

Case Reviews

A couple of “almost” real cases

Rocky Mountain Rural Trauma Symposium

September 12, 2014

Case #1

Event: It's a cool, dry autumn morning

17 year old male and a friend were hunting with 22s and he suffered an accidental gunshot wound to the lower right side of his chest

They were in a field just outside town and called 911 for help

The friend applied direct pressure to the wound to control the bleeding which was not copious

There is BLS ambulance service and a Trauma Receiving Facility in the town

The nearest Level II Trauma Center is ~100 miles away

EMS

1000: BLS unit arrives

Patient supine in field with minimal bleeding from the right chest entry site, no exit wound visible

P 140, R 28, BP 148/90, GCS 15

Patient very anxious/borderline hysterical, difficult to assess

Scene secure, approximately 10 minutes from the hospital

EMS

- *What are your assessment and treatment priorities?*
- *Would they be any different if you were a Paramedic? - Should you needle this chest?*
- *This was called in as an accidental shooting...should you treat it like a crime scene? Why or why not?*
- *What would you want to highlight in your documentation?*

EMS

- Airway patent
- Minimal bleeding
- No sucking chest wound
- Breath sounds clear and equal (though difficult to assess secondary to patient movement)
- No other injuries noted

So, what now?

First Facility

1030: Patient arrives, condition unchanged

CXR shows significant right pneumothorax, bullet visible

What are your care priorities?

Intubate?

Chest tube?

Fluids/pain meds/sedatives?

1130: Flight team arrives

1230: Patient arrives in ED of Level II Trauma Center

Trauma Alert with Anesthesia called so surgeon and OR team are ready upon patient arrival

