

Bright Lights, Big City

Case Files from a Level 1 Trauma Center

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Mount Sinai Health System



Financial Disclosures

- 📌 Sadly none
- 📌 Not even McEvoy will give me money

Objectives

- 📌 Discuss current prehospital trauma care using case based presentations
- 📌 Interactive, audience participation required.
- 📌 Cutting edge care - what we should be doing now and in the next 2 years not 10 years ago
- 📌 insight into hospital management

Case 1

Car vs. Motorcycle



32 y/o male struck by SUV

- Patient is motorcyclist getting off bike at side of road and is struck by SUV and run over by front tire.
- VS BP 126/71 HR 156 RR18 Spo2 97%
- Patient is awake, yelling in pain on arrival

What do you want to do?

- 📌 You are first on scene
 - 📌 What are your priorities on arrival?
 - 📌 what information do you want?
 - 📌 What do you want to do?
 - 📌 Should we call for ALS?

HPI

- 📌 Patient states can't recall what happened but thinks he was run over by car which bystanders confirm
- 📌 Patient complains of severe back pain, chest pain and SOB.
- 📌 States can't feel his legs

EMS Care

- 📌 What's your plan?
- 📌 What treatment? on-scene, en-route
- 📌 Where are you going?
- 📌 Ok, call it in

Adult Major Trauma (Including Traumatic Cardiac Arrest)

Note:

Request Advanced Life Support if available.
Consider Air Medical Transport per regional protocol.
Do not delay transport to the appropriate hospital.

For the purpose of this protocol, major trauma is present if the patient's physical findings or the mechanism of injury meets any one of the following criteria:

PHYSICAL FINDINGS

1. Glasgow Coma Scale is less than or equal to 13
2. Respiratory rate is less than 10 or more than 29 breaths per minute
3. Pulse rate is less than 50 or more than 120 beats per minute
4. Systolic blood pressure is less than 90 mmHg
5. Penetrating injuries to head, neck, torso or proximal extremities
6. Two or more suspected proximal long bone fractures
7. Suspected flail chest
8. Suspected spinal cord injury or limb paralysis
9. Amputation (except digits)
10. Suspected pelvic fracture
11. Open or depressed skull fracture

MECHANISM OF INJURY

1. Ejection or partial ejection from an automobile
2. Death in the same passenger compartment
3. Extrication time in excess of 20 minutes
4. Vehicle collision resulting in 12 inches of intrusion in to the passenger compartment
5. Motorcycle crash >20 MPH or with separation of rider from motorcycle
6. Falls from greater than 20 feet
7. Vehicle rollover (90 degree vehicle rotation or more) with unrestrained passenger
8. Vehicle vs pedestrian or bicycle collision above 5 MPH

HIGH RISK PATIENTS

If a patient does not meet the above criteria for Major Trauma, but has sustained an injury and has one or more of the following criteria, they are considered a "High Risk Patient". Consider transportation to a Trauma Center.

Consider contacting medical control.

1. Bleeding disorders or patients who are on anticoagulant medications
2. Cardiac disease and/or respiratory disease
3. Insulin dependent diabetes, cirrhosis, or morbid obesity
4. Immunosuppressed patients (HIV disease, transplant patients and patients on chemotherapy treatment)
5. Age >55

On ED arrival

- Arrived via ALS / BLS fully immobilized
- NRBFM at 151pm
- 18g Left AC
- Vitals as prior

