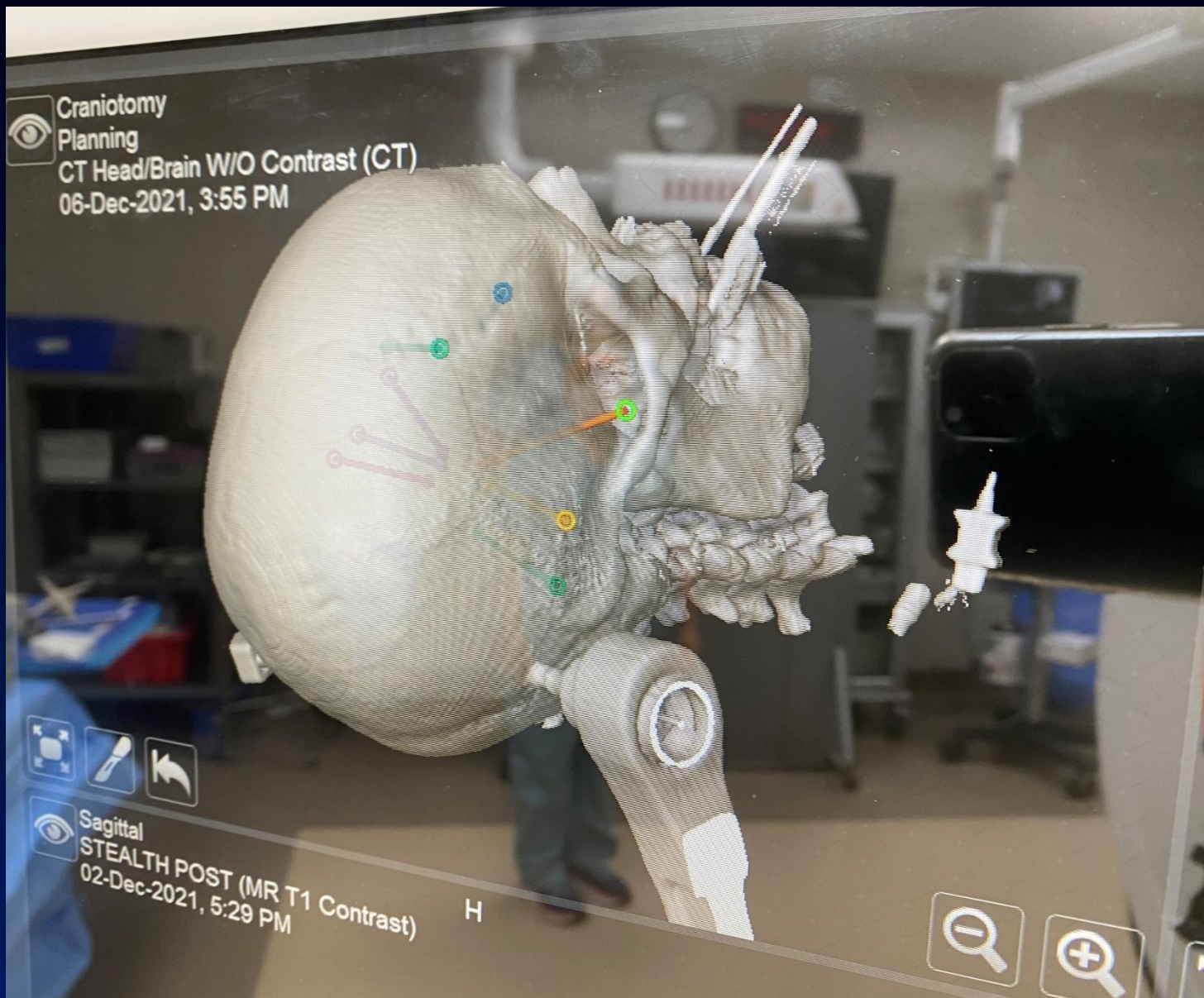
PMH: none

- Exam:
 - Neurologically intact











1. Item Introduction
Cover only items
the patient

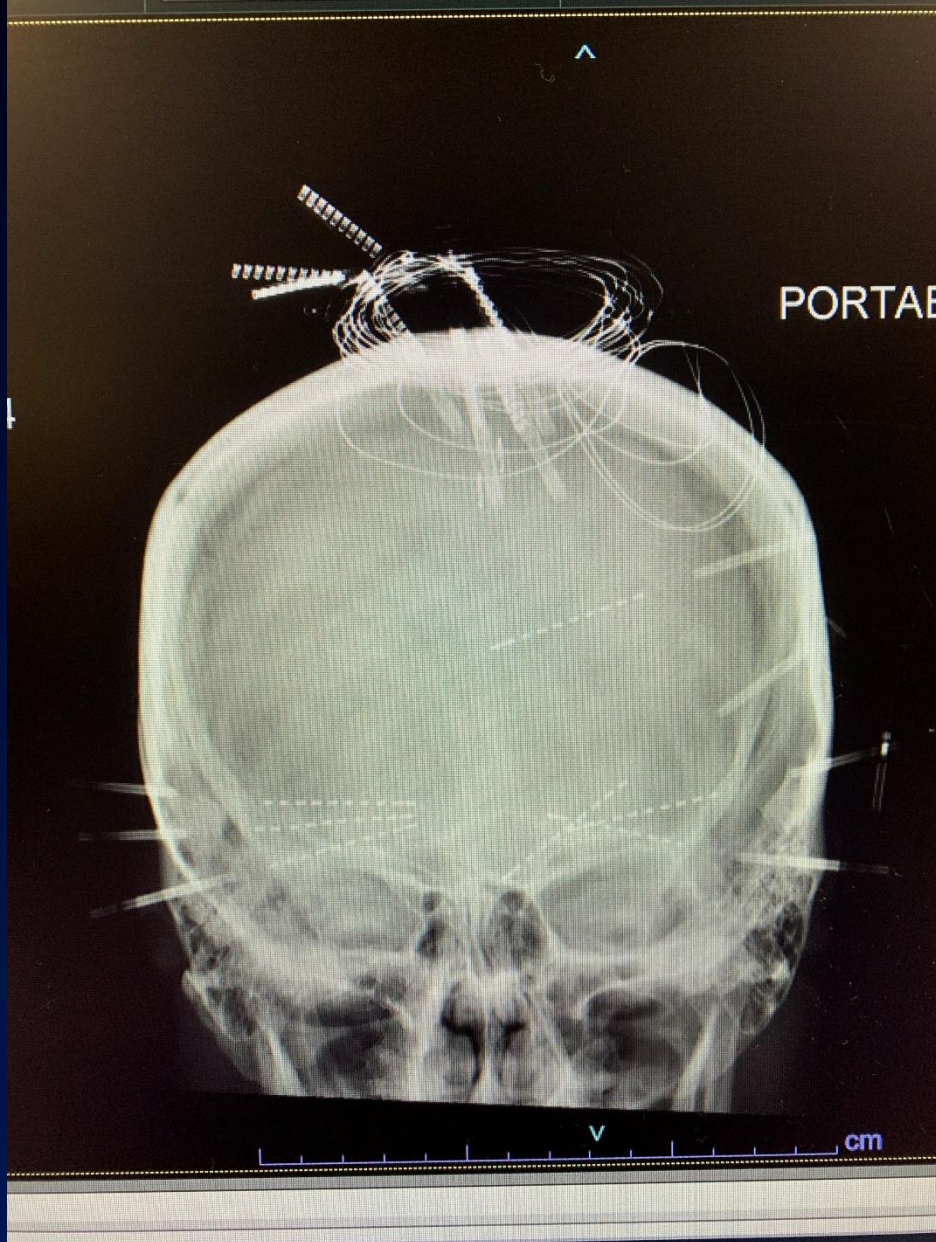
4. Suggested content
Surgeon: Type of
critical times, post
Circulating Nurse
implants, skin care
Nurse: Instruments
medications on site
Anesthesia Care
concerns, blood work
placed, Beta blockers
meeting surgeon for
anesthesia and surgical
team and patient care
If the following is not present at the
time of the surgery, it is an essential
part of the pre-operative planning
process. Anesthesia care
planning is essential to the
surgical team's success.