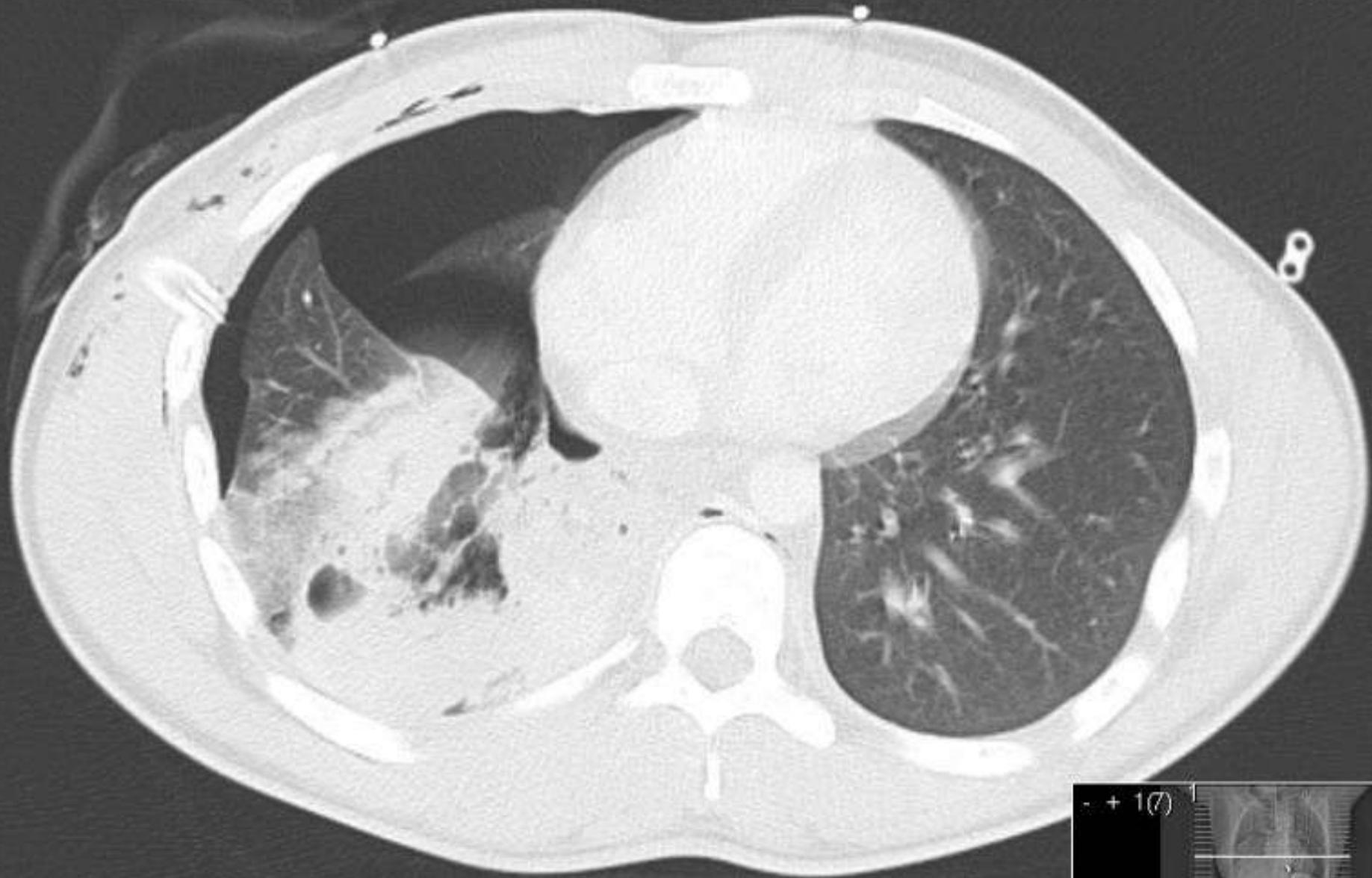
P 120, R 28, BP 120/80, GCS 15

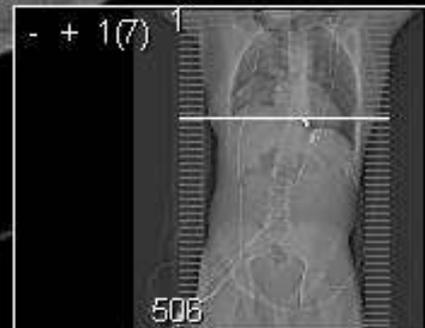
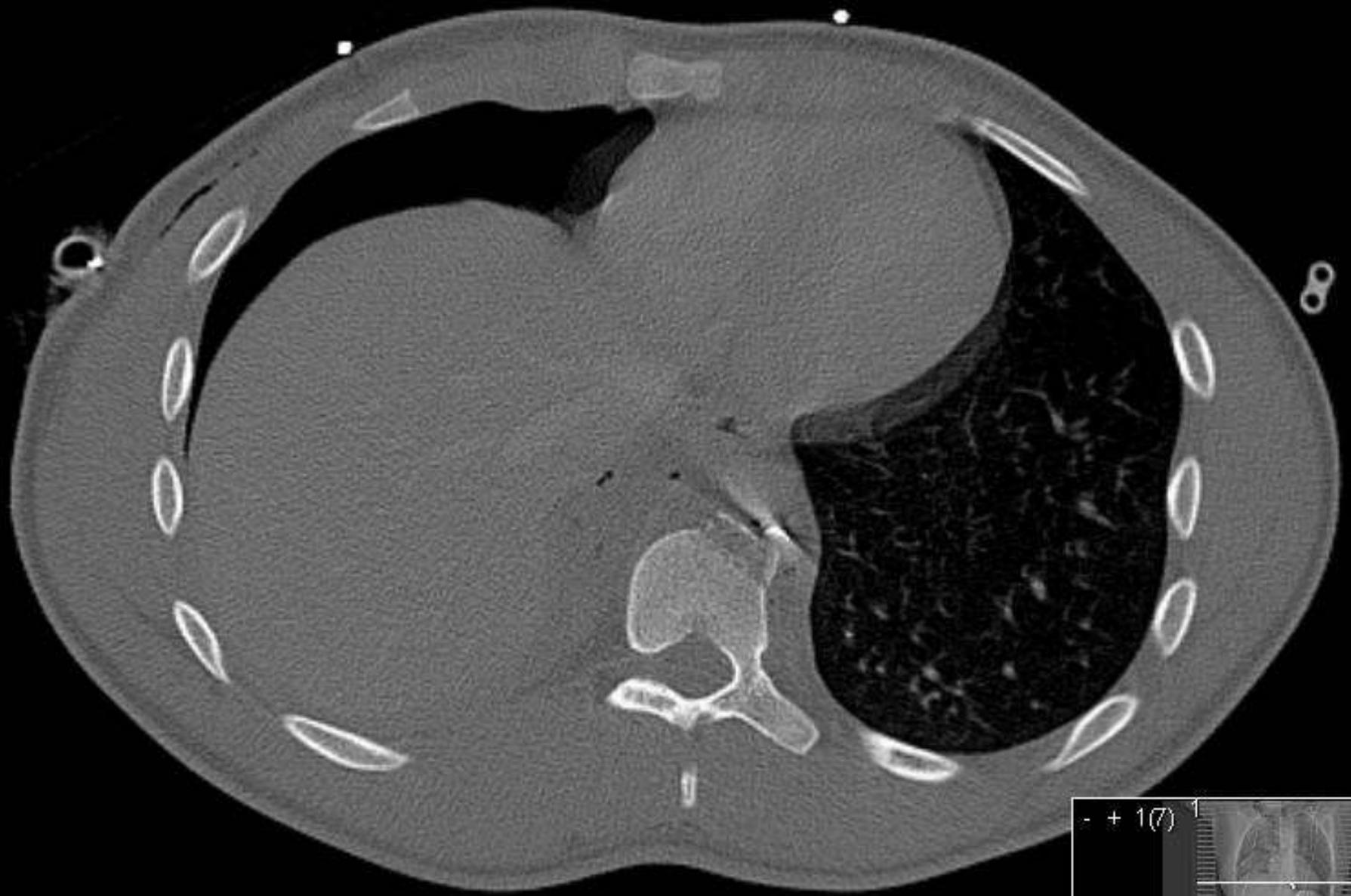
Now What?