Level 1 Trauma Team

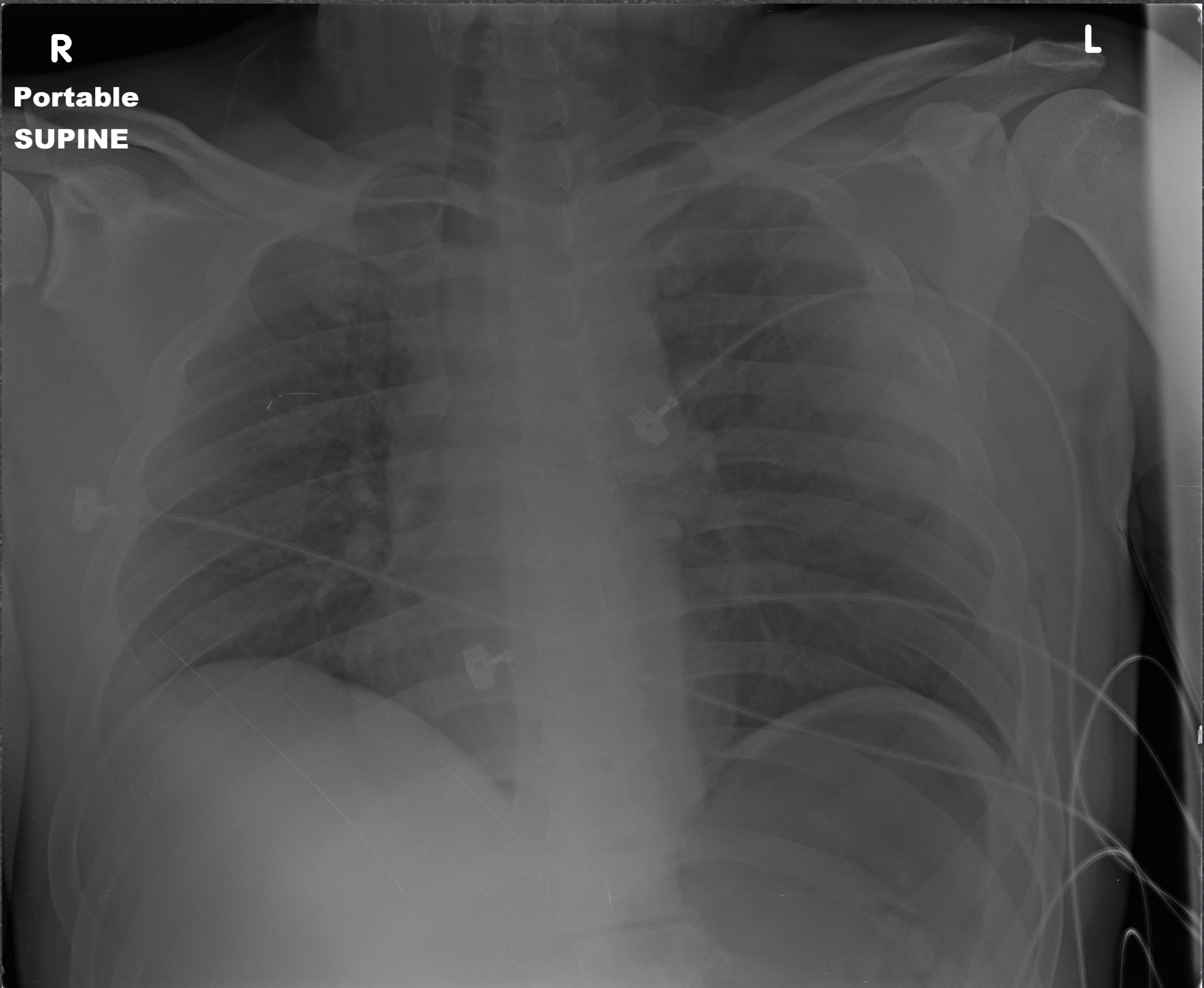
- 📌 ED attending
- 📌 Trauma Surgery Attending
- 📌 3 EM residents
- 📌 4 Surgery Residents
- 📌 3 nurses
- 📌 Ancillary staff

Trauma Room



Now you're the Doctor

- 📌 What do you want to do?
 - 📌 What tests?
 - 📌 What treatments?
 - 📌 What's your dispo? OR, SICU, or Floor?



