

# MOTORCYCLE INJURIES

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# SITC

- SIU School of Medicine
- Memorial Medical Center
- St. John's Hospital
- 1200 patients a year
  - 70 % motorized vehicles
  - 6 % motorcycle crashes

# RISKS

- Crash rate with mortality
  - 13 per 100,000 for car
  - 72 per 100,000 for motorcycle
- Increased risk of fatality with age
  - > 40 y/o - 20x more likely to die than other vehicle operators
- 75 % of crashes with car
- 25 % of crashes single vehicle – especially slide outs

# CAUSES

- Causes of injury and fatality
  - Increased speed
  - Increased bike size
  - ETOH use
    - Common cause of single vehicle crash
    - Level  $> 0.08$  seen in 30 % of fatal crashes
  - Lack of being seen by motorists

# RISK FACTORS

- No external protection
- Exposed skin
- Exposed fuel tank
  - 62 % with fuel leak
- High rate of ejection
- Smaller than a car











# PREVENTION

- Bike maintenance
- Full skin protection
- Avoid ETOH
- Use of headlamps
- Wear conspicuous clothing
- Antilock brake
- Avoid texting/distractions

# HELMET

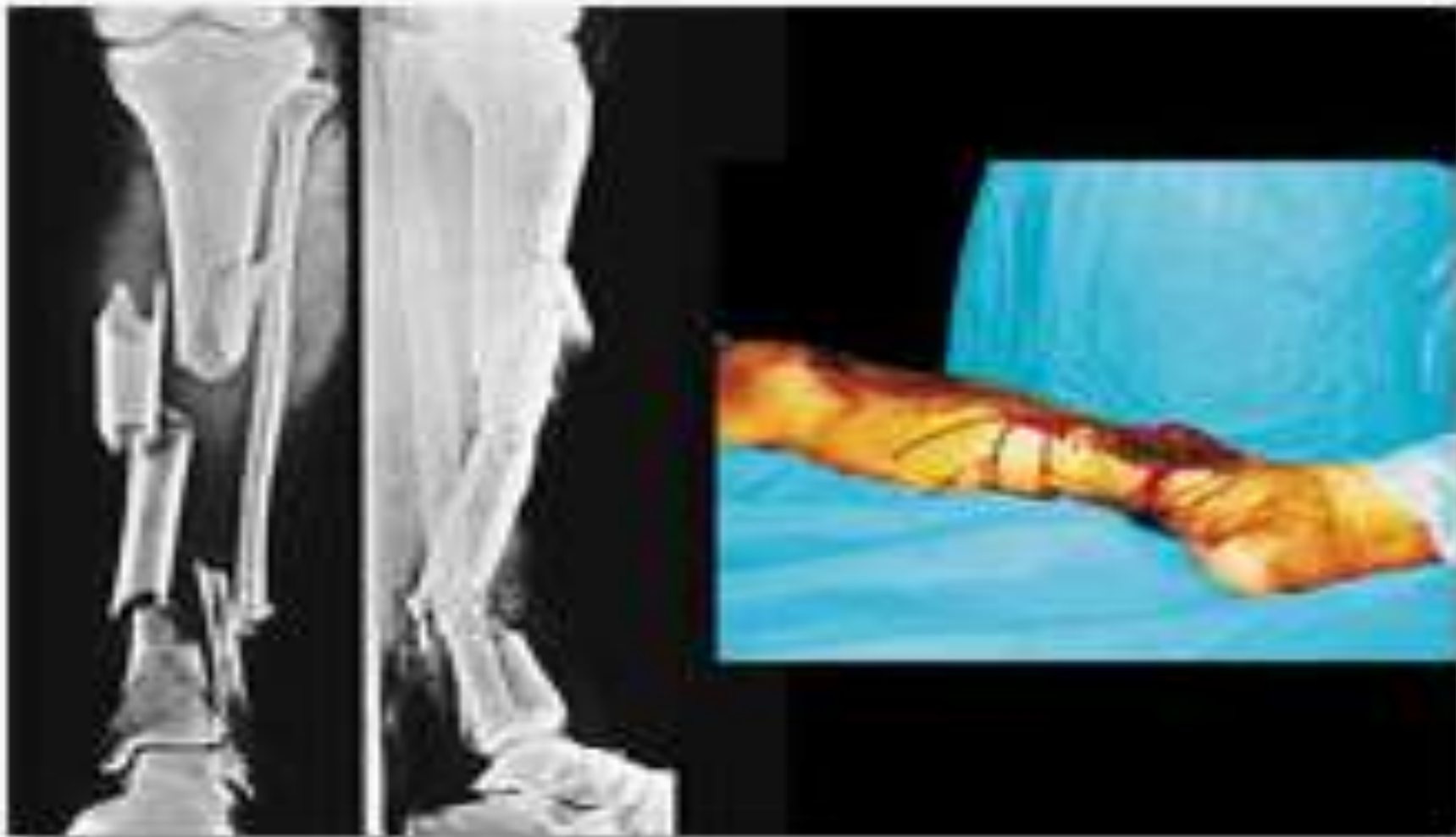
- Reduce risk of death 37 %
- Prevent 700 + deaths
- Preserve visibility

