

SPINAL CORD COMPRESSIONS & SUPERIOR VENA CAVA SYNDROME

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BC Cancer
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DISCLOSURES AND THANK YOUS

No disclosures

Thank you to:

Devin Schellenberg

Paris Ingledew

Don Cooper

People who post things on Google/Wikipedia

SUPERIOR VENA CAVA SYNDROME

What is it?

Why is it an emergency?

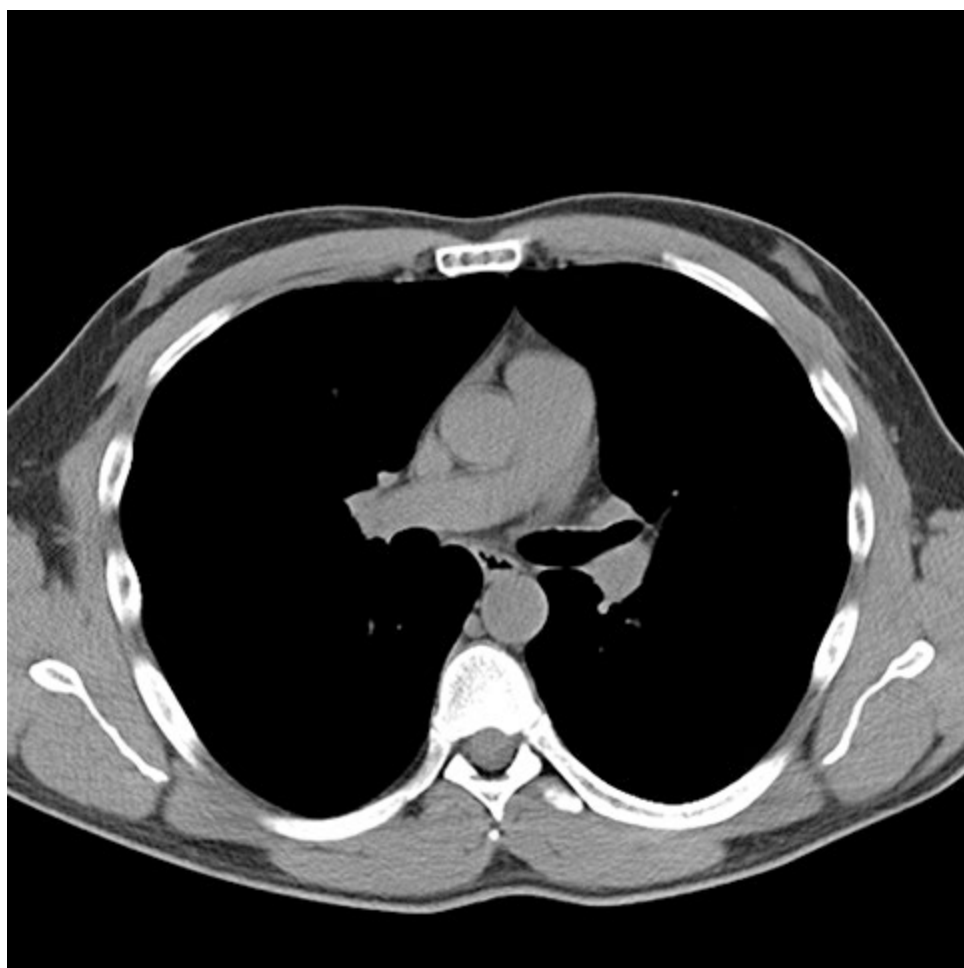
Causes (benign vs malignant, NSCLC vs SCLC)

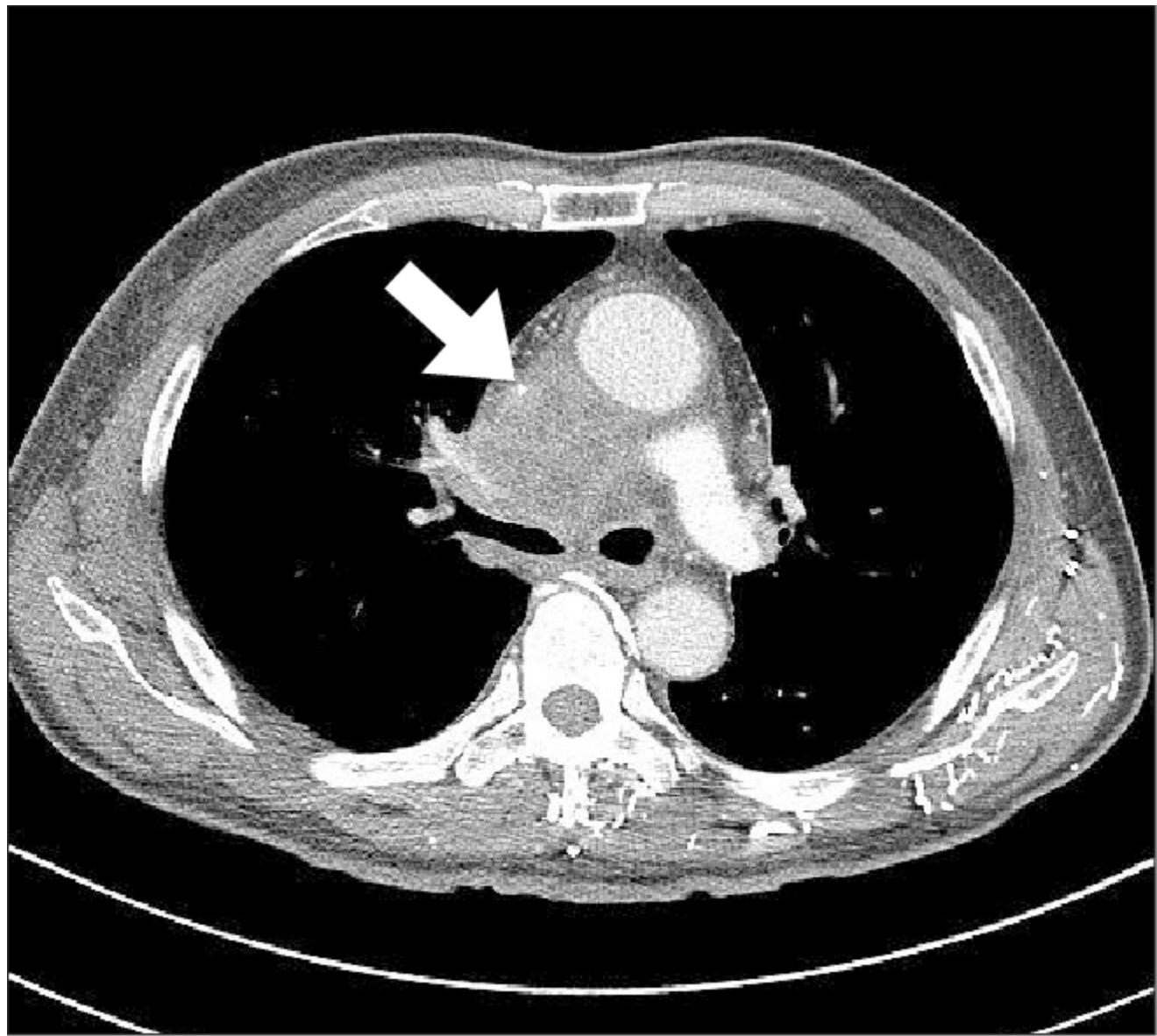
Epidemiology

Clinical Presentation

Work up

Treatment (prognosis)







CAUSES OF SVCS

What's more common? Benign or malignant?