R

Portable
SUPINE

L









Injuries

- 📌 Aortic Root tear
- 📌 T11 fracture with cord injury
- 📌 Multiple rib fractures
- 📌 Multiple abrasions

Aortic Tear

- Sudden deceleration MC mechanism
- rules of 1/3
- BP control
- Operative repair stent vs open

Spinal Cord Injury

- 📌 Pre-hospital care
- 📌 Steroids?
- 📌 Surgery
- 📌 Long-term prognosis

Key Points

- 📌 High index of suspicion based on MOI
- 📌 Immobilize to prevent further neuro injury. Unclear if true?
- 📌 ABCs and only what's critical on scene
- 📌 IV en-route
- 📌 Transport to Trauma Center (level 1)

Case 2

📌 Stabbing



Dispatch

- 📌 Respond for the male with multiple stab wounds
- 📌 PD requests a rush on the bus!
 - 📌 “Central, you got an ETA on the bus, aided is likely”

On Scene

- 📌 21 y/o male lying on basketball court
- 📌 Multiple stab wounds to left chest
- 📌 “2 dudes jumped me and I got cut”
- 📌 Awake and alert

Primary

 A

 B

 C


 D

 E

Multiple Deep stabs



Vitals

 89/63

 114

 RR 30

 Pulse oximetry 93%, 100% on NRFB

Physical Exam

- Multiple left sided stab wounds
 - L ant chest
 - L ant axillary line
 - L upper back
- Diminished LS left base to mid lung

Pre-hospital care

- 📌 What do you want to know?
- 📌 What are you going to do?
- 📌 Should you immobilize?
- 📌 Fluids?

ED Arrival

- 📌 Vitals

 - 📌 90/60 118 RR30

- 📌 Trauma team present

- 📌 exam consistent with hemo/
pneumothorax

- 📌 Must check everywhere

CXR



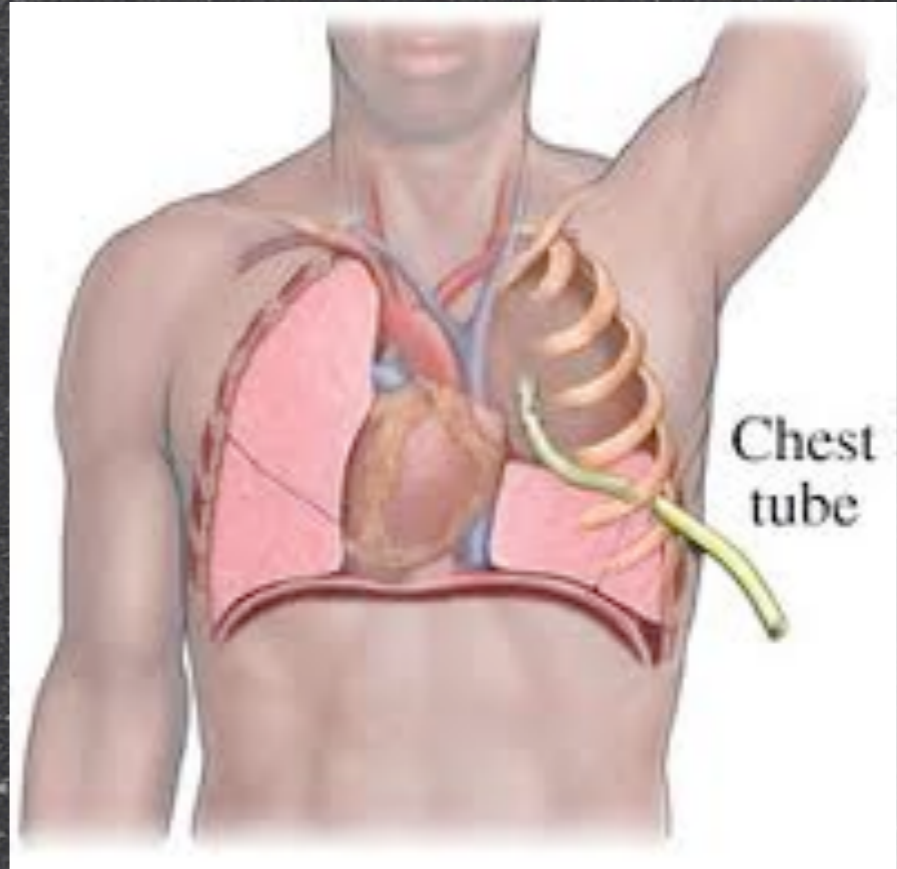
PTX/Hemo treatment

- 📌 Needle Decompression

 - 📌 When

 - 📌 How

- 📌 Chest tube in ED





Massive Transfusion Protocol (MTP)

- PRBC, FFP, Platelets
- 1:1:1 or not?
- When to administer?
- Transaxemic Acid (TXA)

Operation?