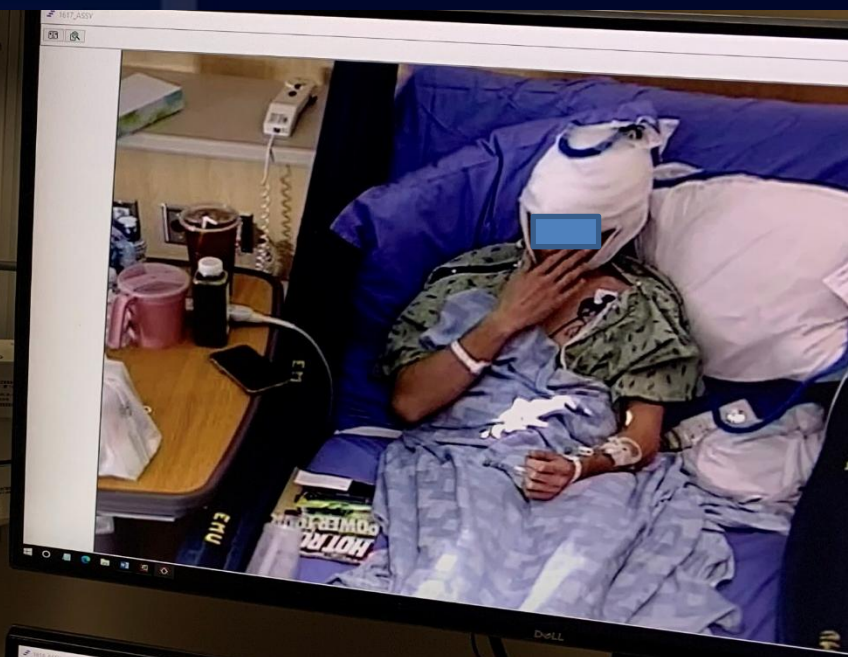
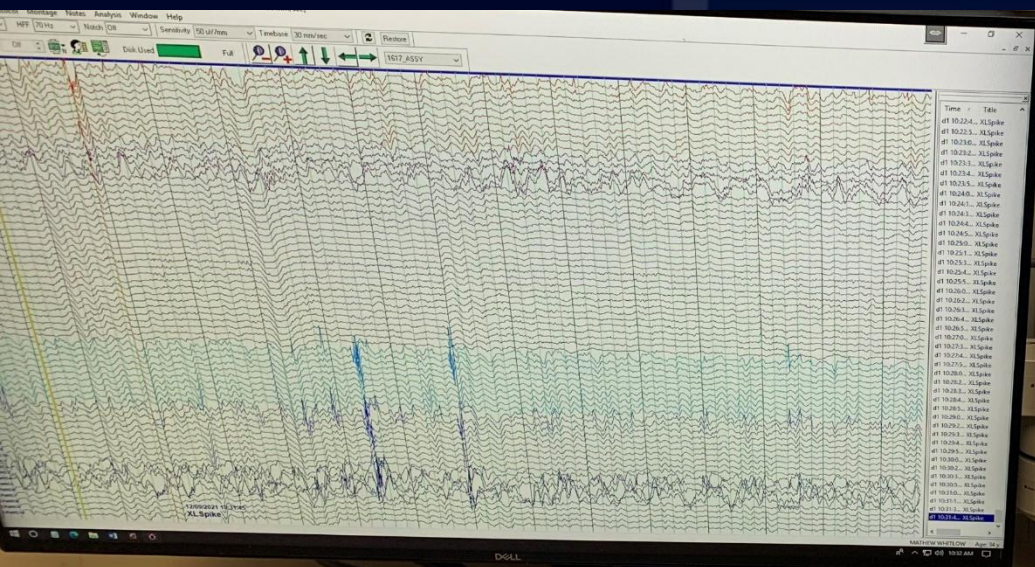


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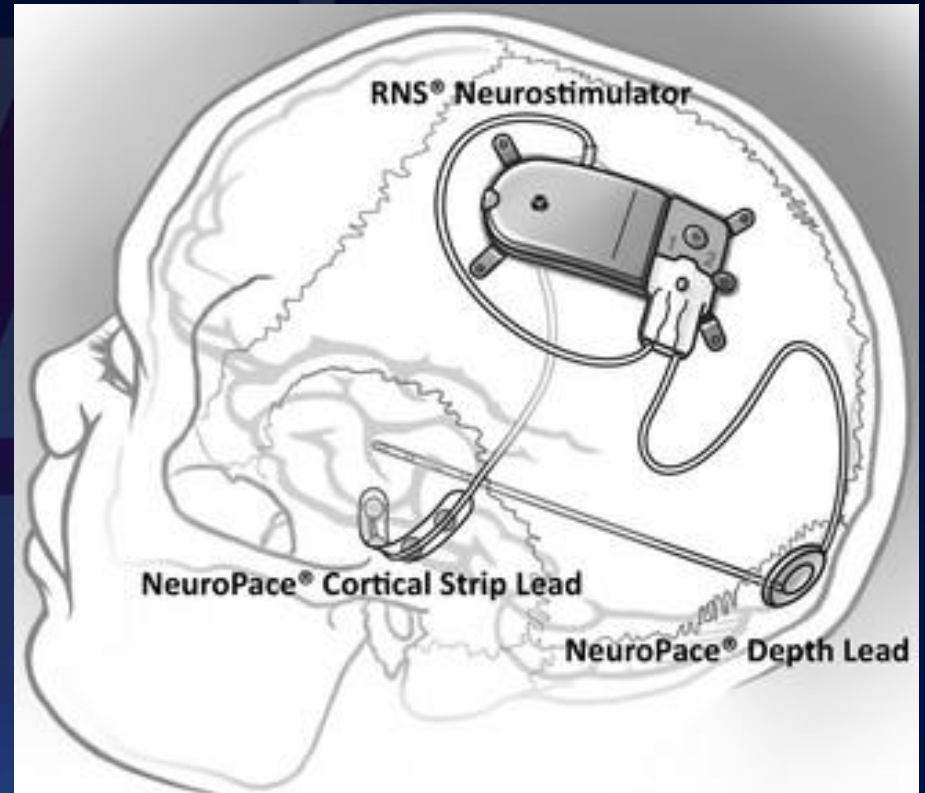
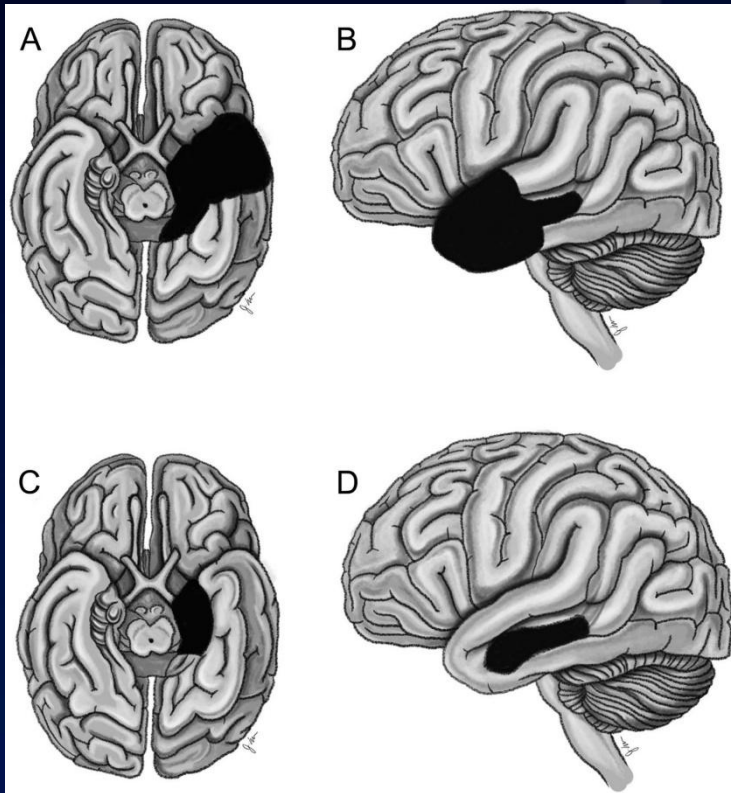
ends, 12/10/2021