CAUSES OF SVCS

- A) Benign
- B) Malignant
- C) I don't know
- D) I need more time to google this

CAUSES OF SVCS

Malignant causes more common (> 85%)

CAUSES OF SVCS

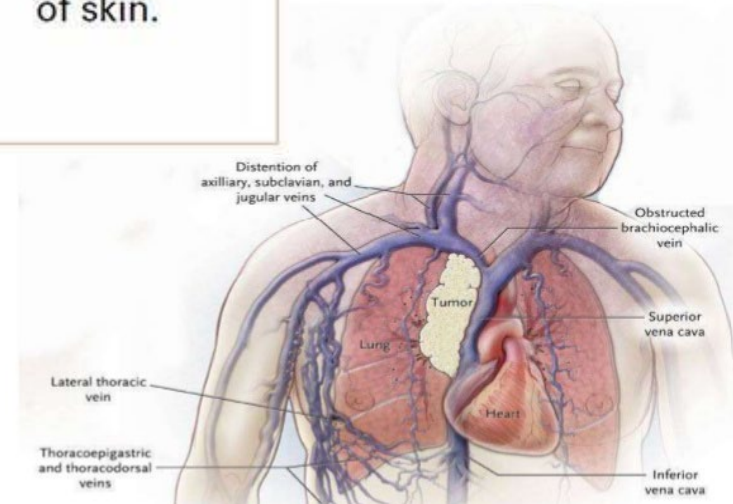
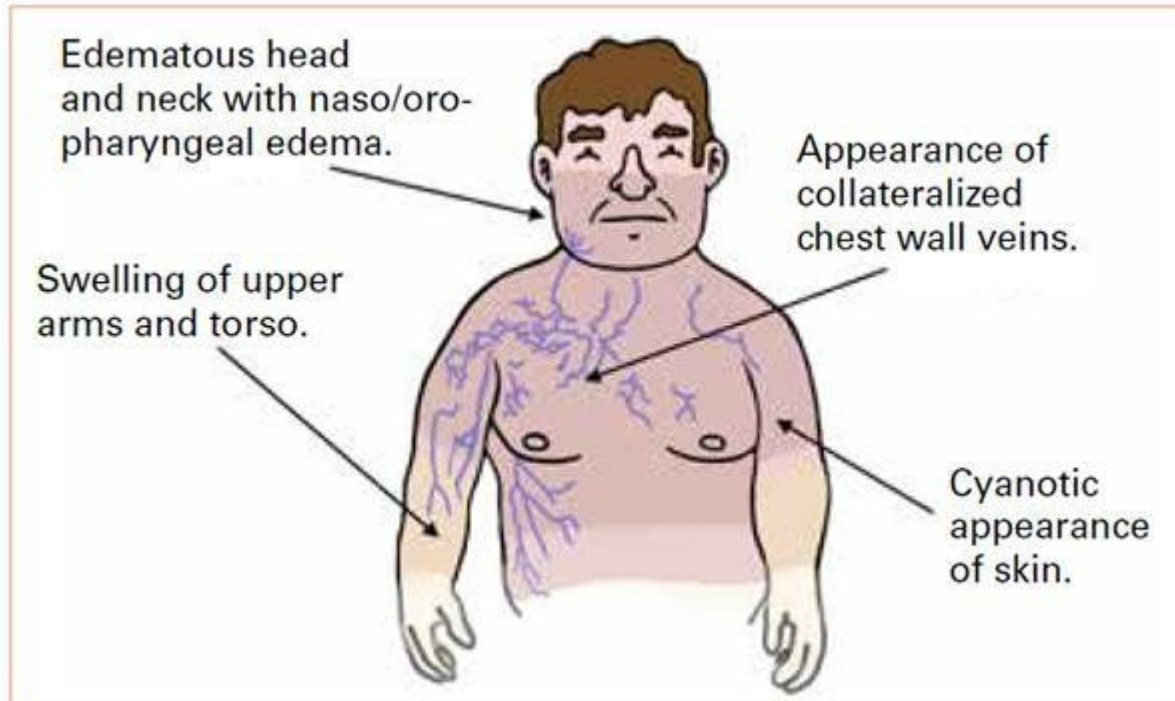
Malignant (>85%)

Lung Cancer (SCLC, NSCLC)
Lymphoma
Breast Cancer mets
Primary mediastinal germ cell tumors
Mesothelioma

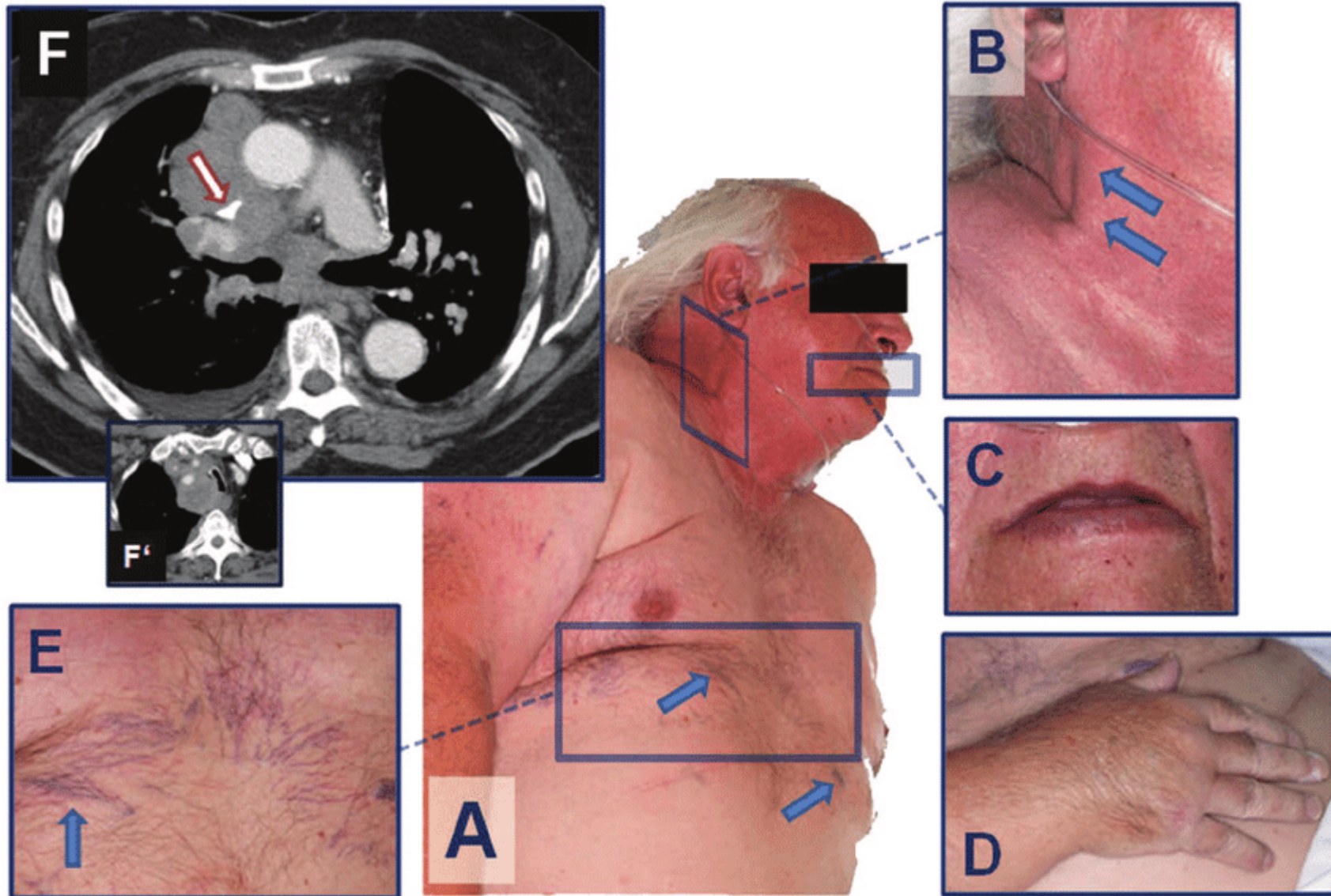
Benign (3 – 15%)

Indwelling catheters
Thymoma
Cystic hygroma
Tuberculosis
Fungal/bacterial pneumonia
Thyroid goiter
Aortic aneurysm
COPD
Cardiac tamponade

SVCS & COLLATERAL BLOOD FLOW



SVCS & collateral blood flow



SIGNS/SYMPTOMS

TABLE 119.1

Common Symptoms and Physical Findings of Superior Vena Cava Syndrome

Symptoms	Patients Affected ^a (%)	Physical Findings	Patients Affected ^a (%)
Dyspnea	63	Venous distention of neck	66
Facial swelling and head fullness	50	Venous distention of chest wall	54
Cough	24	Facial edema	46
Arm swelling	18	Cyanosis	20
Chest pain	15	Plethora of face	19
Dysphagia	9	Edema of arms	14

^a Analysis based on data from 370 patients.

Adapted from Schraufnager DE, Hill R, Leech JA, et al. Superior vena caval obstruction. Is it a medical emergency? *Am J Med* 1981;70:1169–1174. Yellin A, Rosen A, Reichert N, et al. Superior vena cava syndrome. The myth—the facts. *Am Rev Respir Dis* 1990;141:1114–1118; and Rice TW, Rodriguez RM, Light RW. The superior vena cava syndrome: clinical characteristics and evolving etiology. *Medicine (Baltimore)* 2006;85:37–42.