- 📌 When do stab wounds need to go to OR?
- 📌 Chest tube criteria
- 📌 Observation?

Key Points

- 📌 Must look everywhere
- 📌 Seal wounds with occlusive dressing
- 📌 Know indications to decompress
- 📌 Don't waste time with IVs
- 📌 Rapid transport to trauma center

Case 3

- 📌 Elderly woman mauled by a dog



Dispatch

- 📌 Elderly female unresponsive
- 📌 Arrive to find dog barking inside
- 📌 unknown number of patients inside

Initial Approach

- 📌 Concerns?
- 📌 Additional needs?

Primary

- 📌 70 year old female

- 📌 Moaning incoherently

- 📌 VS

- 📌 89/56 110 18 98%

- 📌 obvious serious soft tissue wounds







Friday, October 18, 13

ED Care

- Trauma team called
- Sedated and Intubated
- Labs sent
- Patient taken to OR for debridement
- Ortho for wrist fracture
- Multiple staged reconstructive surgeries

Pre-Hospital Care

- 📌 What are your concerns?
- 📌 What is your on-scene treatment?
- 📌 Transport considerations?
- 📌 ALS needed?

Case 4

📌 Rolllover MVC



Scene

- 📌 Vehicle found on its roof
- 📌 Female driver 35-40 years old with head trapped under rollbar
- 📌 Doesn't respond verbally
- 📌 GCS 8

Scene

- 📌 What are your initial concerns?
- 📌 VS: 146/88 HR 110 RR 20 SpO2 91%
- 📌 Care prior to extrication?
- 📌 What are on-scene treatment priorities?

Exam

- 📌 Patient now extricated
- 📌 Obvious eye injury
- 📌 Snoring respirations
- 📌 VS remain Stable