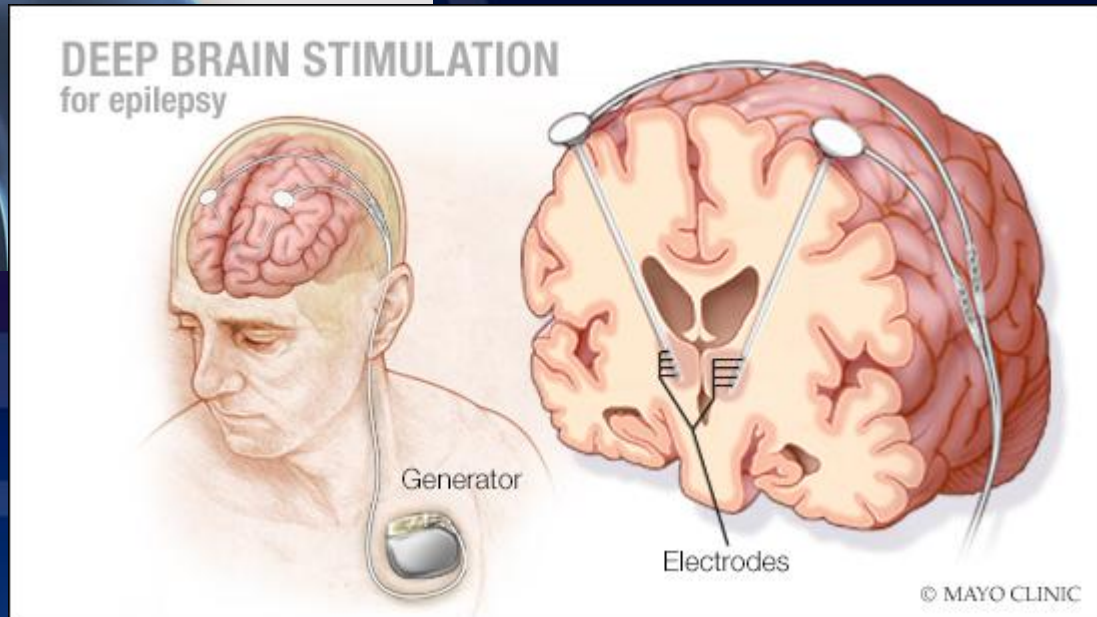
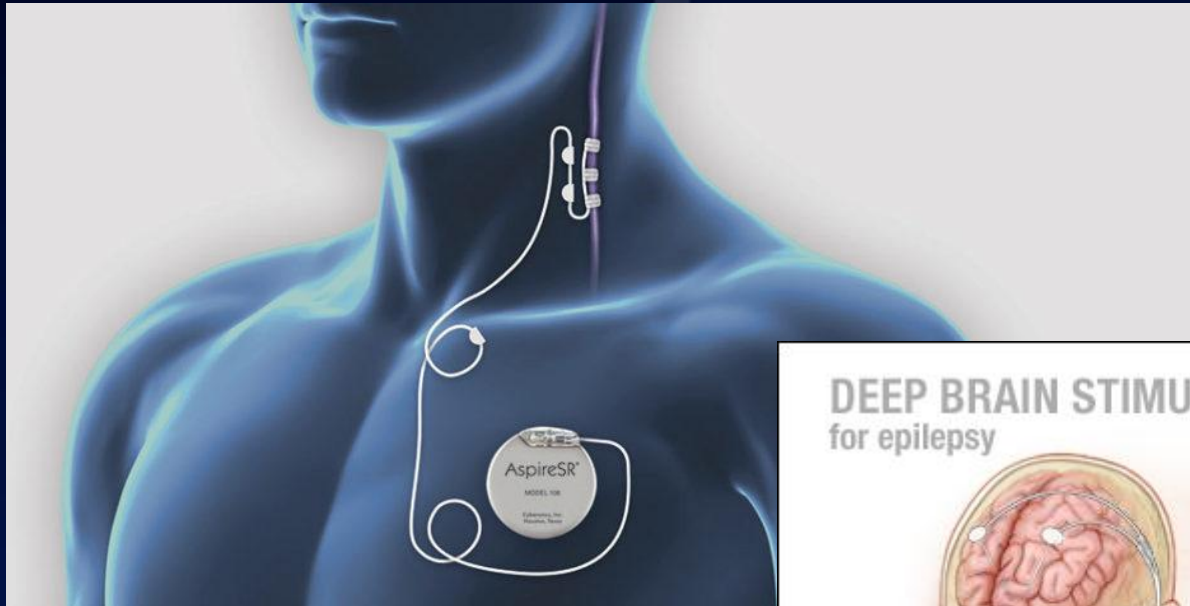