Grading the severity of malignant superior vena cava syndrome

Grade	Findings	Estimated incidence (%)
0	Asymptomatic – Radiographic superior vena cava obstruction in the absence of symptoms	10
1	Mild – Edema in head or neck (vascular distention), cyanosis, plethora	25
2	Moderate – Edema in head or neck with functional impairment (mild dysphagia, cough, mild or moderate impairment of head, jaw, or eyelid movements, visual disturbances caused by ocular edema)	50
3	Severe – Mild or moderate cerebral edema (headache, dizziness), mild/moderate laryngeal edema, or diminished cardiac reserve (syncope after bending)	10
4	Life-threatening – Significant cerebral edema (confusion, obtundation), significant laryngeal edema (stridor), or significant hemodynamic compromise (syncope without precipitating factors, hypotension, renal insufficiency)	5
5	Fatal – Death	<1

Reproduced from: Yu JB, Wilson LD, Detterbeck FC. Superior vena cava syndrome--a proposed classification system and algorithm for management. *J Thorac Oncol* 2008; 3:811. Table used with the permission of Elsevier Inc. All rights reserved.

WORK UP

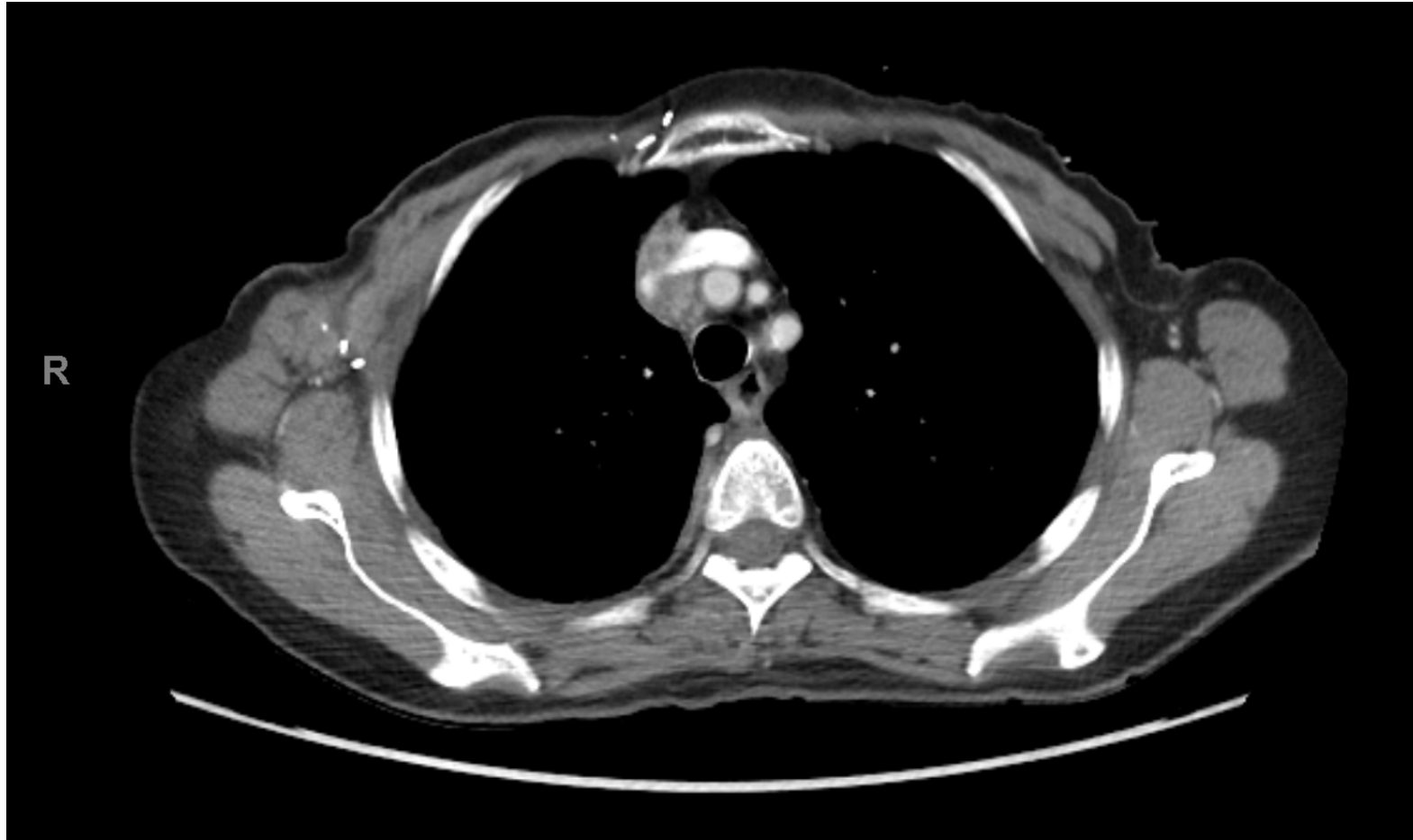
Hx/Phys (known Ca Dx? Hx of central lines?)

CT Chest (mass vs PE vs other)

CXR may show mass or widened mediastinum (16% of patients had normal CXR, Parish et al, 1981)

Bx if not done already for masses

CASE



Patient tolerating chemo well – dz stable, no Sx

CASE

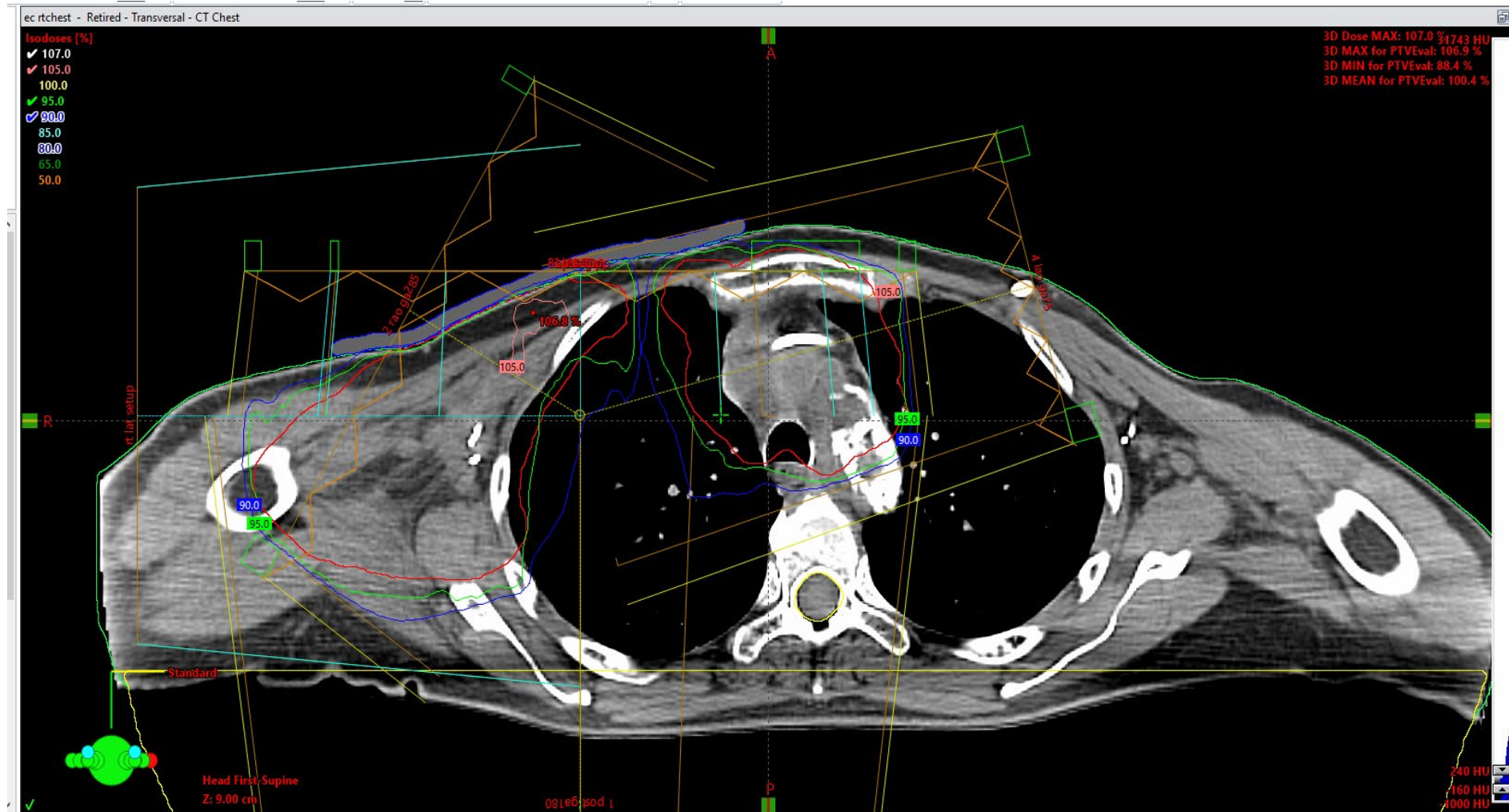


Patient progressing clinically and on imaging – you're the GPO seeing her for follow up, now what?