Eye Injury

📌 looks like this



Field Care

- 📌 Spinal immobilized
- 📌 IO x2
- 📌 King airway
- 📌 Transport to Level 1

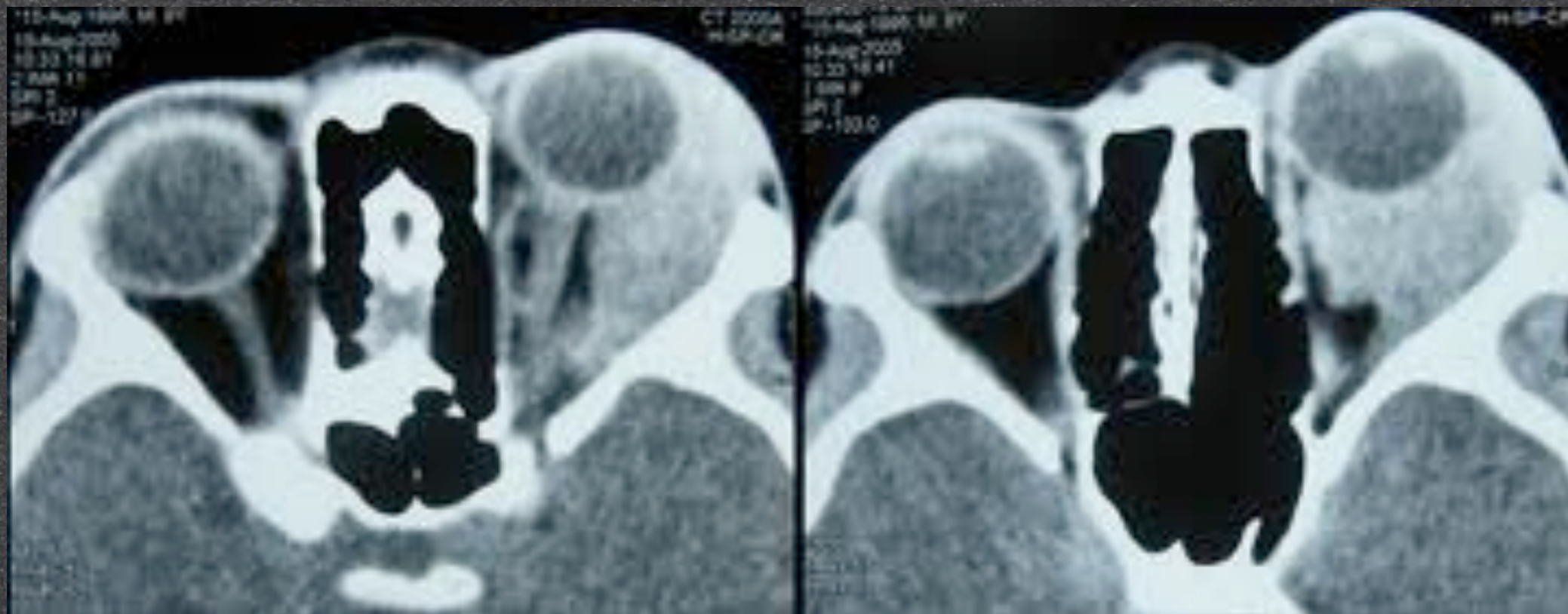
ED Care

- 📌 King left in place
- 📌 IV access reestablished with Cordis
- 📌 Lateral Canthotomy
- 📌 “Pan scan”

Retrobulbar Hemorrhage

- Acute vision threatening injury
- bleeding behind eye in orbit (retrobulbar space)
- Tension on optic nerve
- must be released

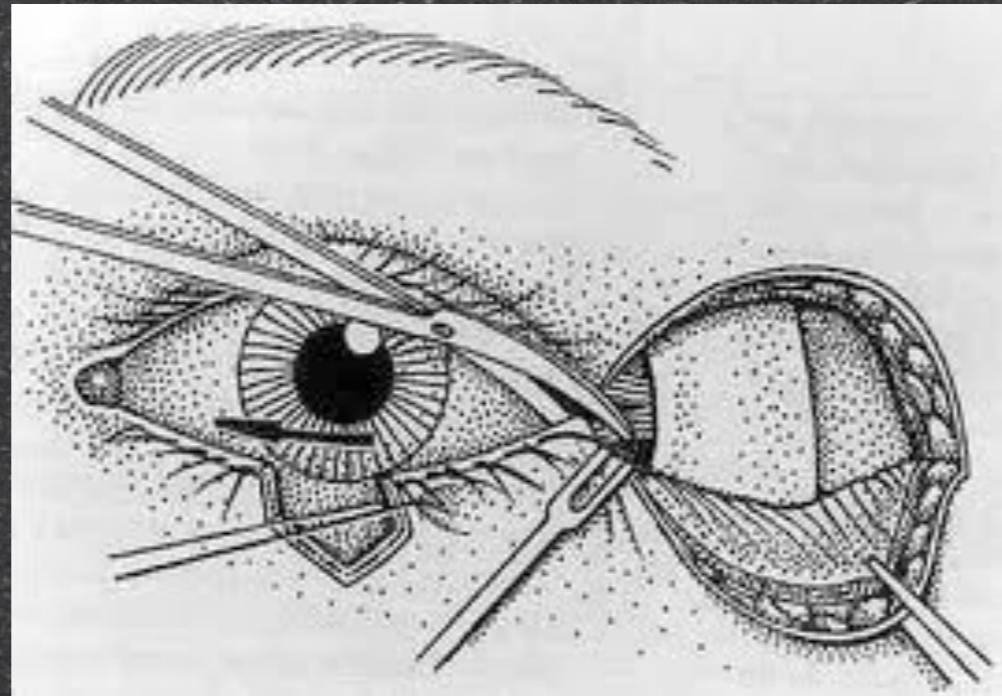
Ct Scan



Treatment

- 📌 Lateral Canthotomy
- 📌 Cut the ligament around eye to allow blood to drain
- 📌 Vision saving