Straight to OR?

To CT for better views?

Contrast?







CT

- The bullet had passed through the right thorax, causing injury to the right lung and a pneumothorax
- It then hit the spine, fracturing the anterior vertebral body
- Before coming to rest posterior to the aorta
- No clinical evidence of esophageal injury - *Barium swallow?*
- *Any further tests?*

Remove it or leave it in place?

Hospital Course

- Bullet left in place
- No complications
- Patient discharged home on day 5

Case #2

Event: It's a damp, chilly autumn day with low clouds and intermittent rain/snow mix

At approximately 1400, 68 year old morbidly obese male riding ATV loses control and slides down steep grade and ends up about 200 feet downhill in a dry creek bed

Patient was working on his ranch

When he didn't come home for dinner his wife mobilized family and employees and organized a search

He was found at around 1800

There is no cell phone service at the point of the incident

It took them 45 minutes to get him onto an ATV and back to the house

One family member rode ahead and called 911 to have the ambulance meet them at the house

Ambulance crew is BLS with no ALS providers in the county

Nearest town is 30 minutes from the ranch house

There is a Trauma Receiving Facility in the town with a Family Nurse Practitioner working in the ED - No surgical capabilities

The nearest Level II Trauma Center is about 60 miles away

EMS arrives at the house at 1915, has a 20 minute scene time and arrives at the initial facility at 2000 (now 6 hours post-event)

EMS finds patient supine on the living room floor

He is alert and complains of chest, abdominal, pelvic and right leg pain

There is no significant external bleeding, though his leg injury is an open tib/fib fracture

His wife states he has a history of heart and lung disease along with high blood pressure and Type II diabetes

He takes Coumadin for A-fib

EMS

P 128, R 24, BP 160/100, GCS 15

Skin cold to the touch and a bit pale

Complains of pain “everywhere”

Airway clear

Respirations rapid and a bit labored with some wet, congested sounds

Pulse palpable radially

Significant bruising entire right side of torso

EMS

As an EMT-Basic, what are your care priorities in this situation?