Epilepsy Treatment Paradigms



Epilepsy Treatment Paradigms

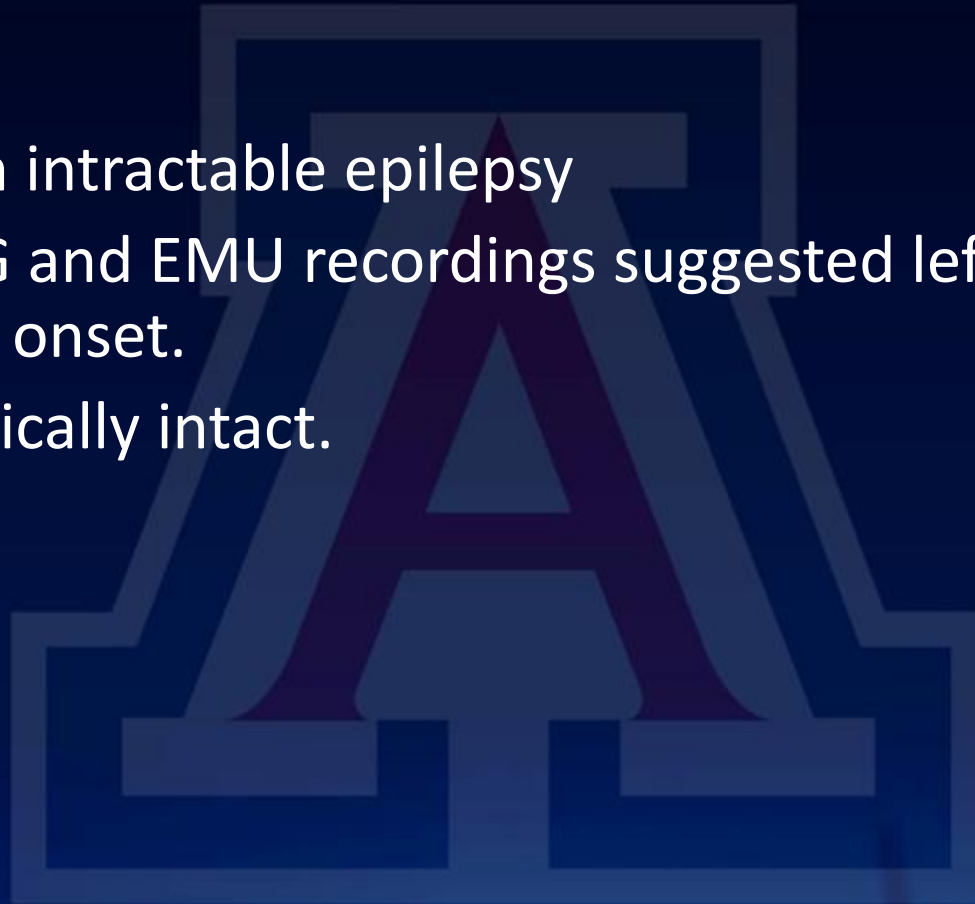


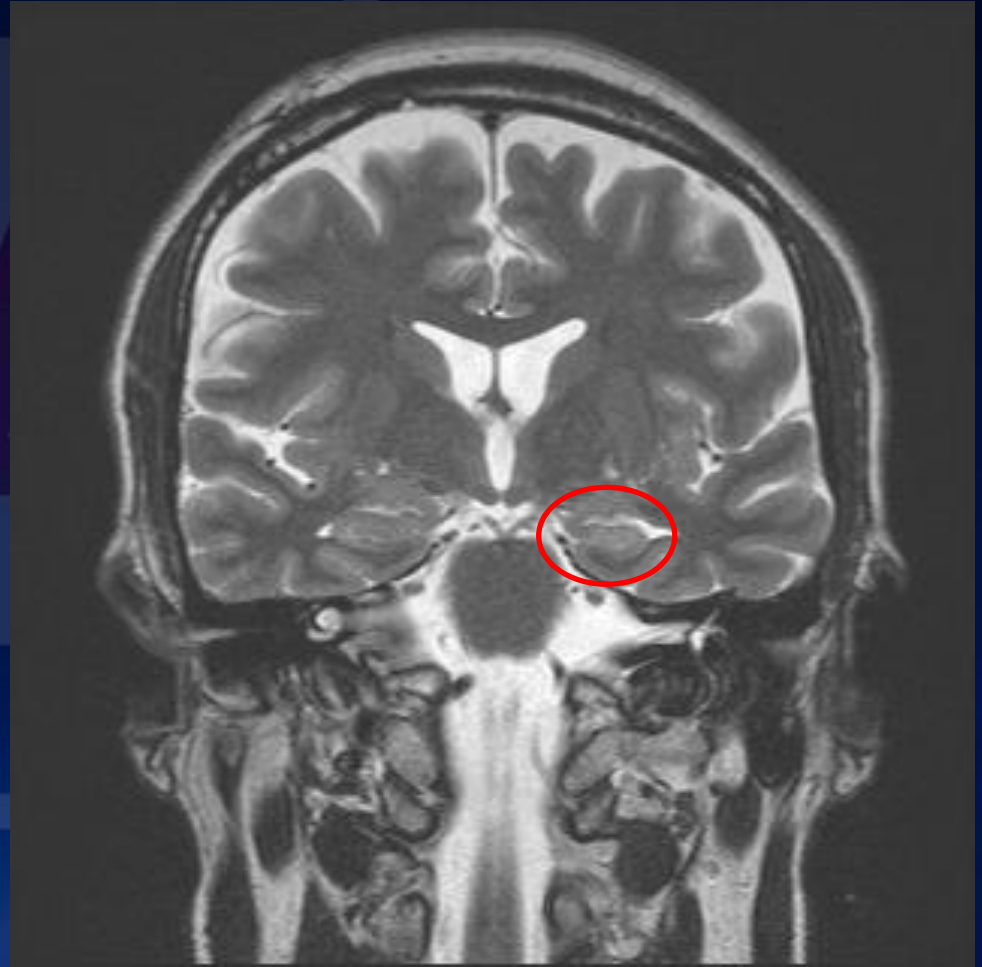
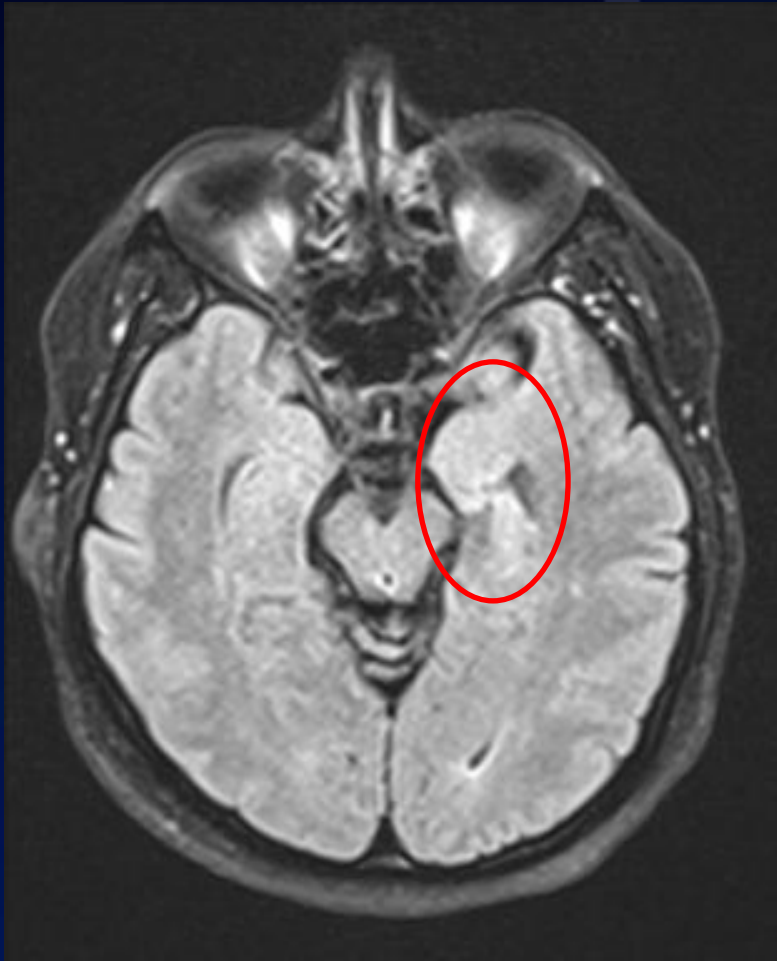
Case 5

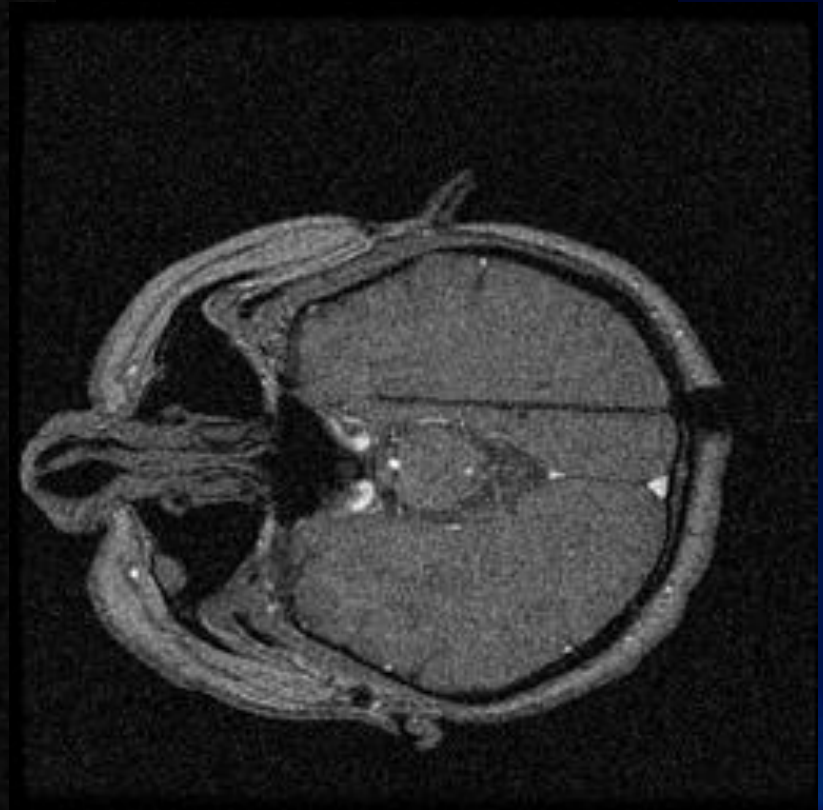
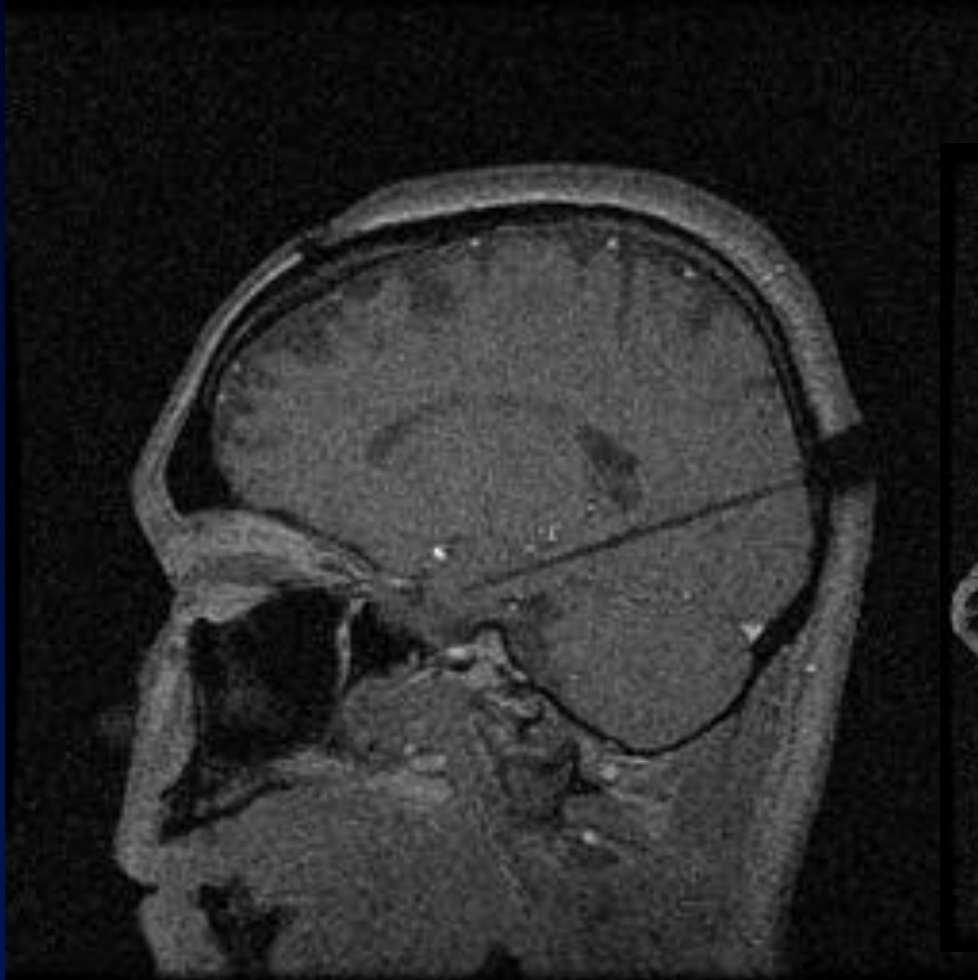
55M with intractable epilepsy