CASE

- A) Go for coffee
- B) Google pictures of normal vs abnormal CT chest/mediastinal anatomy
- C) start Dexamethasone + PPI
- D) send back to her Medical Oncology for a change in systemic therapy
- E) send to Radiation Oncology for radiotherapy
- F) All of the above
- G) none of the above
- H) some of the above

CASE

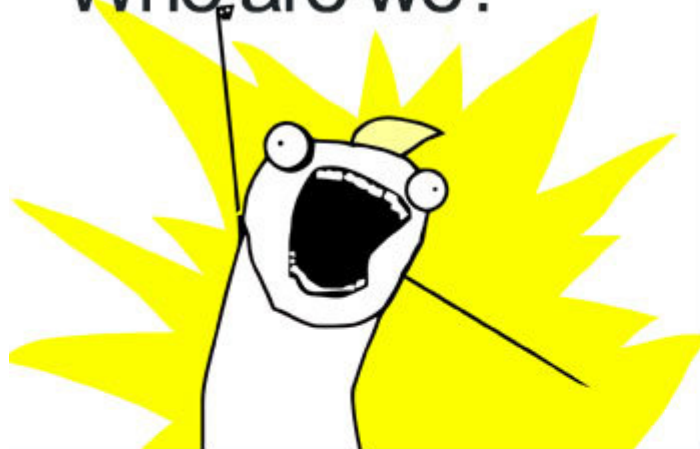


MNGT OF SVCS

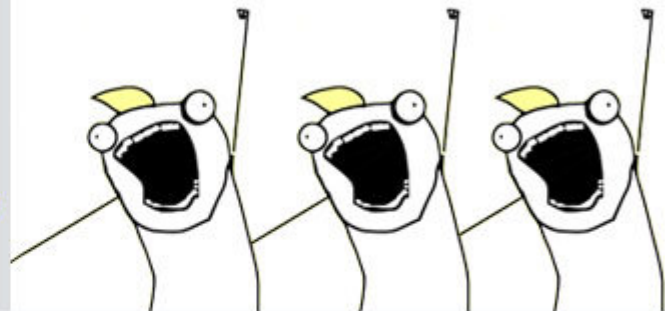
1. Conservative measures (elevate head of bed, O₂)
2. Dex! (ideally after biopsy)
3. Chemo preferred for SCLC, lymphoma
4. RT if NSCLC (palliates Sx in 70% of lung Ca)
5. endovascular stent, Fragmin if clot (rapid Sx relief)
6. Surgical bypass (usually palliative procedure)

Prognosis depends on underlying cause

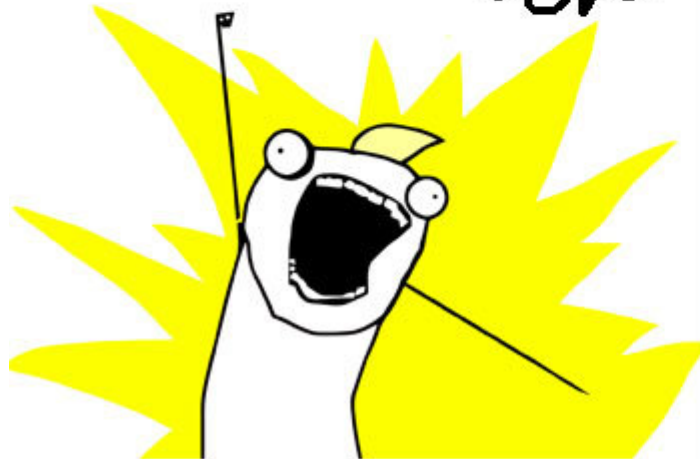
Who are we?



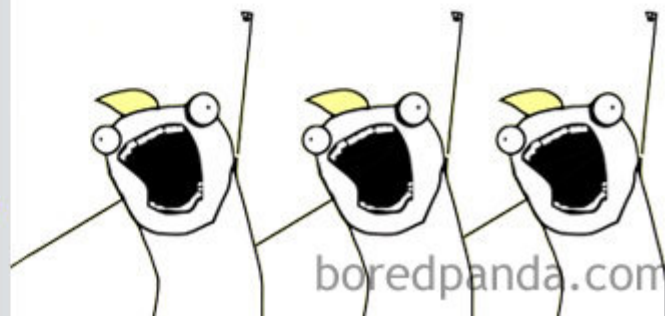
DOCTORS!



our friends



our friends



boredpanda.com

SPINAL CORD COMPRESSION

What is it?

Why is it an emergency?

Causes

Epidemiology

Clinical Presentation

Work up

Treatment

WHERE DO SPINAL CORD COMPRESSIONS OCCUR?



WHERE DO SPINAL CORD COMPRESSIONS OCCUR?

- A) C spine
- B) T spine
- C) L/S spine
- D) No particular pattern to where they occur



WHERE DO SPINAL CORD COMPRESSIONS OCCUR?