# PREVENTION



**INJURIES**

# Lower leg



# THIGH - FEMUR





# FEMUR



# RISKS

- Compartment syndrome
- Vascular injury
- Neurologic damage
- Loss of bone length
- Osteomyelitis

# Pelvis



# Straddled the Motorcycle



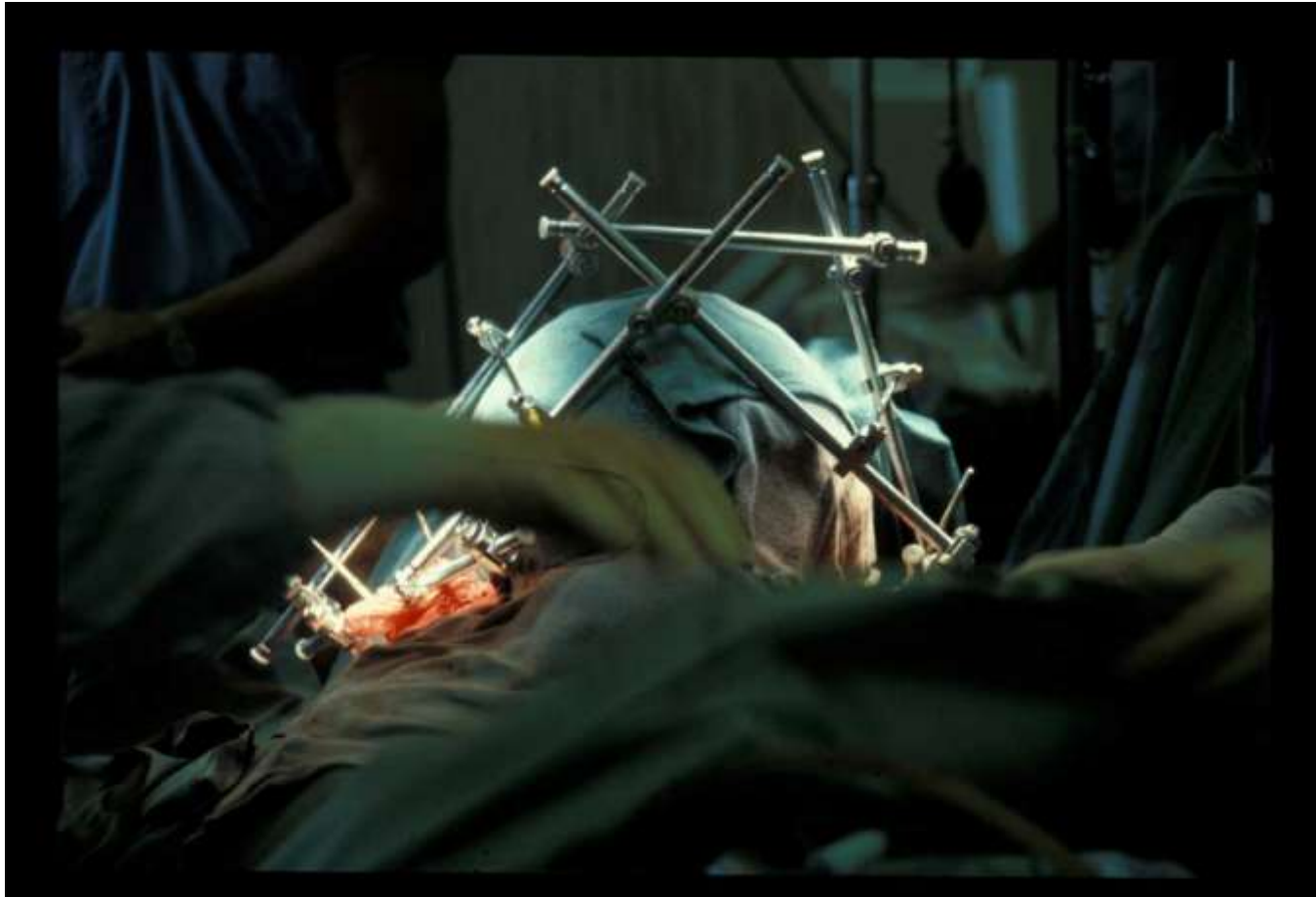
# Pelvic Fractures



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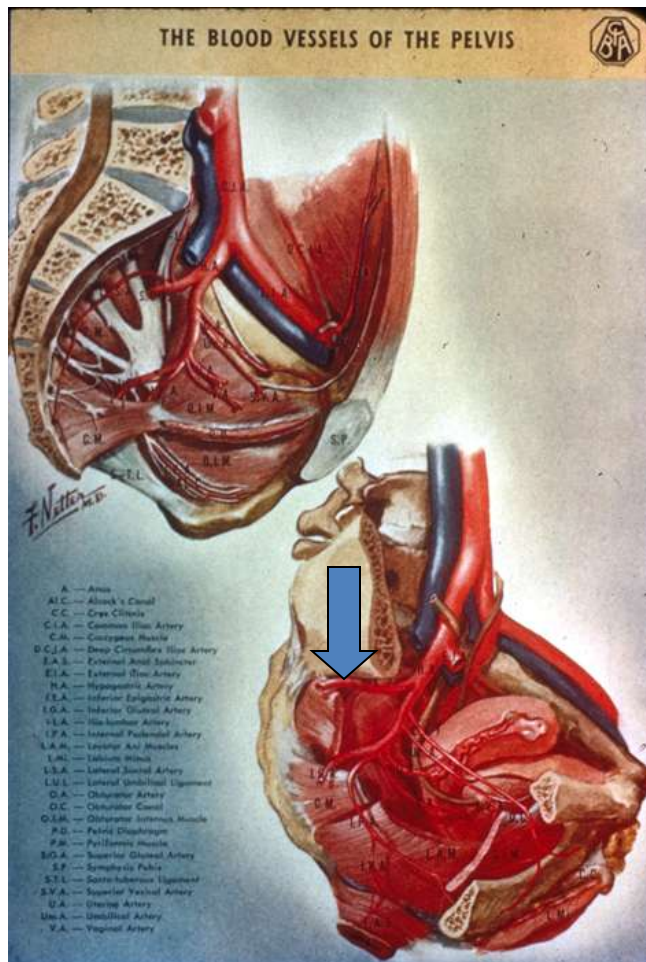