EMS

What would you do differently as a Paramedic?

EMS Treatment Provided

- O2 per NRB
- Padded splint to right lower leg
- Long board for transport with spinal stabilization
- During transport, patient complains of “horrible” back and buttocks pain along with increased difficulty breathing - Vitals unchanged

What now?

- *As a Basic*
- *As a Paramedic*

First Facility

2000: Arrival - P 95, R 28, BP 160/90, GCS 15

Significant RUQ tenderness

Facility has a CT, would need to call the tech in

As a front line provider (MD/PA/NP), what are your care priorities in this situation?

- *What diagnostics?*
- *What treatments?*

First Facility

Baseline labs and X-rays done

CXR: Difficult to read, possible right rib fractures

Pelvis X-ray: Extensive pelvic fractures including R inferior and superior pubic rami fractures with possible SI joint widening

2030: Call to Level II Center for acceptance of patient and dispatch of helicopter

First Facility Labs

- Hgb 9.6 - Hct 28.0
- WBC 10.4
- PT 17.6 - PTT 32.1
- INR 2.5
- Platelets 37
- Glucose 260
- CK 3479

What labs really have value at this point?

First Facility

2 peripheral IVs started - *How much crystalloid would you give?*

Level II Center calls back, says helicopter cannot fly due to deteriorating weather - *Now what?*

- Send patient by ground with one of your hospital nurses?
- Do the above but arrange a rendezvous with an ALS unit from the receiving town?
- Keep the patient in your ED until an ALS unit arrives?
- Presuming it's going to be 45-60 minutes until you can get him out the door, what would you do during that time?

First Facility

2200: Departure by ground (2 hours after arrival at first facility, 8 hours post-event)

P 110, R 28, BP 120/80, GCS 15

Presuming condition unchanged, how much crystalloid should be given enroute?

What would your instructions be for EMS should his condition deteriorate?

Level II Trauma Center

2300: Arrive (9 hours post-event)