Scalp EEG and EMU recordings suggested left mesial temporal onset.

Neurologically intact.









Epilepsy in Arizona

- Approximately 77,000 Arizonans with Epilepsy
- \$4523 excess yearly medical expenditures/patient
- \$9.5 billion direct medical costs
- \$9.6 billion indirect (informal care costs without loss of productivity and other intangibles)
- Only 42% of patients with Epilepsy are employed
- 12 days missed work
- Estimated yearly per individual productivity loss - \$9504 (DM - \$3358; Depression \$3182)

Arizona Epilepsy

- BUMC-P – 5
- BUMC-T – 2
- BNI – 5 (Phoenix)
- Mayo – 5 (Phoenix)
- PCH – 3 (Phoenix)
- Private – 1 (Phx); 1 (Tucson)
- 0 Flagstaff, 0 Yuma, 0 Lake Havasu

Case 6

63F with 2 weeks of back pain, progressive BLE weakness for 3 days prior

PMH: IVDU, OD, cirrhosis

- Exam:
 - Back pain
 - BLE – HF – 2/5, Q 4/5, DF, PF, EHL 1/5
 - Diminished BLE sensation from knees distal
 - Retained sacral function

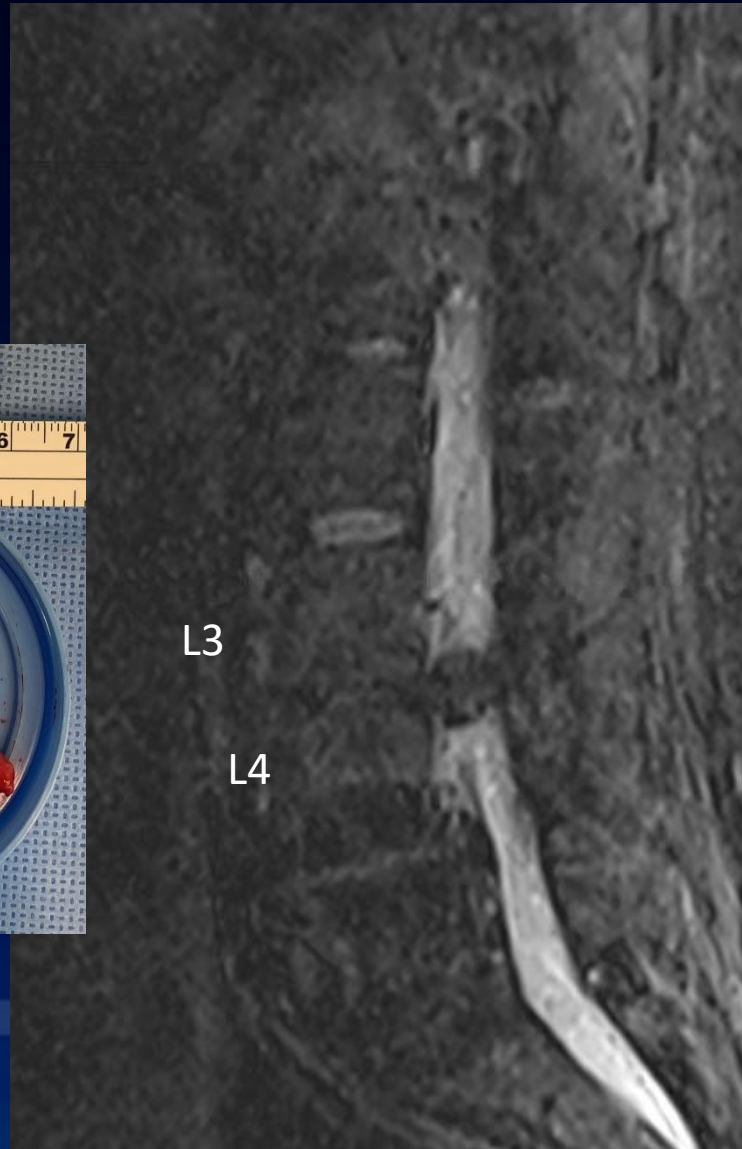


Case 7

42F with back pain and leg pain; worsening progressive BLE weakness, progressing from unilateral to bilateral, loss of bowel/bladder control, BLE numbness after MRI L spine

PMH: asthma, obesity, HTN, PCOS, back pain, smoking

- Exam:
 - Back pain, BLE pain
 - BLE – HF – 4/5, Q 4/5, DF, PF, EHL 0/5
 - Absent sensation LT in plantar and dorsal feet
 - Saddle anesthesia, no rectal tone



