

# ***THE POLYFRACTURE PATIENT***

**“THE A,B,Cs OF A CALL NIGHT”**

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**UCSF 2024 TRAUMA**

# CONFLICT

- RETIRED OTA BOARD
- *NOTHING OF VALUE*

# ***TRAUMA INTRODUCTION:***

- ***3<sup>RD</sup> LEADING CAUSE DEATH {HD,Ca}***
  - ***Head trauma kills the trauma patient***
    - ***\$670 BILLION/YR SOCIETAL LOSS***
- 1/3 OF ALL ED VISITS***



# Adult Trauma: Getting Through the Night

**Andrew H. Schmidt, MD1; Jeffrey Anglen, MD2;  
Arvind D. Nana, MD3; Thomas F. Varecka, MD1**

***J Bone Joint Surg Am, 2010 Feb 01;92(2):490-505***

Instructional Course Lecture

August 15, 2012

**Surgical Timing of Treating**  
**Injured Extremities**

Brett D. Crist, MD1; Tania Ferguson, MD2; Yvonne M. Murtha,  
MD1; Mark A. Lee, MD2

***J Bone Joint Surg Am, 2012 Aug 15;94(16):1514-1524.***  
**doi: 10.2106/JBJS.L.00414**

**INJURY/DEATH CAN OCCUR**

***ANYWHERE* IN THE WORLD**

***ANYTIME*, TO**

***ANYONE...INCLUDING YOU***

**AND YOUR FAMILY**

The **Boston Marathon** bombing was a domestic terrorist attack that took place during the annual Boston Marathon on April 15, 2013.









**Number of deaths: 11**

**Location: [Reno](#)**

**Ground injuries: 69**

**Date: September 16,  
2012**



**REGIONAL TRAUMA  
CARE**

**WALKING WOUNDED  
YOUR PATIENTS**



# ***'POLYFRACTURE' PATIENT***

PATIENTS WITH LOW ISS, NEAR  
NORMAL GCS, WITHOUT HEAD,  
CHEST, BELLY INJURIES AND ***MULTIPLE  
FRACTURES.***

# ***'POLYTRAUMA' PATIENT***

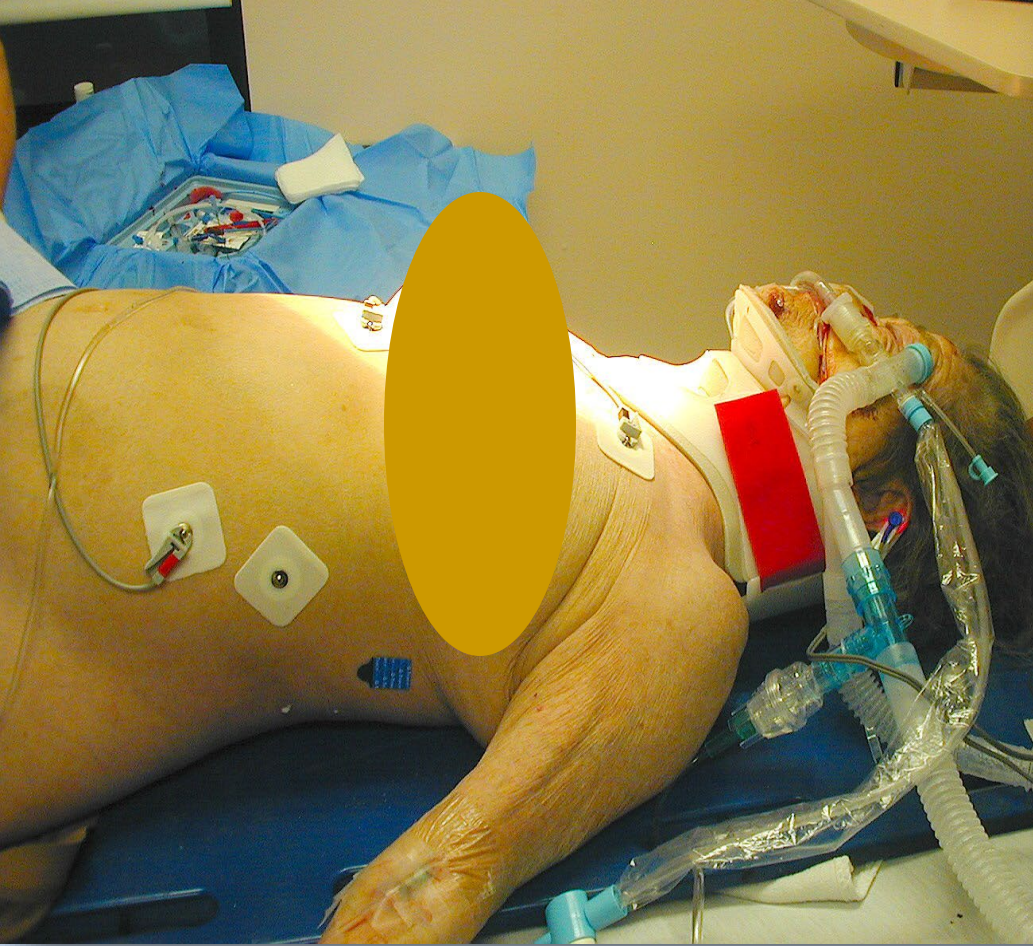
PATIENTS WITH LOW ISS, NEAR NORMAL  
GSC, WITHOUT HEAD, CHEST, BELLY  
INJURIES AND MULTIPLE FRACTURES.