Trauma Alert called, surgeon and OR team present

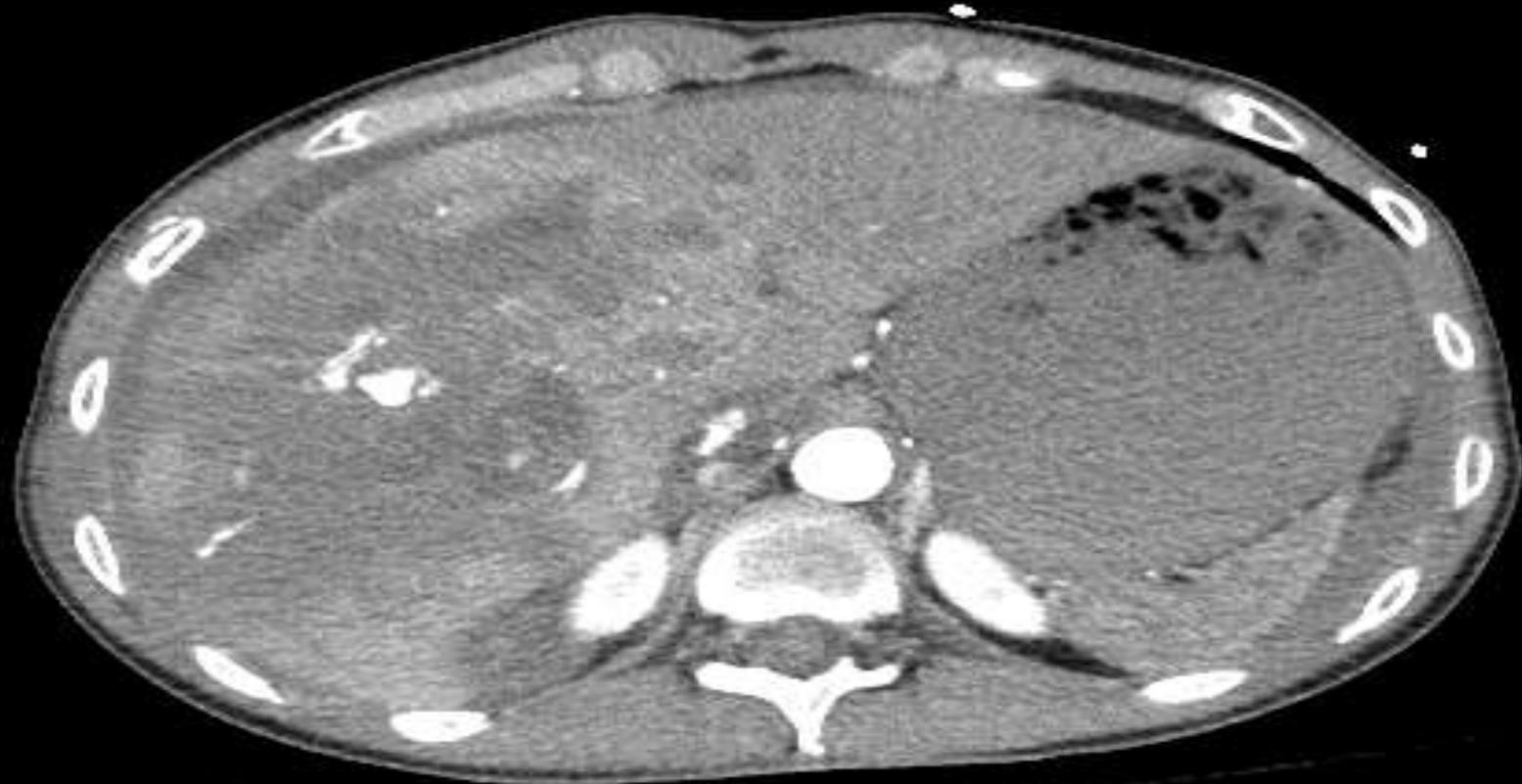
P 132, R 28, BP 140/90, GCS 15

What should be done and in what order?