# Bleeding Sources

- Bone
- Soft tissue
- Veins
- Arteries



# Pelvic Fractures



Anatomy at risk

nervous

genito-urinary

gastrointestinal

vascular

# UPPER EXTREMITY

- Humerus
- Radius
- Ulna
- Hand

# HUMERUS



# FOREARM

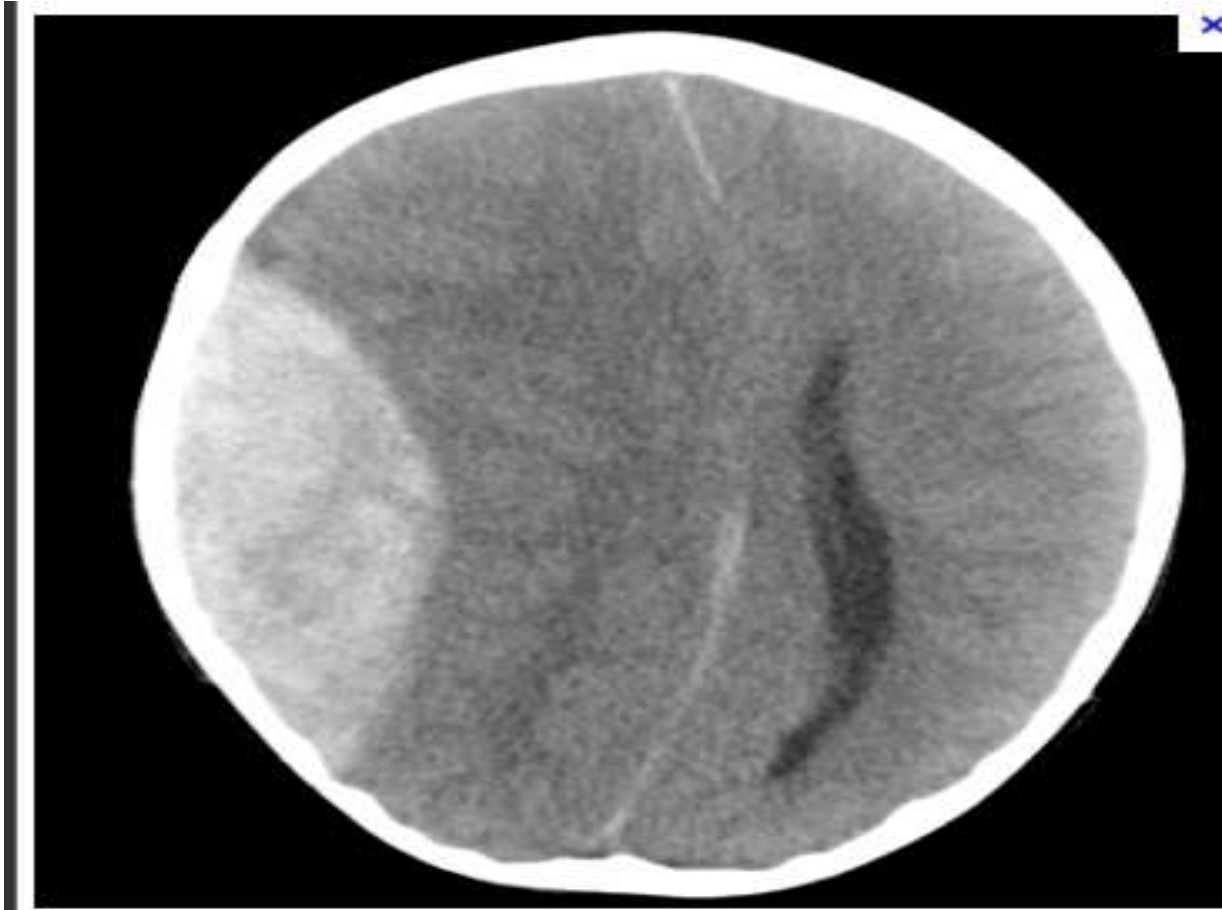


# HAND



HEAD