C spine:
<10%

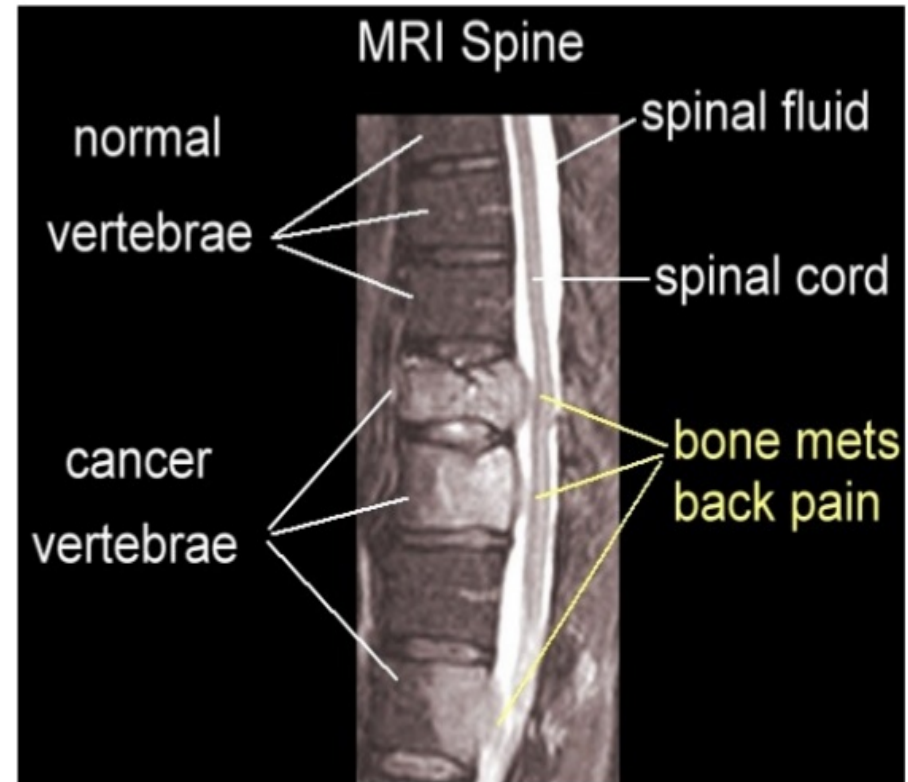
T spine:
60-80%

L/S spine:
15-30%

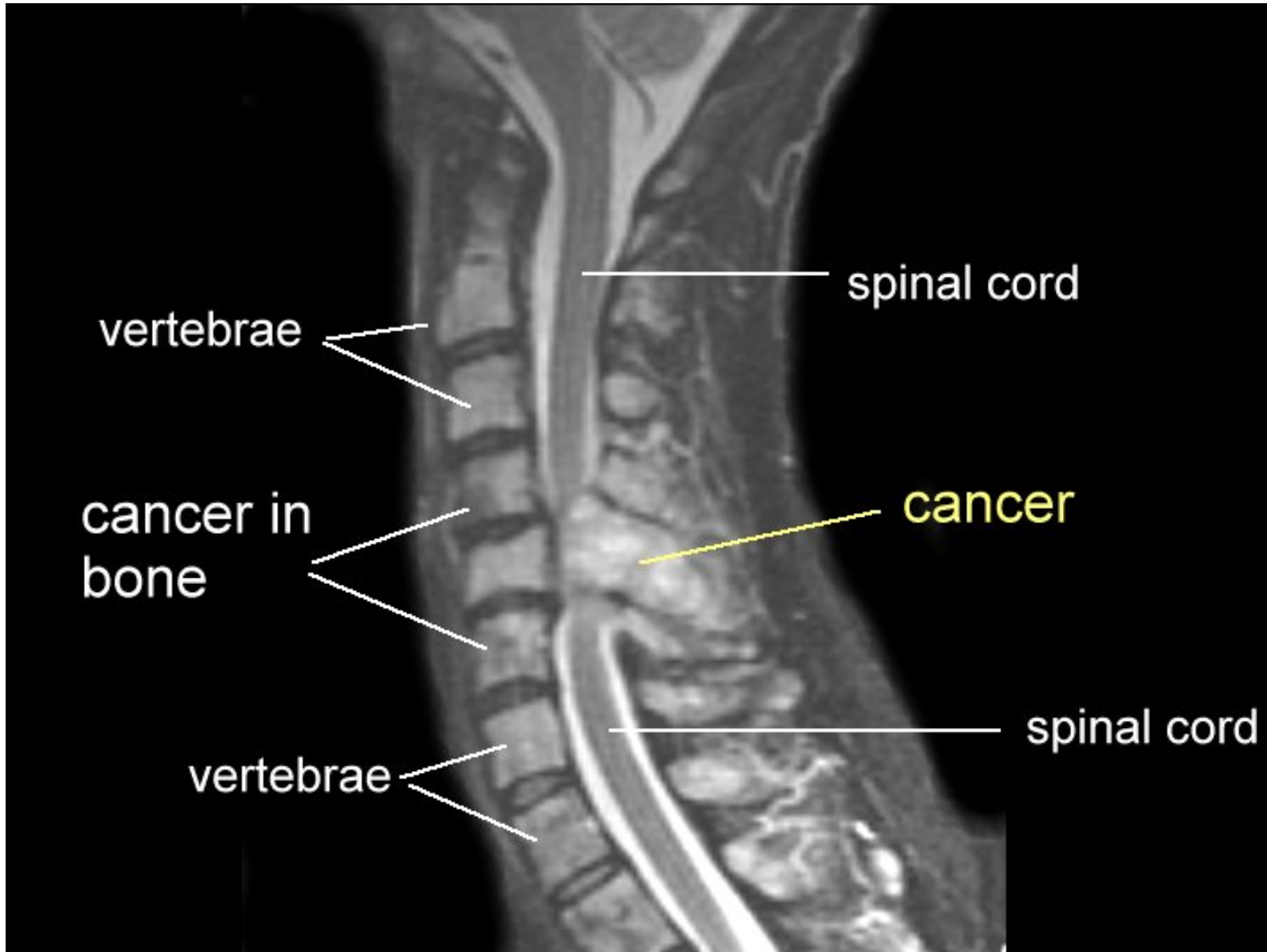


CLINICAL PRESENTATION

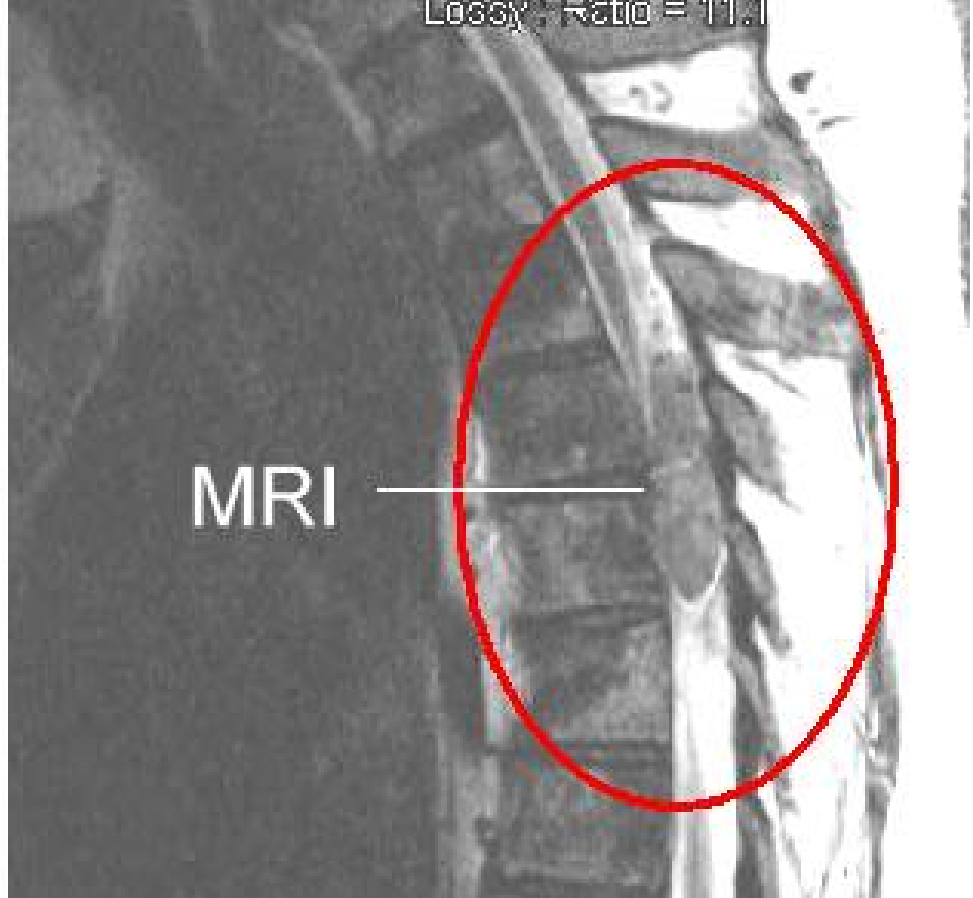
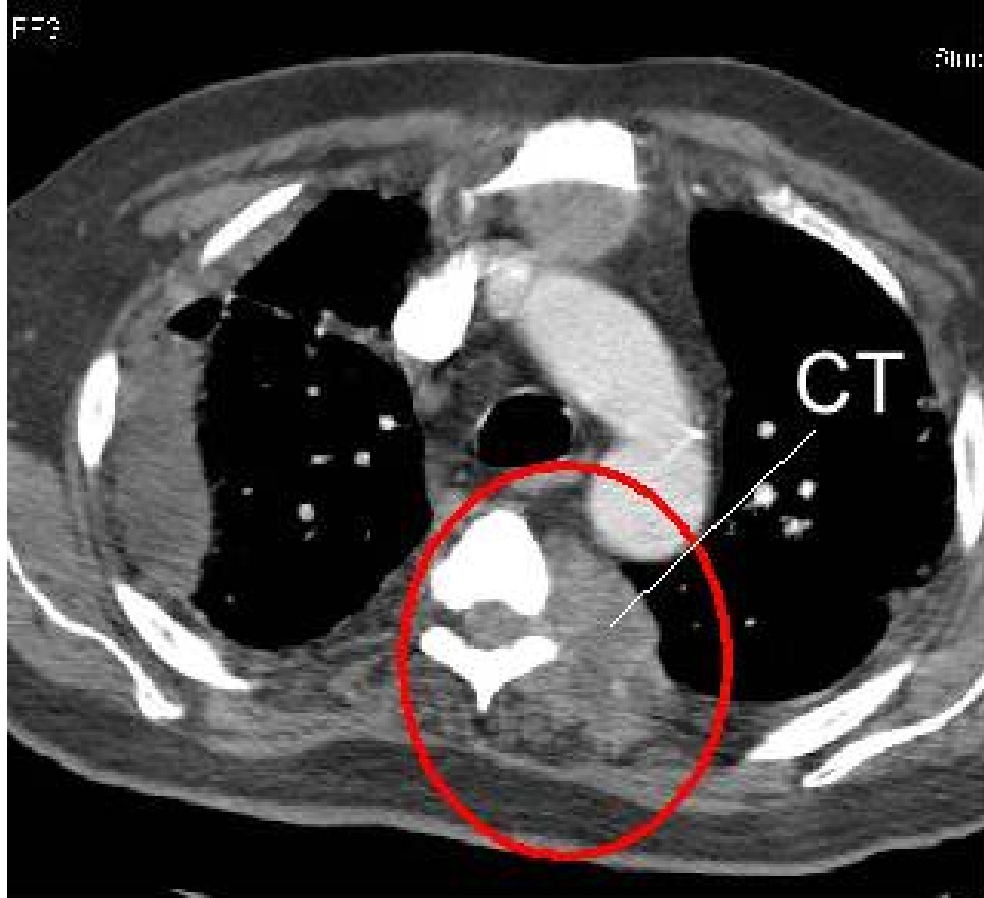
- Pain (earliest, most common Sx)
 - *band of pain, local vs radiates down limb(s)
- Motor weakness (50-65% at Dx)
 - *onset rapidity is variable, can be subacute
- Sensory impairment (usually 1-2 levels below compression)
- Autonomic dysfunction (bladder: urinary retention, loss of control)
(bowel: constipation vs. fecal incontinence)











MANAGEMENT

- A) Dexamethasone?
- B) Surgery?
- C) RT?
- D) Surgery + RT?
- E) all of the above
- F) none of the above

MANAGEMENT

Dex + PPI (no evidence for > 16 mg/day)

Surgery

Radiotherapy

Surgery + postop RT

GOOD VS POOR PROGNOSIS?