L3

L4

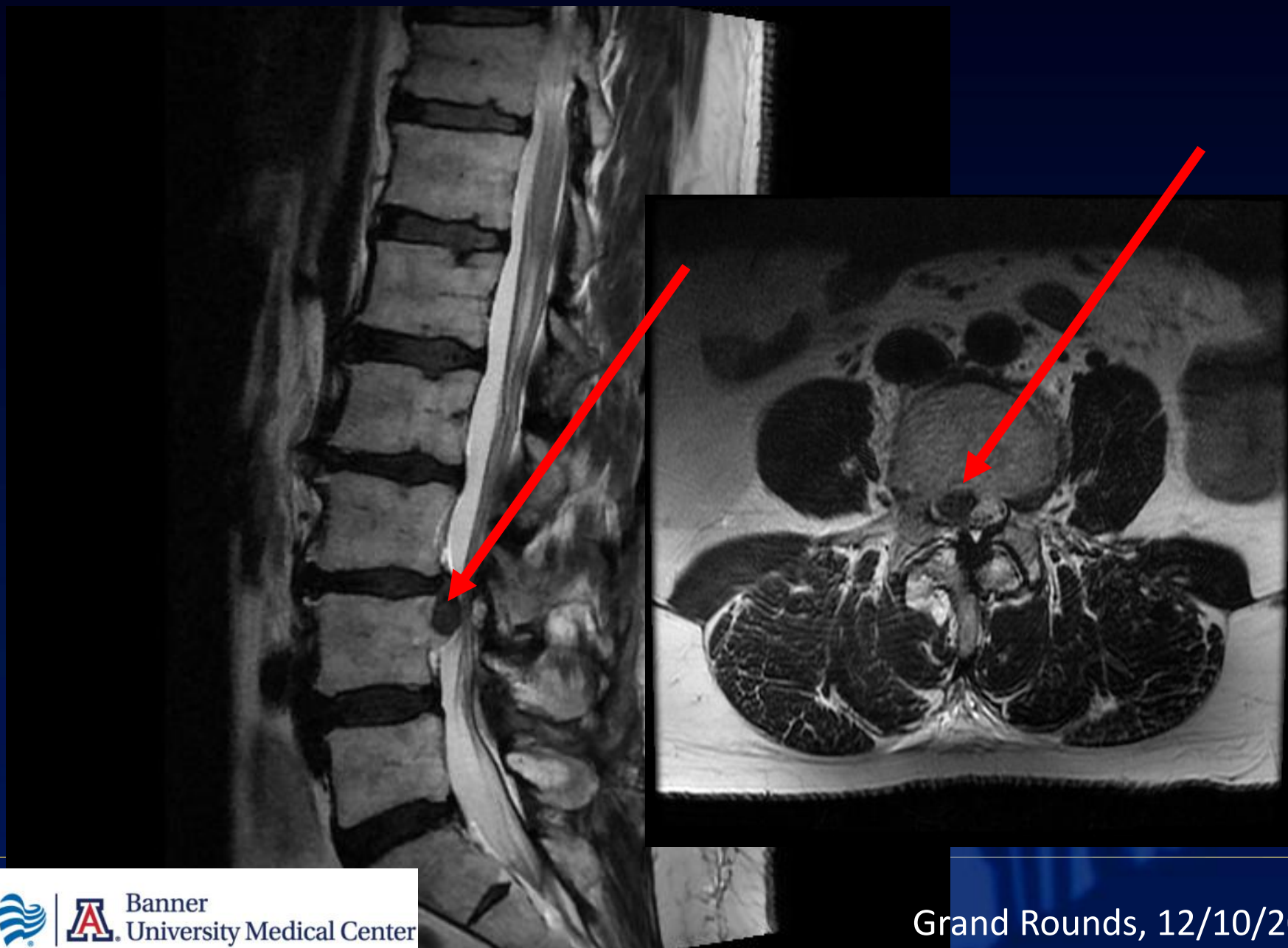
Cauda Equina Syndrome

- Back Pain
- Radiating Leg pain – Bilateral, possibly unilateral
- Weakness – not pain limited
- Saddle Anesthesia
- Urinary Retention, Bowel Incontinence, loss of sexual function
- **ACUTE**

Case 8

56F with right leg pain from the back to medial ankle





Case 9

71M, VA patient, with leg pain/weakness alleviated by rest, when ambulating more than 10 yards. He also has some axial back pain, but his major complaint is leg pain down the back of his legs. 8 years of progression. Reports urinary retention for 5 years, occasional bowel incontinence

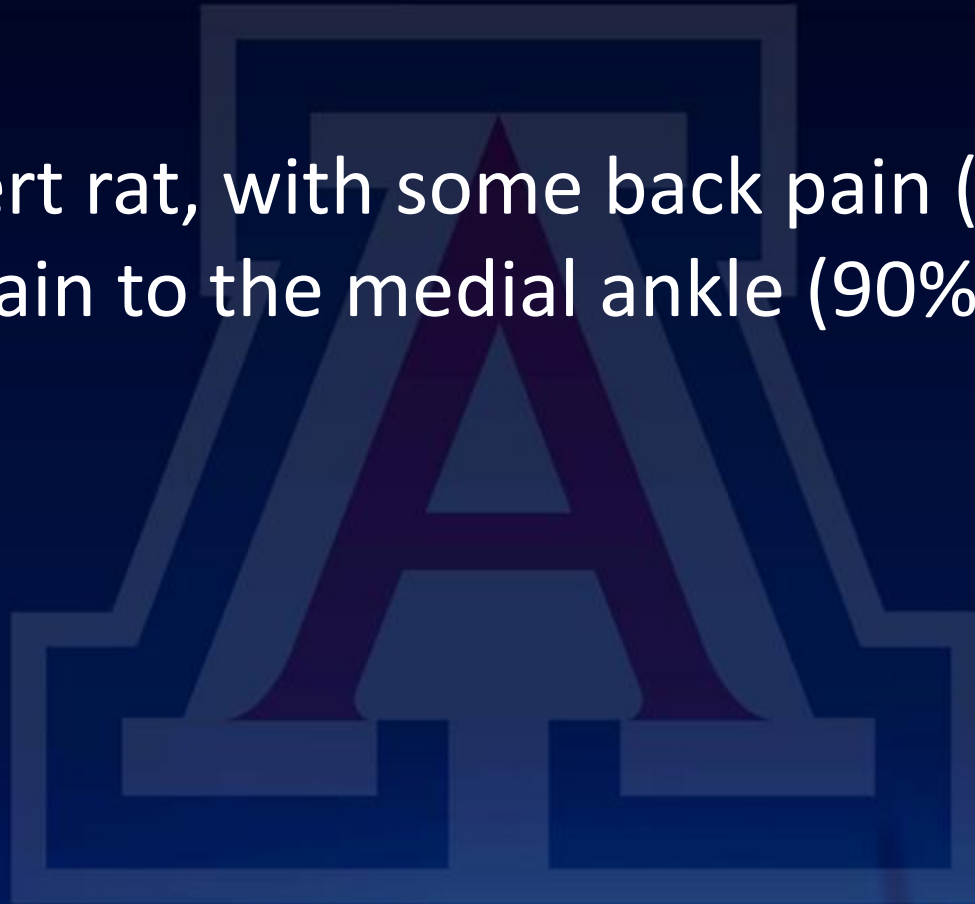
PMH: Smoker, EtOH, CAD, HTN, BPH

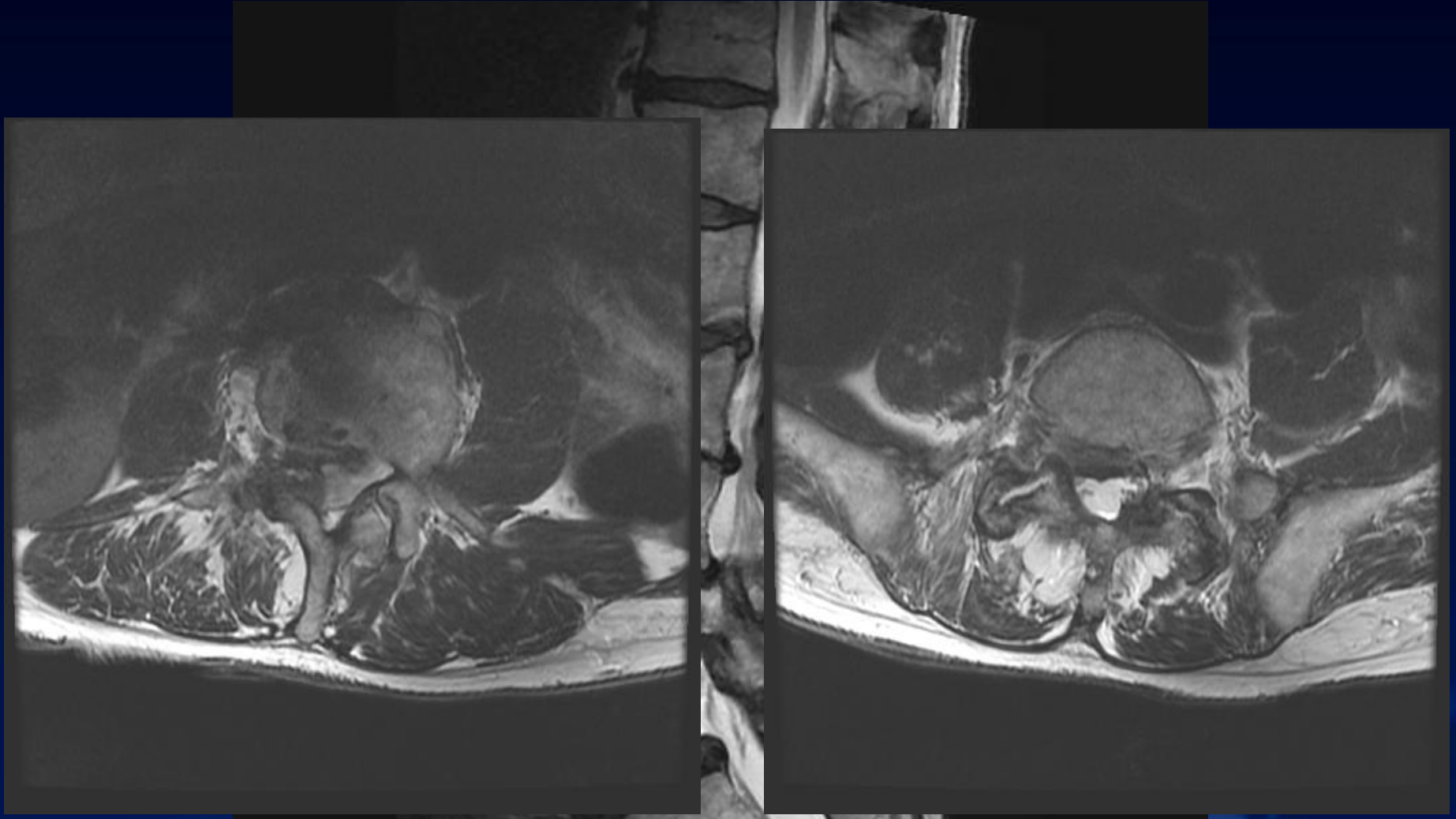
- Exam:
 - Bilateral S1 pain
 - Mild bilateral Plantarflexion weakness, years