# EPIDURAL

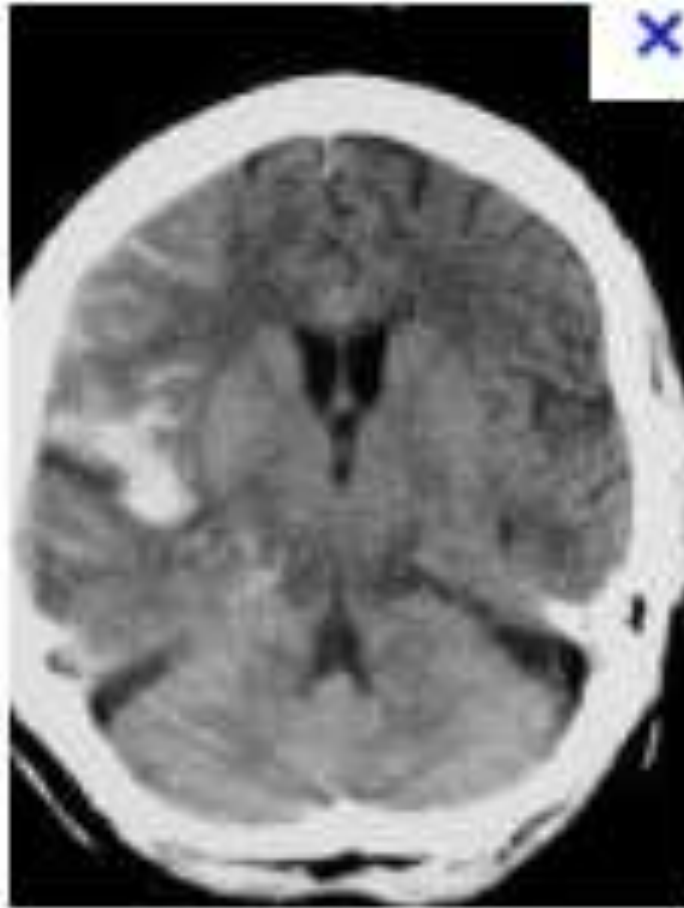


# SUBDURAL





# SUBARACHNOID

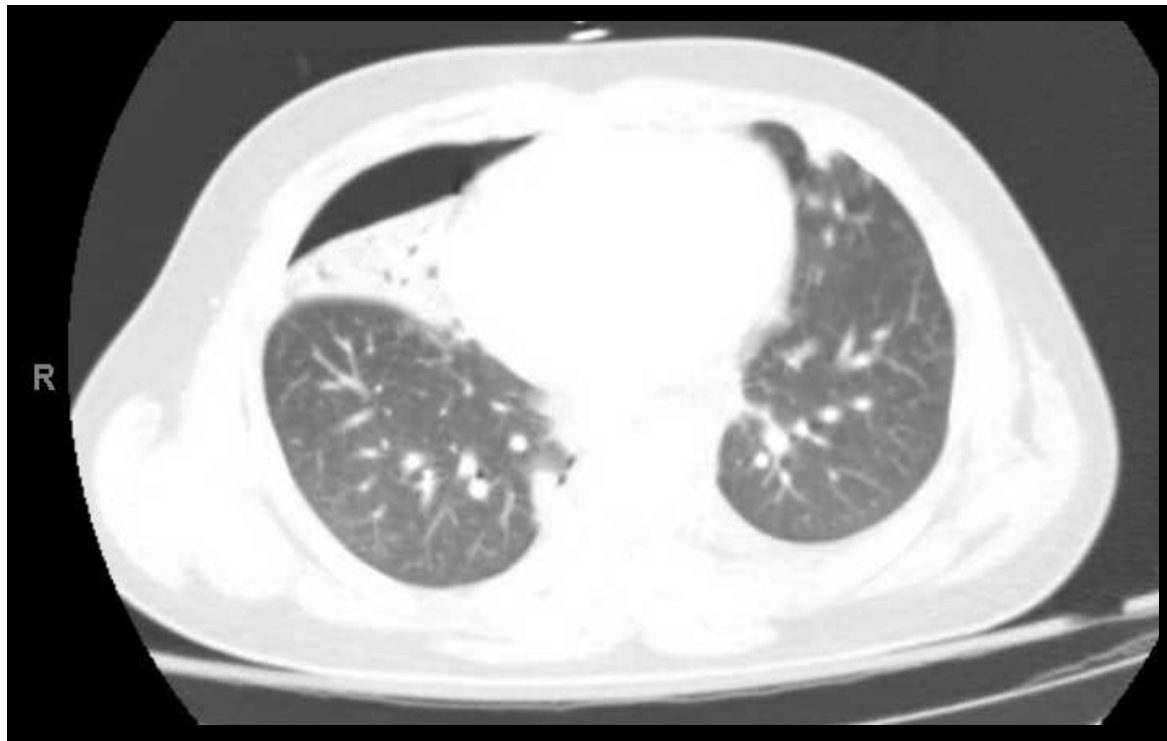


# CHEST

- Rib fractures
- Pulmonary contusion
- Hemothorax
- Pneumothorax

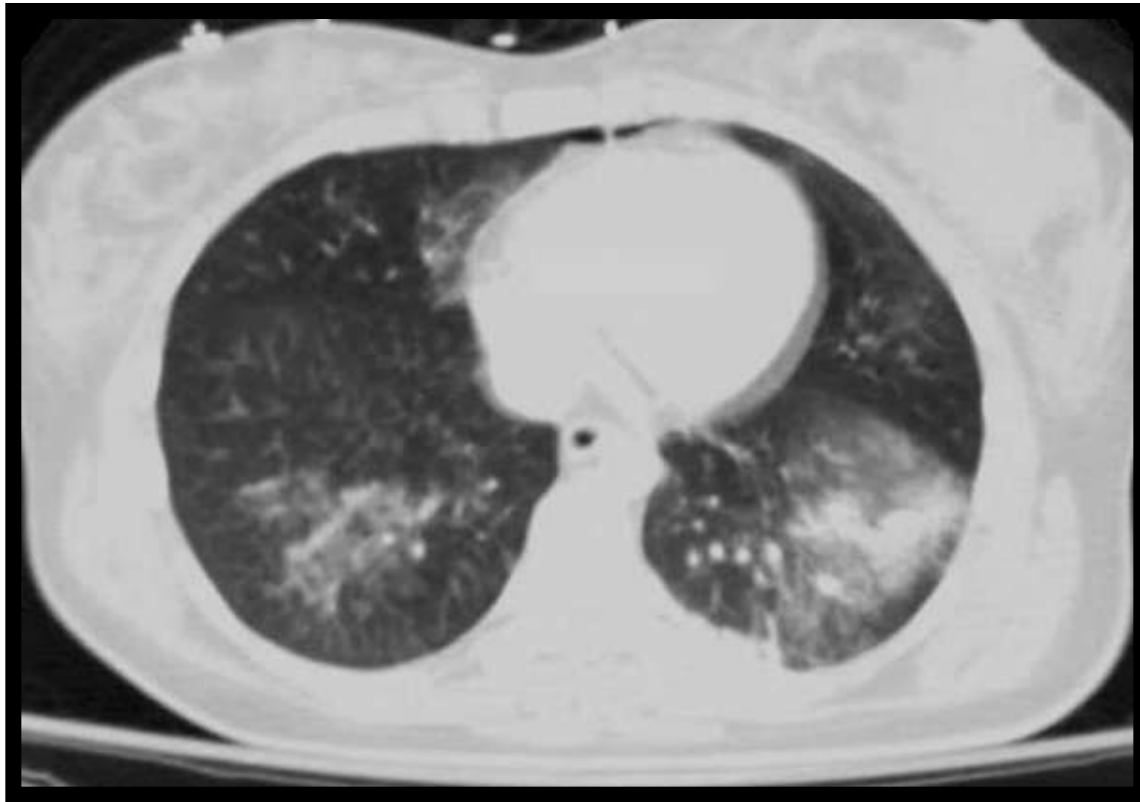
# Chest CT

- Right pneumothorax