Good Prognosis

- Chemo/RT sensitive tumor
- Early detection of tumor
- Gradual/slow onset of tumor
- Sx < 24 hrs
- Patient still ambulating
- Good ECOG
- Vertebrae intact

Poor Prognosis

- Tumor not sensitive to Chemo/RT
- Sx > 24 hrs or late detection
- Patient not ambulating
- Poor ECOG/ PPS
- Vertebral collapse
- Autonomic dysfunction
- Rapid loss of function

When a nurse takes up gardening



CASE

58F with back pain, describes it as a “tight band around the middle of my chest that’s really painful”

No neuro Sx

Hx of breast cancer

What to do next?

CASE

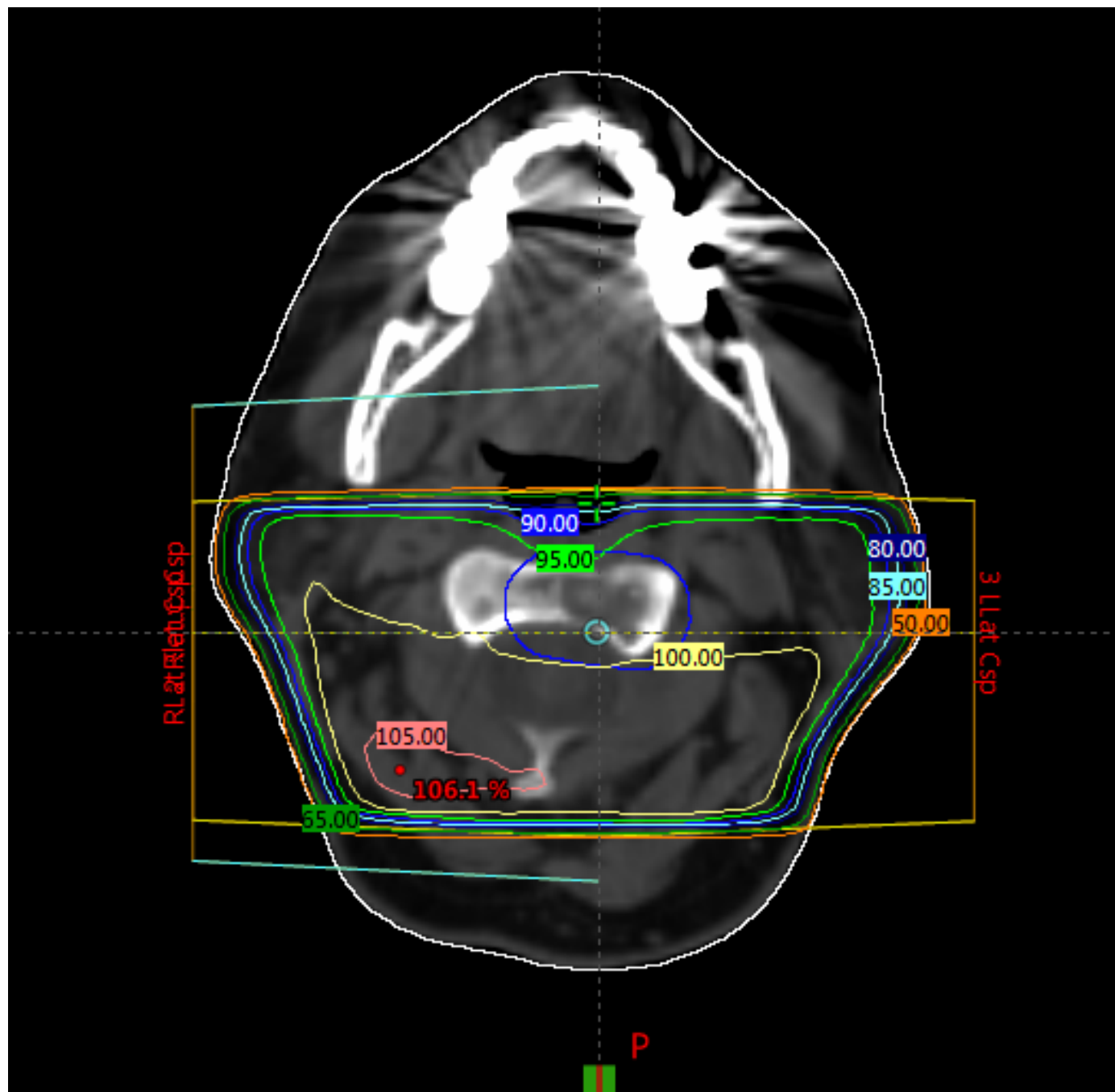
What to do next?

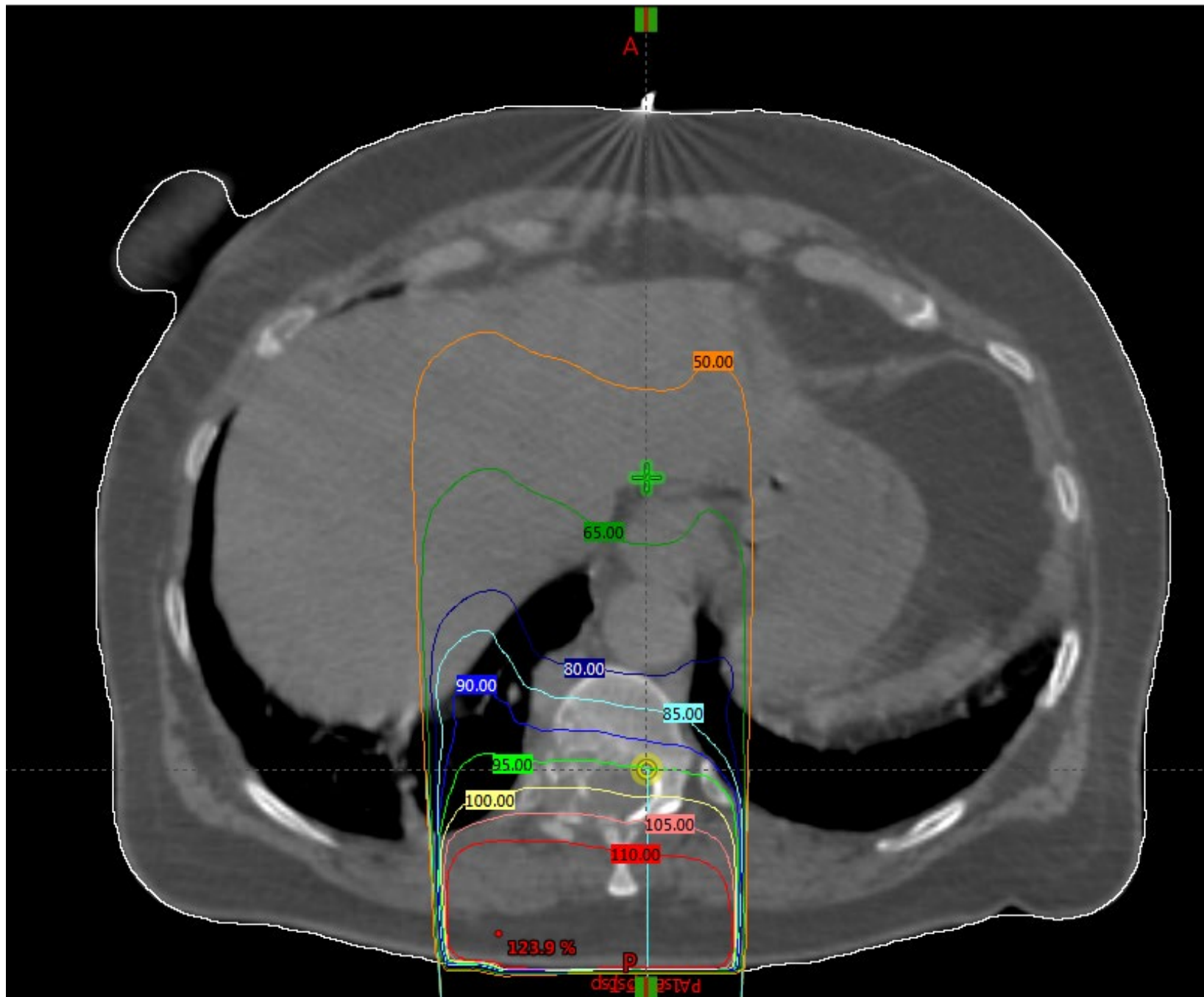
- A) switch specialties
- B) order a CT
- C) order a MRI
- D) start patient on Dex
- E) tell her it's probably fine
- F) panic
- G) some of the above
- H) none of the above