Case 8

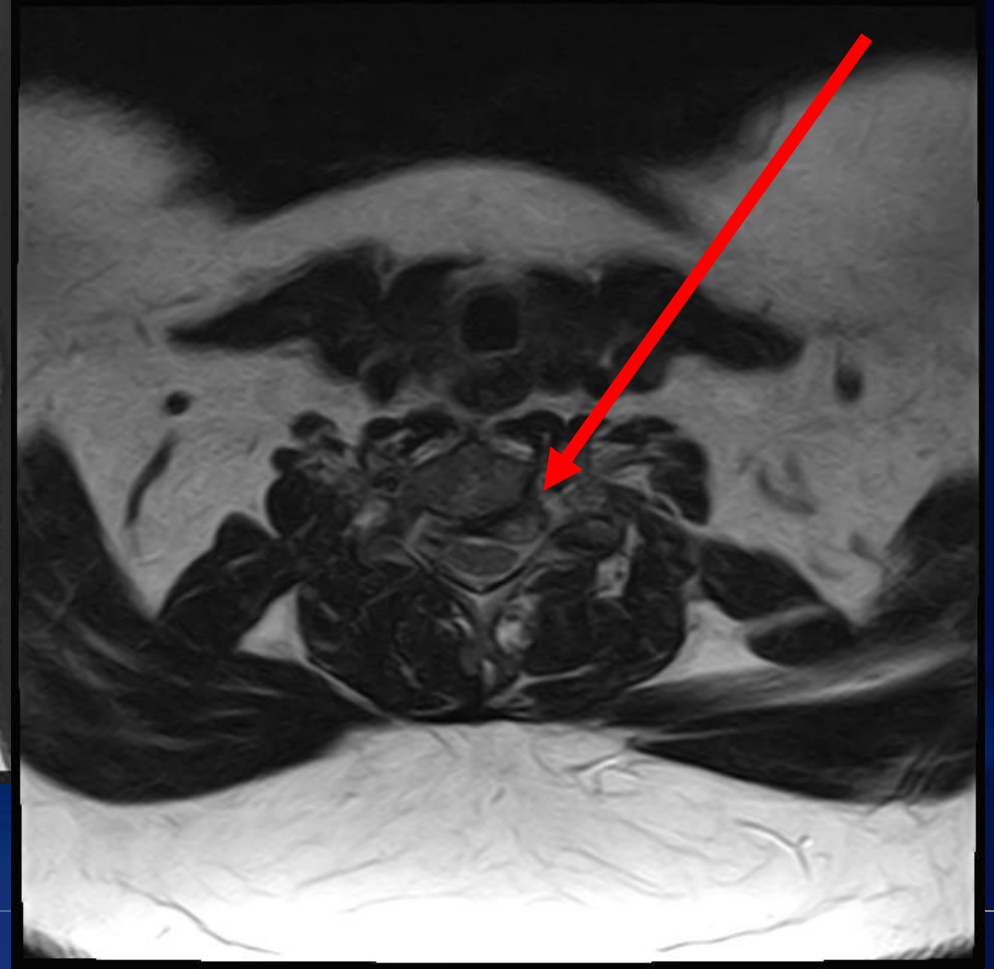
71M, desert rat, with some back pain (10%) and right leg pain to the medial ankle (90%).





Case 9

54F with Left sided pain that starts in the neck and radiates along the back of the arm to the middle finger with some minimal triceps weakness



Anterior Cervical Discectomy and Fusion

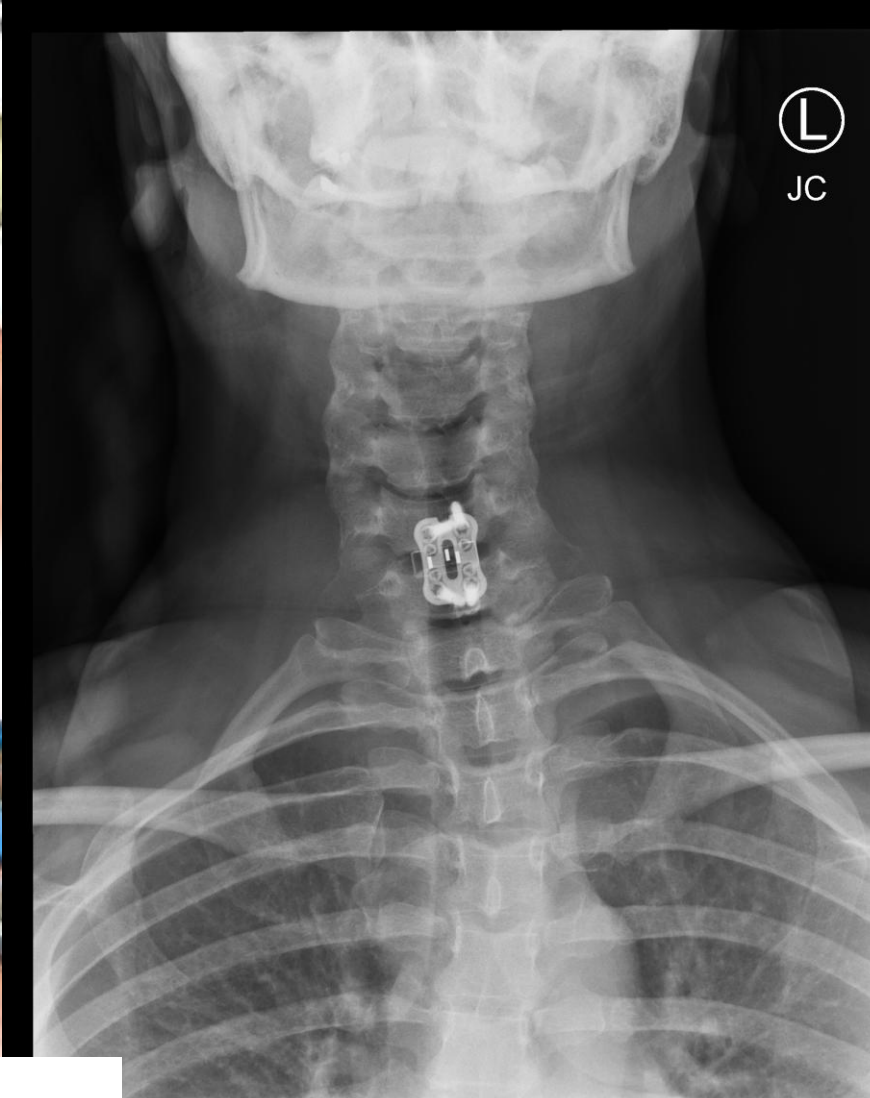
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A. An incision is made in the neck.