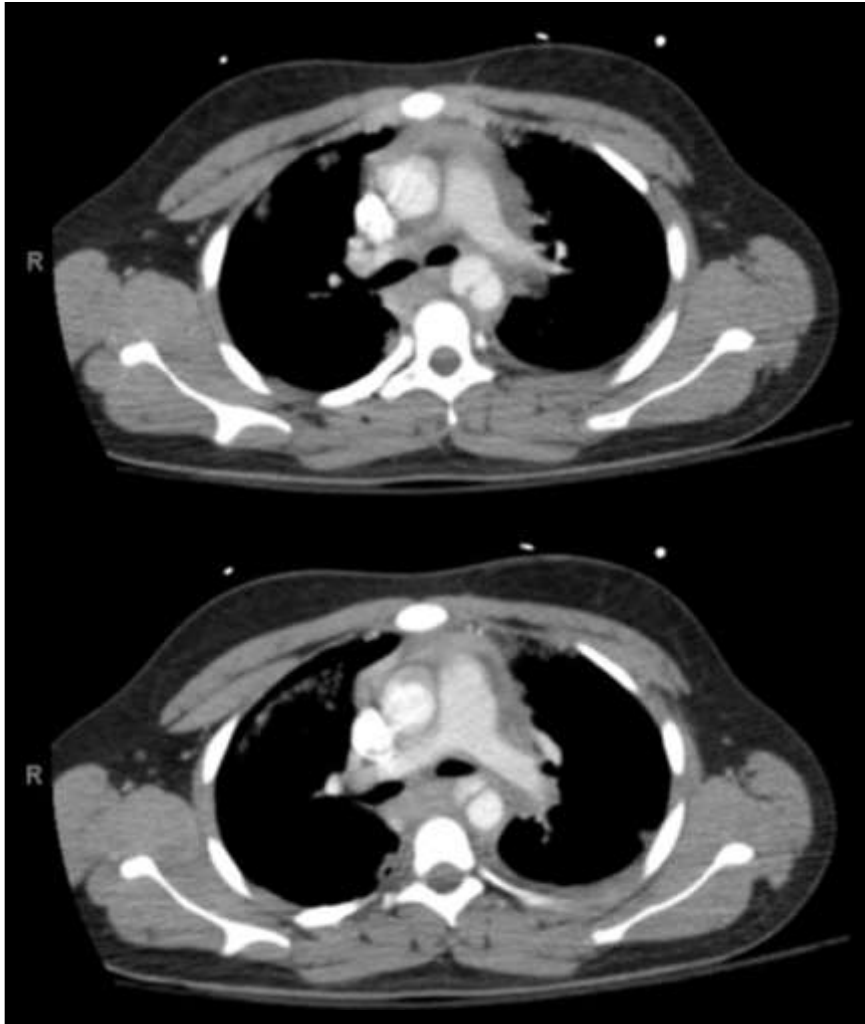


# Pulmonary Contusion

- Chest CT - Pulmonary contusions



# Chest CT

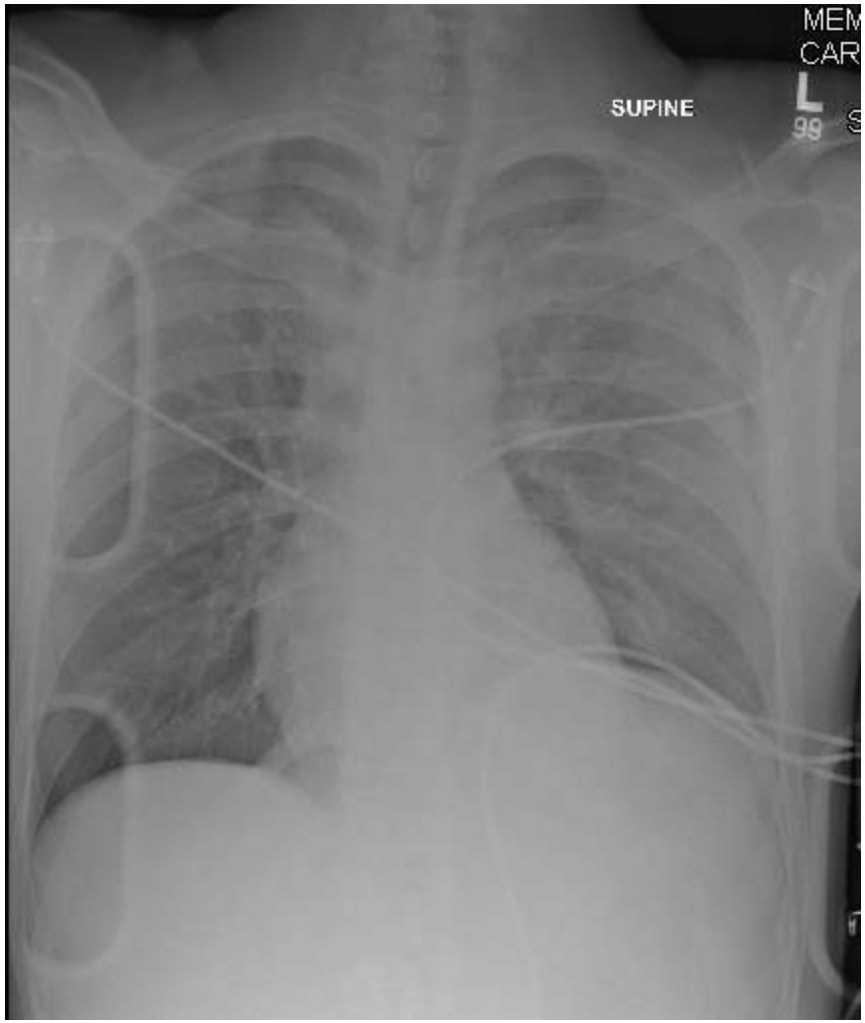


- Partial traumatic aortic transection



# CASE 1

- 22 y/o male on motorcycle
- Hit pole at > 60 mph
- Had helmet
- C/O left shoulder pain