Procedure



Post-procedure

- Proptosis improved
- Pupil response returned to normal

Work-up

- 📌 “pan scan” showed multiple stable c-spine fractures
- 📌 CT brain normal
- 📌 Admitted to ICU

Key Points

- 📌 Eye injuries can be vision threatening
- 📌 Don't be distracted by visually impressive injuries
- 📌 ABCs first, consider other injuries

Case 5

📌 Elderly male fell down stairs



Dispatch

- 📌 68y/o male fell down 3 steps
- 📌 Patient unresponsive

EMS Assessment

- Upon arrival
 - Lying at bottom of 3 steps, face down
 - No response to verbal stimuli
 - Small amount of blood pooled around head

Primary

- 📌 VS- BP 170/110 HR 56 RR 9 SpO2 90%
- 📌 A - snoring respirations
- 📌 B - clear and equal
- 📌 C - no severe hemorrhage
- 📌 D - unresponsive, GCS 6, PERL
- 📌 E - No obvious injuries

Treatment

- 📌 Now what?
- 📌 What are the injuries?
- 📌 What are the treatment options?
- 📌 Where should he go?

Further Info

📌 PMH: A-fib, HTN, DM

📌 Meds: Pradaxa, Lisinopril, Metformin

📌 All: NKDA

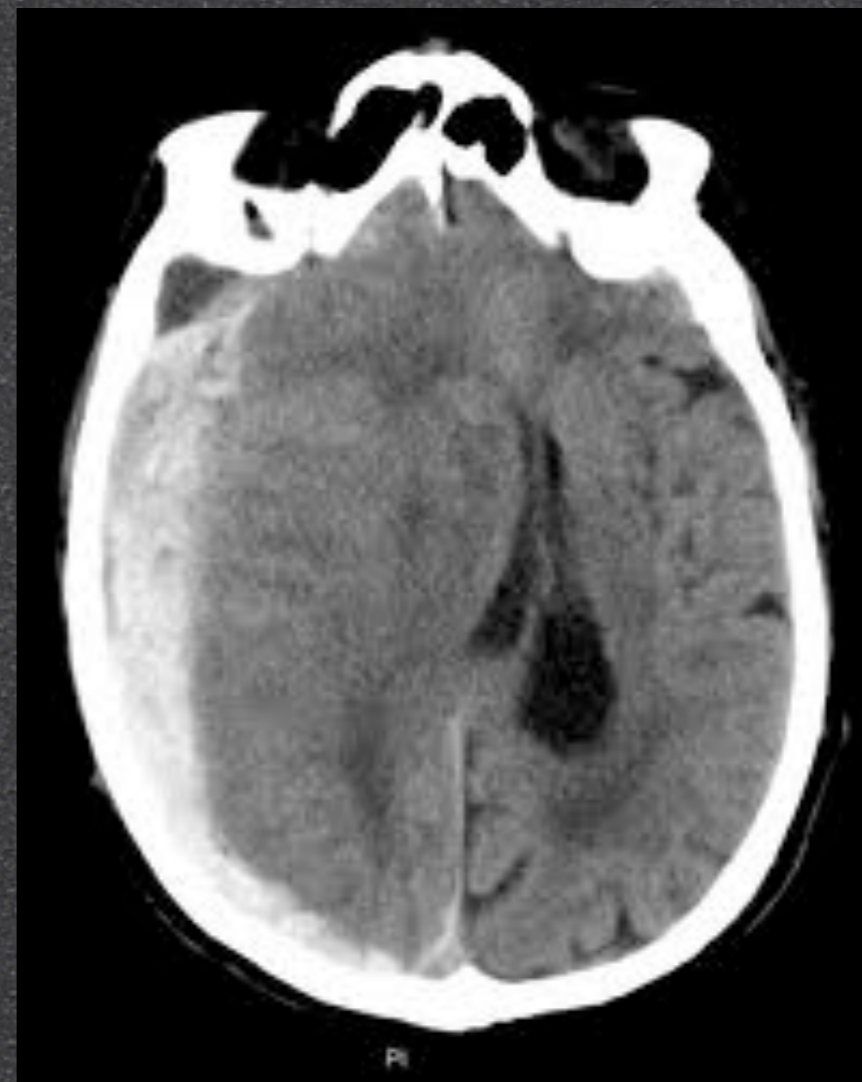
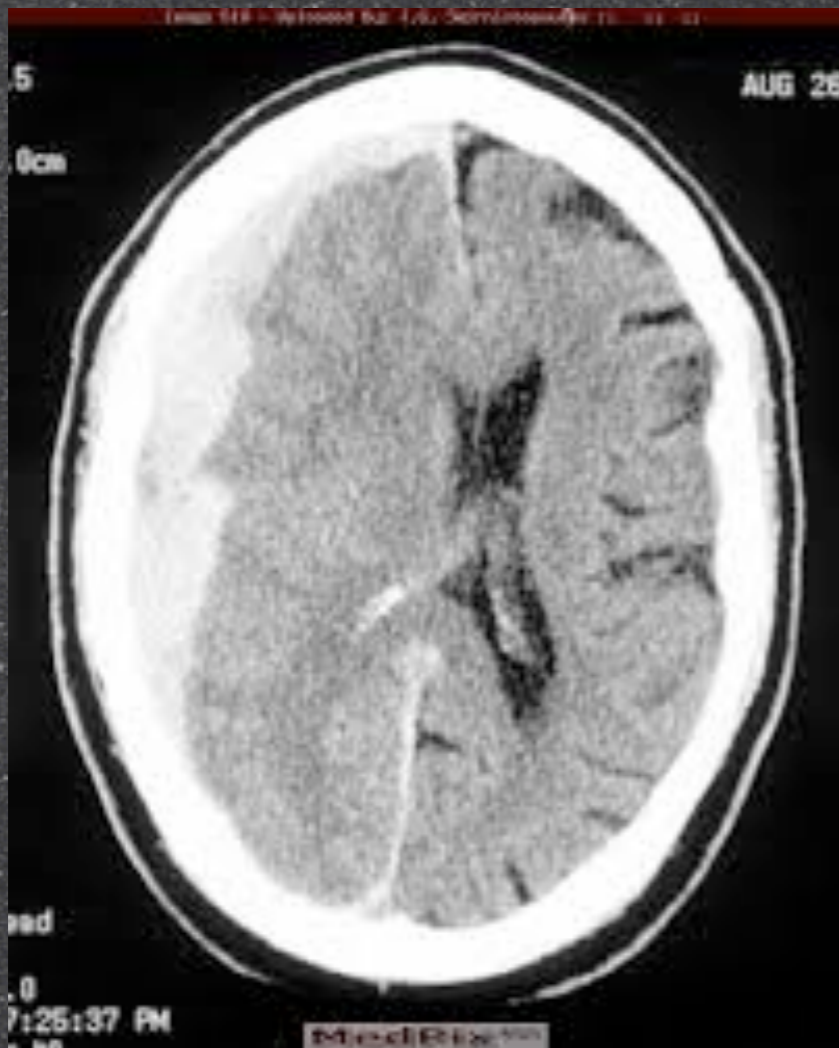
ED Assessment

- 📌 Arrived with BVM assist
- 📌 No change in mental status
- 📌 ED vitals: 180/110 HR52 SpO2 90%
- 📌 Blood oozing from scalp
- 📌 No other visible injuries

Doctor, what's next?

- 📌 What do you want to do?
- 📌 What tests do you want?
- 📌 Should we operate?