B. The C6-7 intervertebral disc is removed.

C. The end plates at C6 and C7 are decorticated.

D. An intervertebral spacer is tapped into place.



Operative Condition



X-RAY OF CERVICAL SPINE



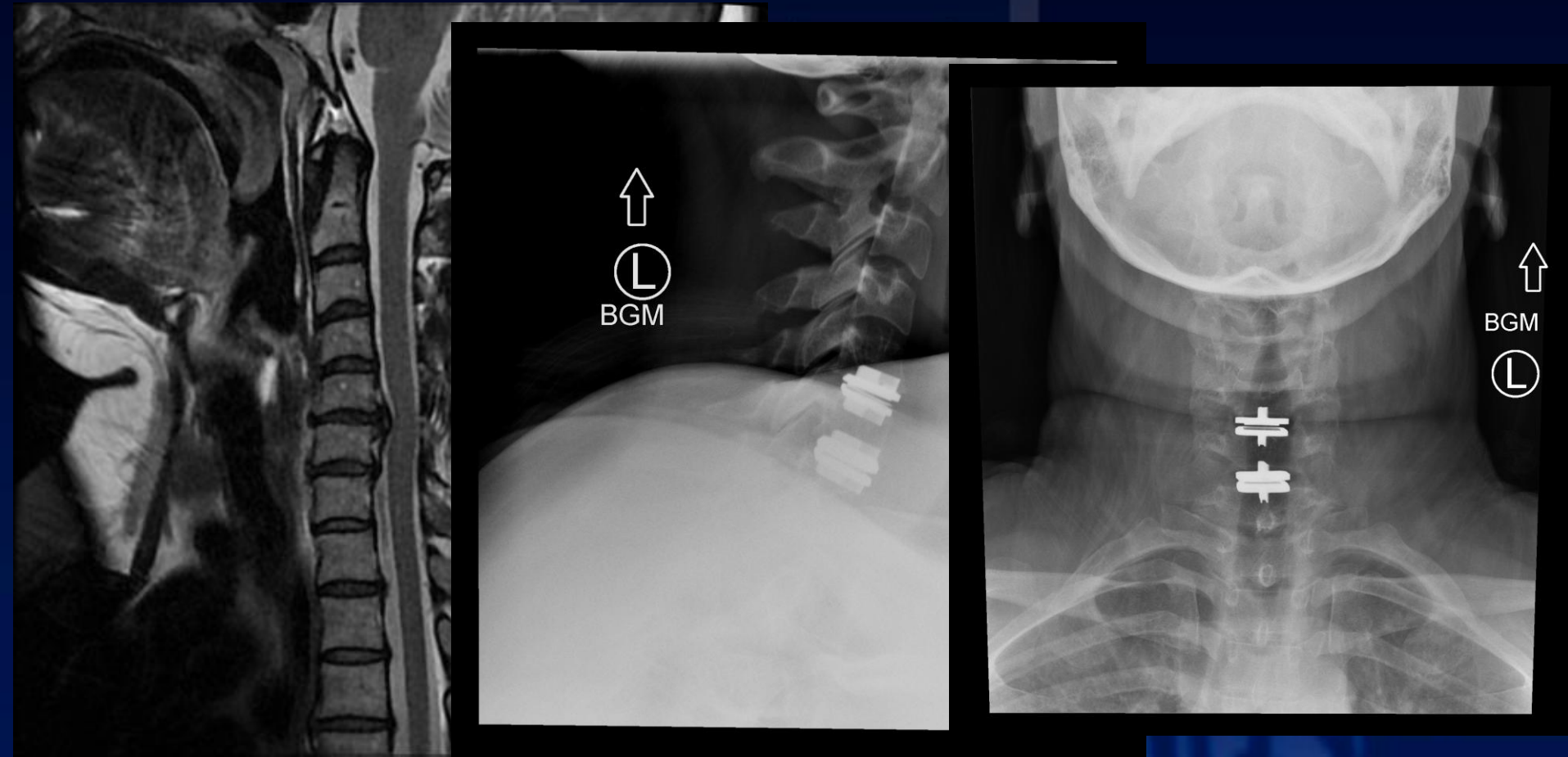
Side view



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Case 10

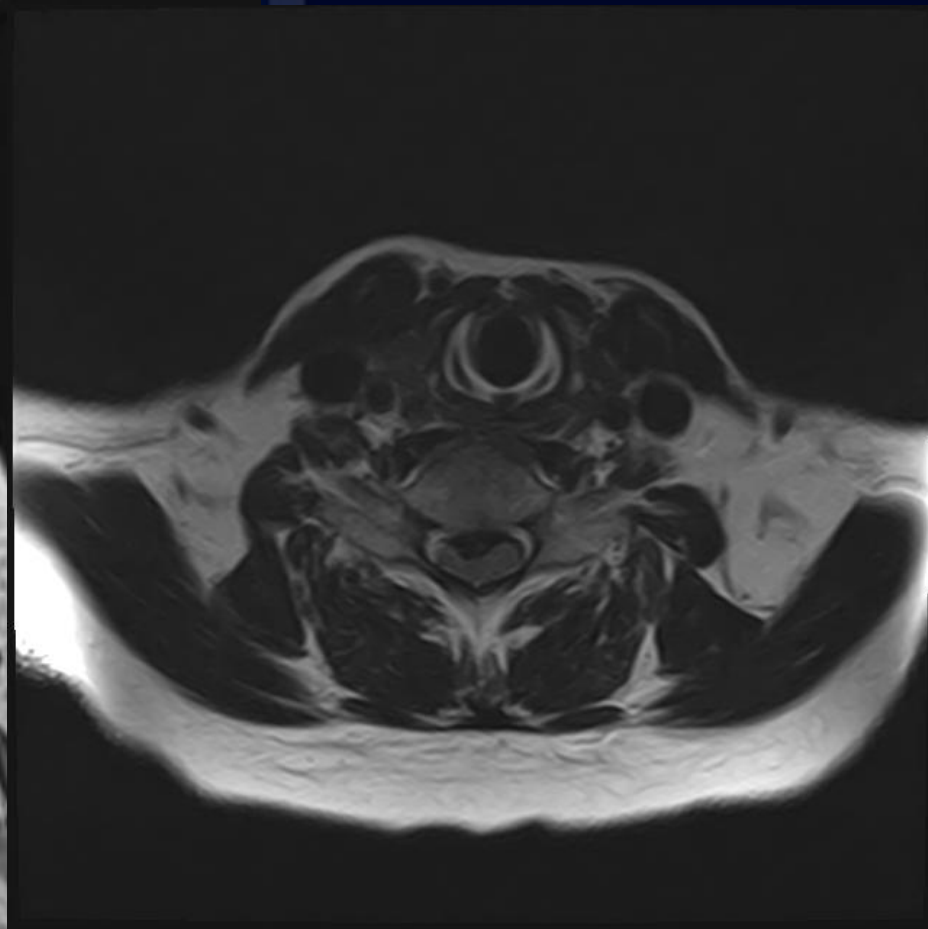


Case 11

56F with Neck pain, 2 months of progressive loss of hand dexterity, gait imbalance, spasticity in her hands, constant bilateral finger paresthesias

PMH: Smoker, HTN

- Exam:
 - 5/5 strength in BUE
 - Hyper-reflexia 4+ in C5, C6, C7, L4, S1 (spreading)
 - Bilateral sustained clonus, Hoffman's
 - Gait imbalance on tandem gait
 - Loss of finger dexterity

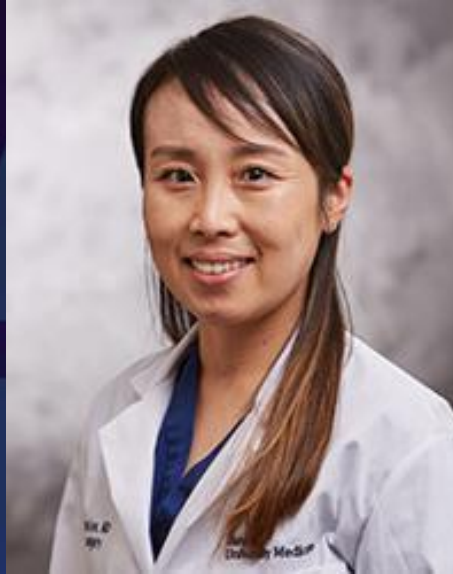




To Do List

- Discuss Common Neurosurgical Conditions encountered by IM
 - Cranial
 - Small Bias towards Epilepsy
 - Spine
- Discuss Common Neurosurgical treatments
- Discuss Initial Workup

BUMC-P Neurosurgery



Thanks for the attention!



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