- Normal BP and HR











# CASE 2

- 40 y/o female who was on blind date
- Passenger in MCC – thrown 40 ft
- “wrapped around guardrail”
- Arrived awake and alert
- HR 126 BP 99/50

# CASE 2

- Multiple deformities right leg
- Large wound in right groin
- Upper extremity deformity

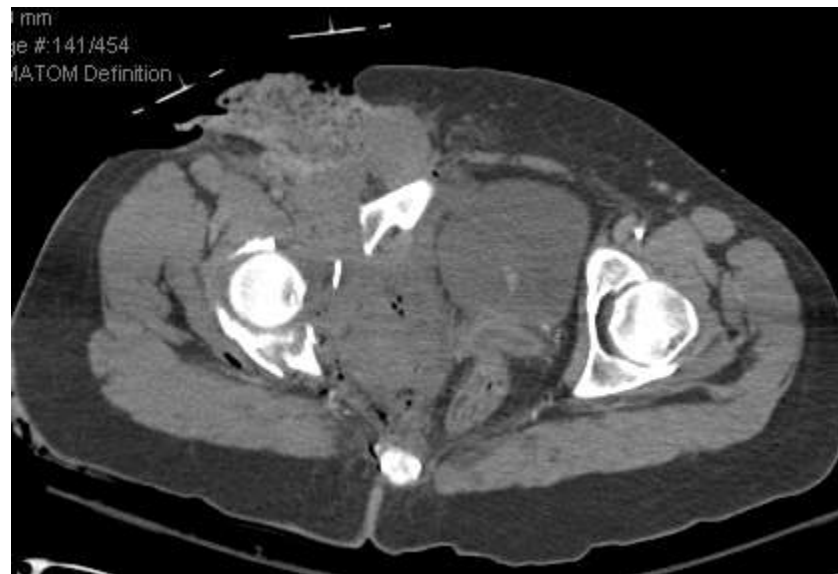
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Zoom: 1



















# COURSE

- Had attempted bypass graft
- Renal failure with dialysis
- Rhabdomyolysis
- Multiple wound debridements
- Amputation above knee
- Osteomyelitis