CT Scan

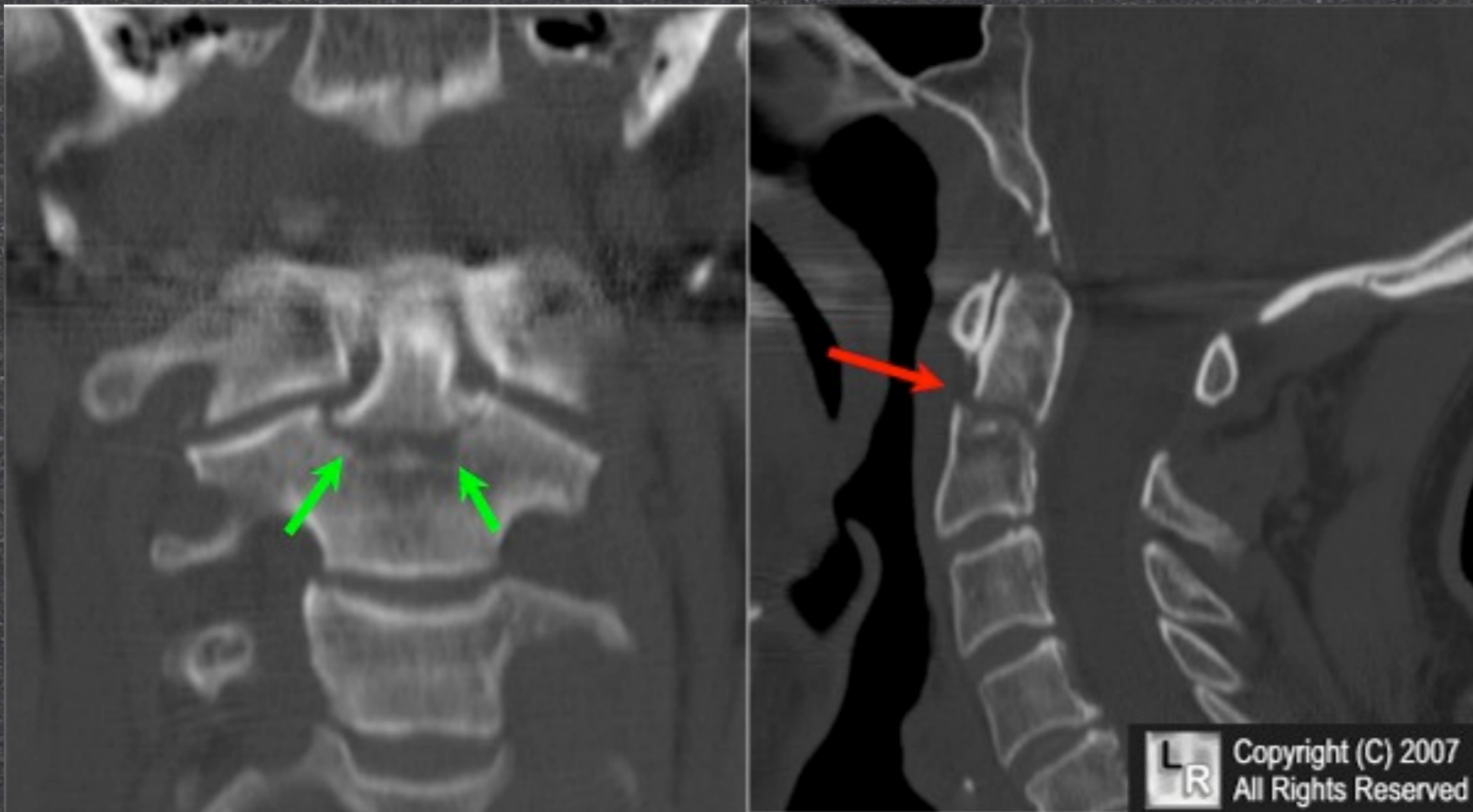


What's Pradaxa?

- Newer anticoagulants
- There is NO reversal
- Try various meds, but none work well
- Mortality much higher.

Anything else?

- 📌 What about the neck?



Key Points

- 📌 Elderly can get c-spine fx with seemingly minor trauma
- 📌 Anticoagulants are bad
- 📌 Mild hyperventilation only with signs of herniation
- 📌 Significant blood loss from scalp

Thank You!