A

R

L



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R

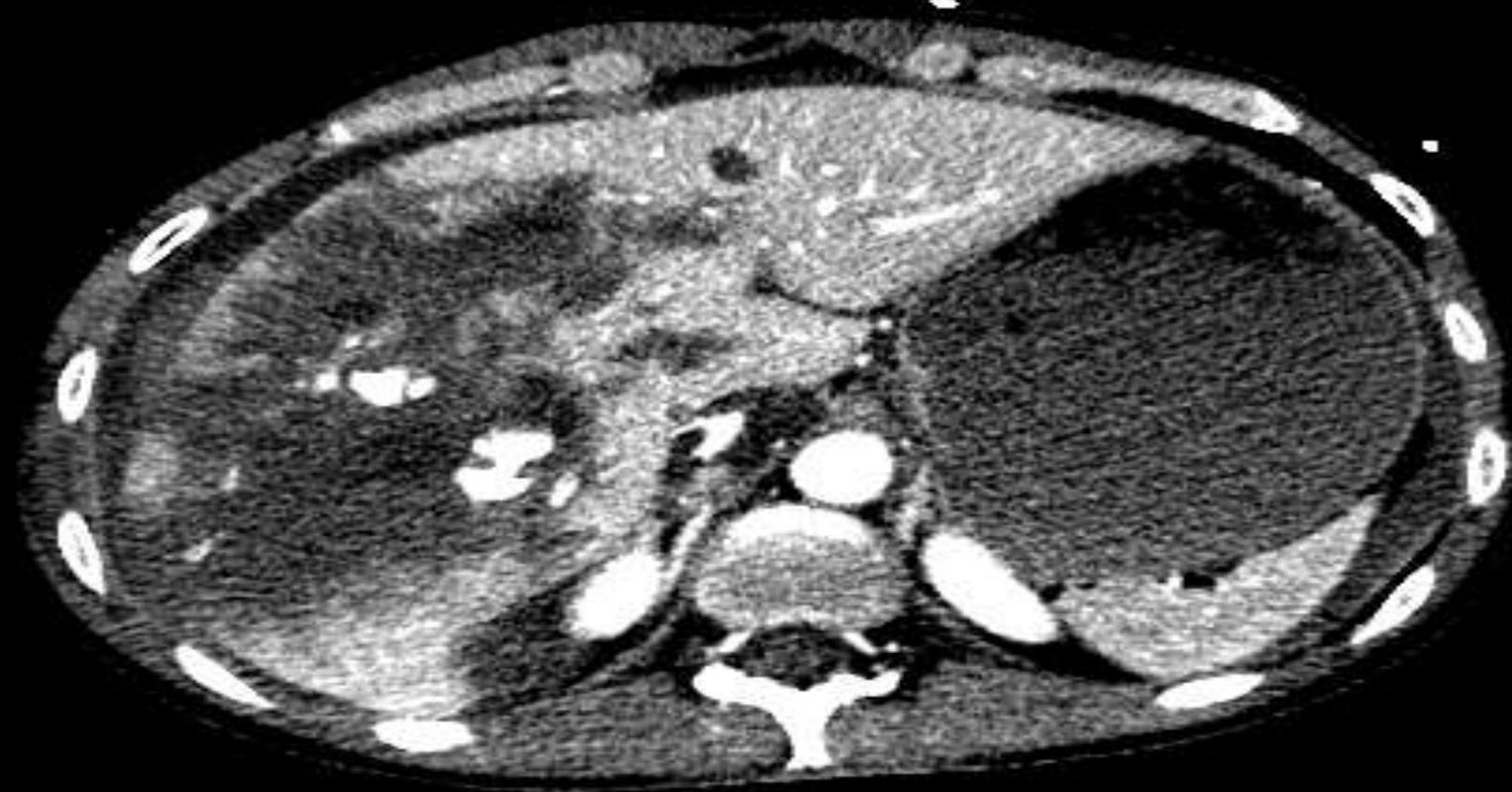
L

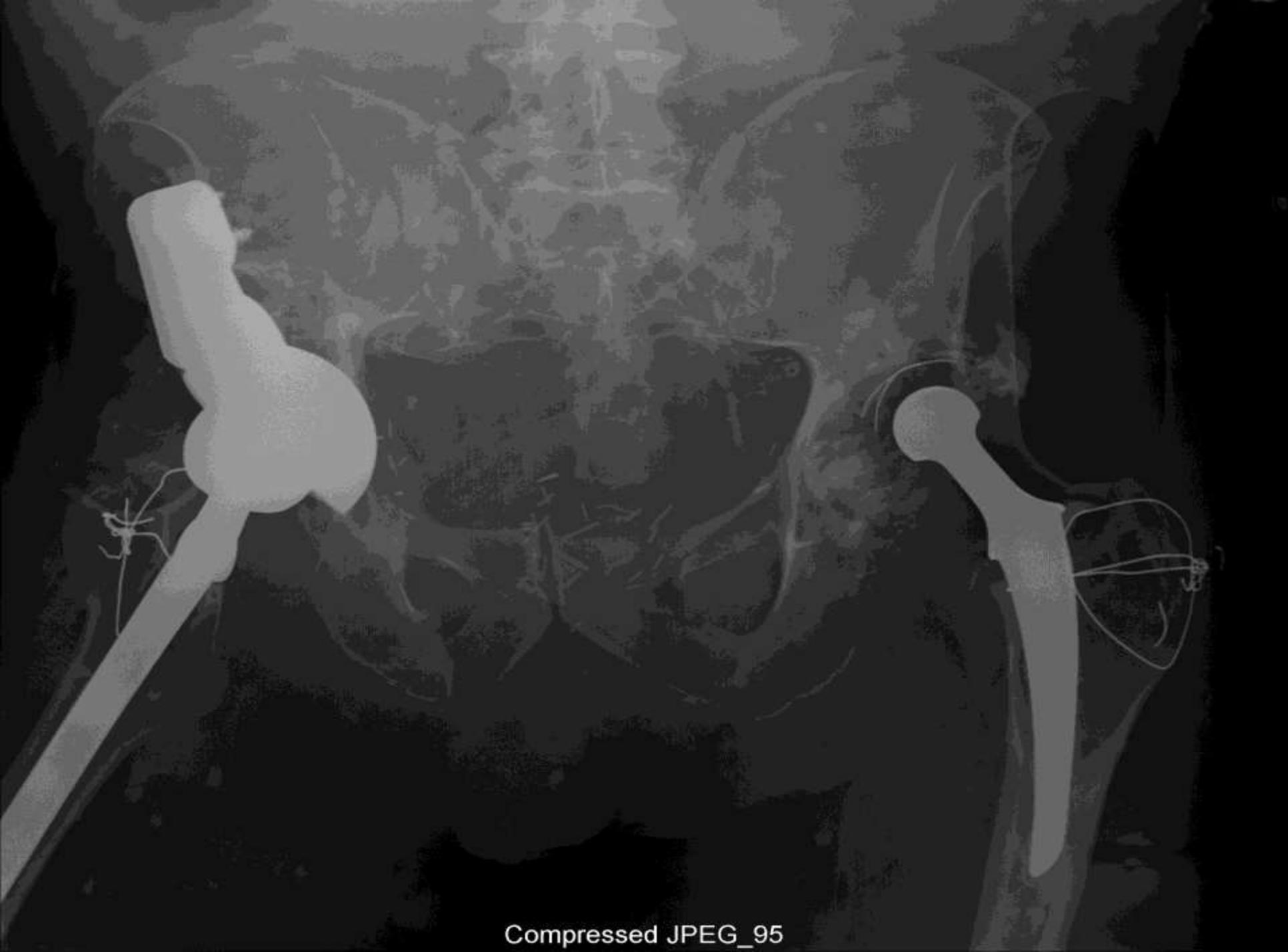


A

R

L





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A

R

L



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A

R

L



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Radiologist Read

- Grade IV liver laceration with active extravasation
- In association with the pelvic fractures, there is a relatively large anterior pelvic hematoma extending superiorly from the retropubic region
- There is also quite extensive right retroperitoneal hemorrhage
- There are areas of active contrast extravasation within the right retroperitoneum slightly superior and anterior to the iliac crest
- There are also areas of active contrast extravasation retropubic in location both to the right and left of midline
- Comminuted fracture right tibia and fibula

While in CT, has two SBP readings in the 80s

What now?

- *Immediate transfer to Harborview?*
- *Go to our OR &/or Specials first?*
 - *Liver only?*
- *What about the pelvis and tib/fib?*
 - *MTP?*
 - *TXA?*
- *FPP/PCC/Factor VIIa?*