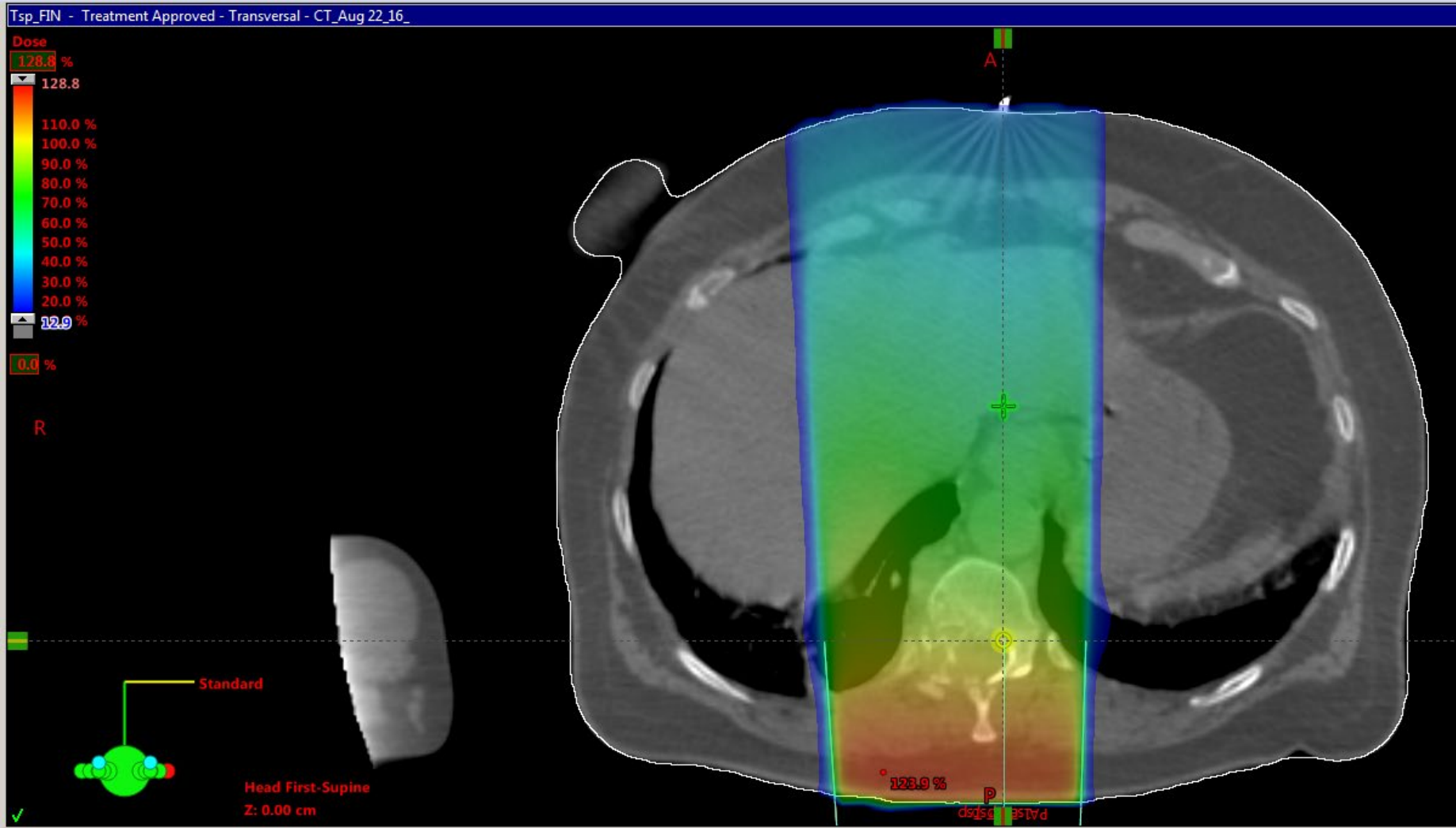
CASE

CT showed lytic lesions in multiple levels, including C2, T9 with ?cord compression and definite compression at T12

Tx = Dex (started in clinic), RT







CASE

64 YO with Hx of metastatic prostate Ca based on PSA, patient refused Bx

Sometime later, presented to hospital with pain crisis

Also c/o generalized weakness, episodic pins & needles in the hands/legs (improved on Dex)

Started on Methadone, Ketamine via CADD pump, Hydromorph breakthroughs for pain

Started on high dose Dex + PPI after MR



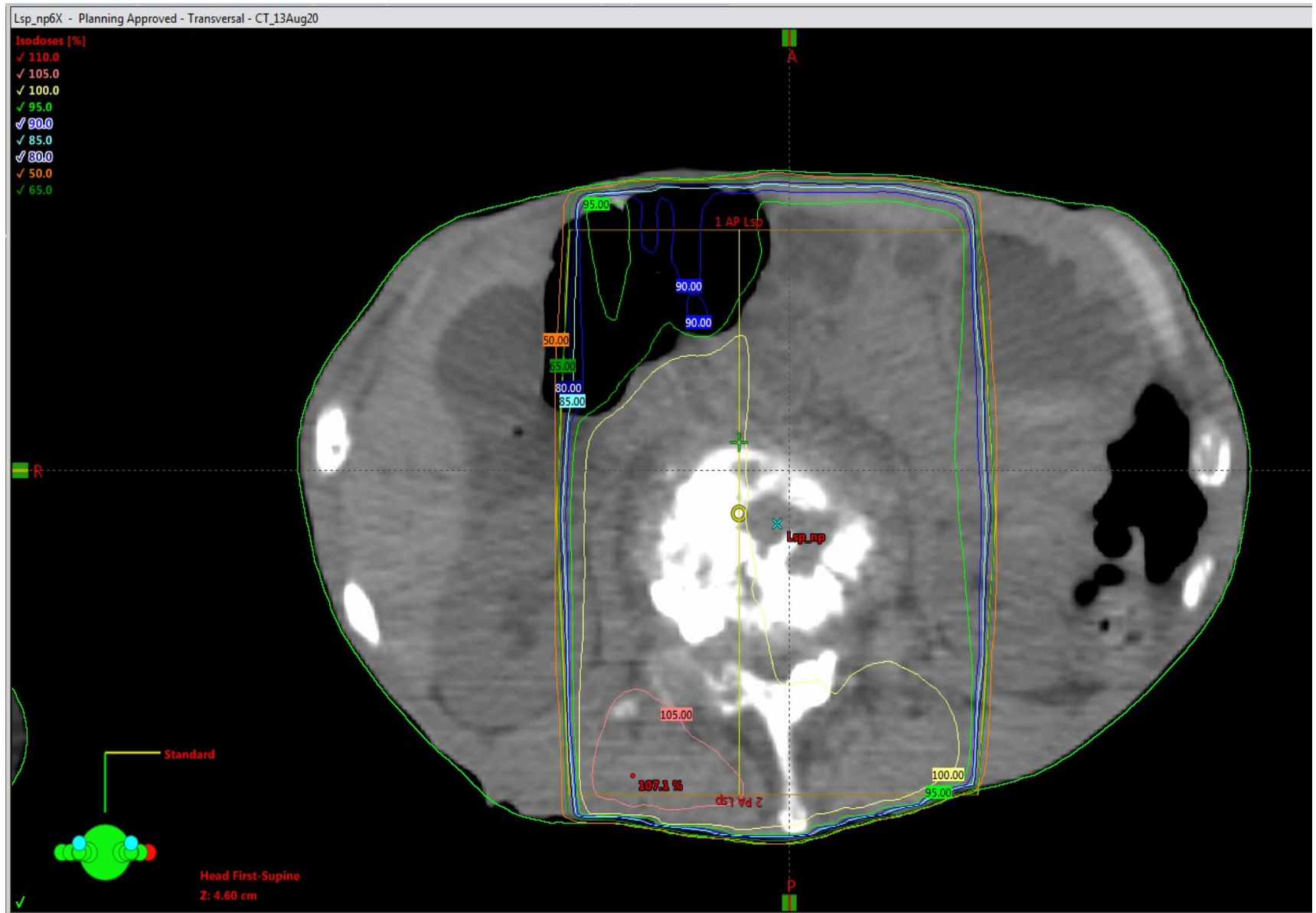
Spot the
bony
abnormality



CASE



CASE



CASE

55 YO man with increasing back pain, low leg weakness for a “while”

Noted in ER to have 3-4 minus of 5 weakness clinically, not ambulatory, hyperreflexic and some spasticity

Sign	UMN Lesion	LMN Lesion
Weakness	Yes	Yes
Atrophy	No	Yes
Fasciculations	No	Yes
Reflexes	Increased	Decreased
Tone	Increased	Decreased

CASE

You're the GP working in ER who sees this gentleman - What next?