What should the goals of therapy be?

- In terms of vitals
- In terms of ABGs

In other words, how stable does he need to be for us to feel comfortable putting him on a long plane ride?

OR @ 2345 (almost 10 hours post-event)

- Upon entering abdominal cavity, find ~5,000cc blood loss with “terrible injury to right hepatic lobe”
- Packing performed after pressure is held
- Problems with coagulopathy
- Put 10 lap sponges into RUQ around the liver where lac located – placed drain – placed surgicel and potato starch coagulant
- VAC successfully placed
- Pelvic ex-fix
- Tib/fib wash out

OR

Blood products:

- ~2,000cc of Cell Saver replacement
- 17 units packed cells
- 14 units FFP
- 16 units platelets
- 4 units cryo

Now What?

Upon completion of surgery:

P 110, BP 140/90

pH 7.28, HCO₃ 14.2, BE -10.0

INR: 0.9

Hgb: 10

Harborview?

Angio?

ICU?

Harborview

Arrived physiologically stable, no immediate surgery required

Two surgeries to stabilize pelvis

Two surgeries to stabilize tib/fib

Three abdominal surgeries

Complications of bilateral PEs, recurrent pneumothorax, pneumonia, respiratory failure and ileus

Day 36: Discharged to Skilled Nursing Facility