A) have a resident see it ("great learning opportunity")

B) order imaging (CT, MRI)

C) start Dex + PPI

D) consult NeuroSurgery

E) consult Radiation Oncology

F) retire

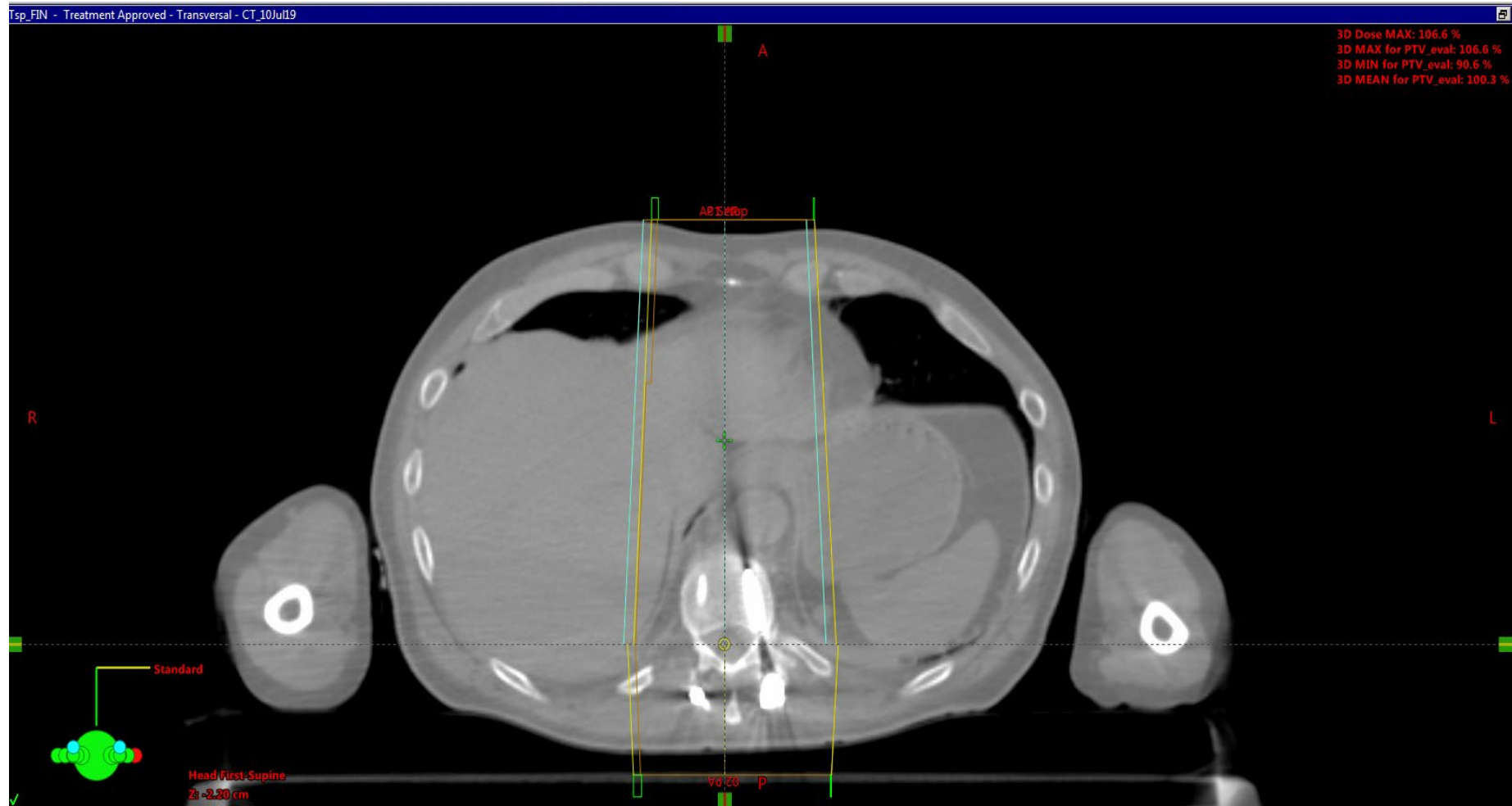
G) some of the above

H) none of the above

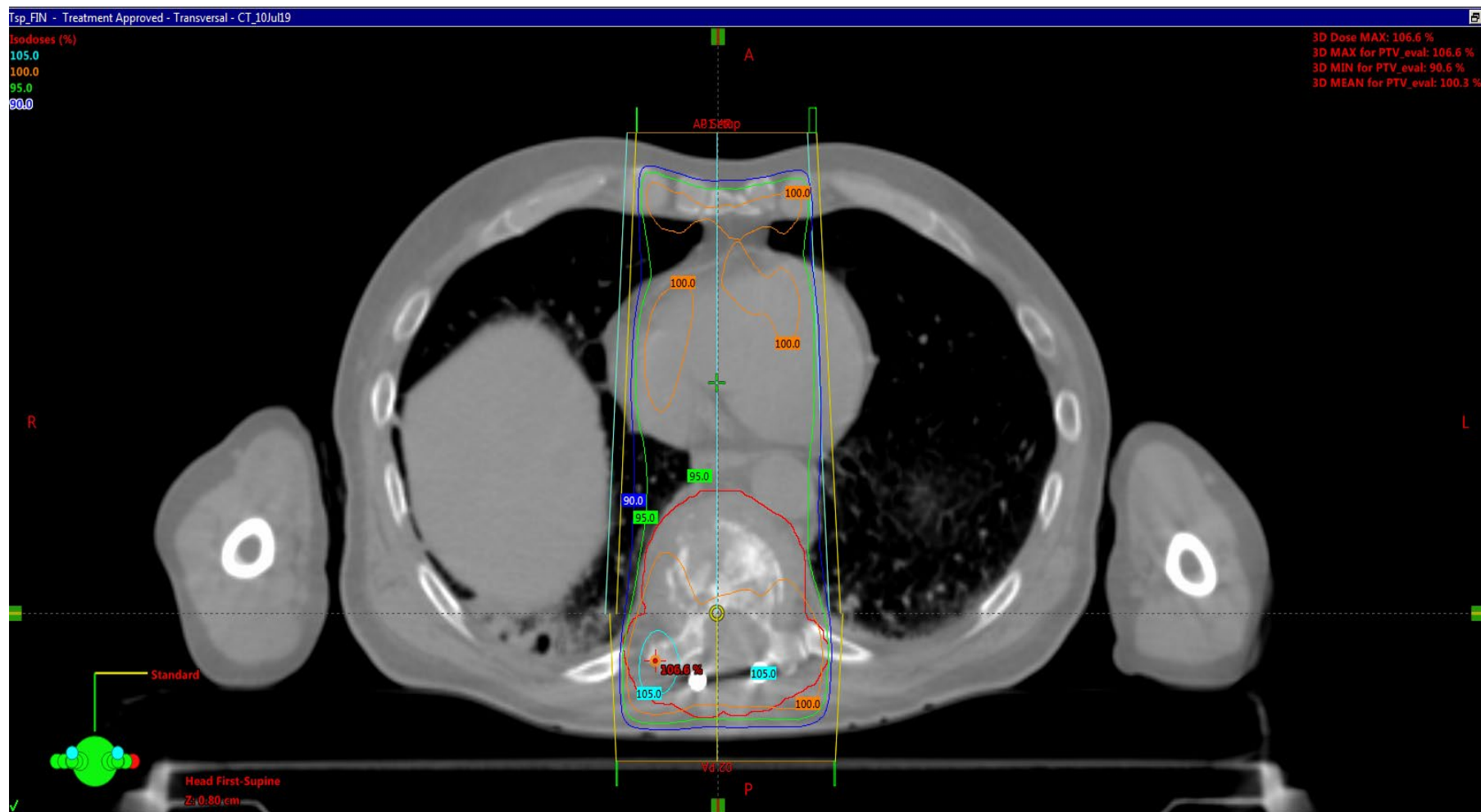
CASE



CASE



CASE



PLEASE

**DON'T THROW
YOUR CIGARETTE ENDS
ON THE FLOOR
THE COCKROACHES
ARE GETTING CANCER**

www.getreferralmd.com

CONCLUSION

Not all emergencies are equal (Ex. SVCS can be mild)

Spinal cord compressions often present first with pain, neuro Sx usually come later

Imaging!

Dex (but be aware if no tissue biopsy)

QUESTIONS?



"Mr. Osborne, may I be excused? My brain is full."

John Hopkins Medicine. “What is spinal cord compression?”.

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/spinal-cord-compression> (accessed July 15, 2019)

Canadian Cancer Society. “Spinal cord compression?”

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