VS.

***POLYTRAUMA PATIENT*** WITH HIGH ISS,  
LOW GSC, HEAD, CHEST BELLY INJURIES

**88 y/o struck by drunk driver in crosswalk; BP 80/40, spontaneous respirations, pupils react to light, no movement in any extremity, acute abdomen, large open thigh laceration, no distal pulse**





**Patient given life support only, fractures splinted, family was notified, died within 8 hours**



***THE POLYFRACTURE PATIENT;  
WHERE DO I START ?***

***ALSO DEPENDS ON YOUR  
TRAUMA TEAM/CALL  
ENVIRONMENT***



# ORTHOPAEDIC CALL TAKERS

- **COMMUNITY CARE** ED = TRAUMA TEAM SUPPORT, MID LEVELS; 'ON CALL' AT HOME- MORE LIKELY TO BE CALLED EARLY FOR ORTHOPAEDIC EMERGENCIES.
- **TRAUMA CENTER-** COMPREHENSIVE SYSTEM PARTICIPANT, RESIDENTS, FELLOWS, MID LEVELS, USUALLY **NOT** PRIMARY RESPONDER IN ED.

## 2 *ESSENTIALS* ..often forgotten

- **TRANSFER AGREEMENTS**
- **BACK UP CALL SUPPORT**



***RESPONSIBILITY OF TAKING  
ORTHOPAEDIC CALL-THE MINIMUM  
REQUIREMENTS***

***ABSOLUTE EMERGENCIES***

**COMPARTMENT SYNDROMES**

**VASCULAR INJURIES W/ ORTHOPAEDIC FRACTURE  
DISLOCATIONS**

**IRREDUCIBLE JOINT DISLOCATIONS**

**MANGLED EXTREMITY**

**HEMODYNAMIC INSTABILITY IN PELVIC FRACTURES**

**WRIST FRACTURE/MEDIAN NERVE**

***RESPONSIBILITY OF TAKING  
ORTHOPAEDIC CALL-THE MINIMUM  
REQUIREMENTS***

***RELATIVE EMERGENCIES***

**LOW GRADE OPEN FRACTURES-TIBIA**

**DISPLACED FEMORAL NECK/TALUS FRACTURES**

**DAMAGE CONTROL**

**PILON – PLATEAU FRACTURES**

**THE POLYFRACTURE PATIENT;  
I just got called.....**

# WITH THE ABSOLUTE EMERGENCIES



# DESPITE LEVEL OF CARE- BE A RESPONSIBLE TRAUMATOLOGIST-

- Life threatening conditions are identified and management is started simultaneously.

a- airway

b- breathing and

c- circulation and *hemorrhage control*

d- disability: neurologic status

e- exposure: completely undress the patient

**f- fractures...**

# COMPLETE EXAM, RECTAL





# **“WHAT HAPPENED?”**

**Can provide information about the airway, breathing and neurological status, while the examiner can begin the orthopaedic trauma assessment**

**Dictate that in the medical record**

# OBVIOUS VASCULAR INJURY



# Circulation

- Identifiable bleeding controlled with direct pressure, compression dressings, ace wraps
- Tourniquets are rarely indicated except for traumatic amputations or when direct pressure will not control hemorrhage
- ***TO THE OR***



# ORTHOPAEDIC 'NOW' PRIORITIES

- OPEN FRACTURES
- *PELVIC RING BLEEDING- BINDER, ANGIO,*
- FEMURS
- *AMPUTATIONS-STOP THE BLEEDING*
- COMPARTMENT SYNDROMES
- CAUDA EQUINA
- EXTREMITIES WITH  
NEURO/*VASCULAR*/DISLOCATIONS

**NOW**

# ORTHOPAEDIC 'SOON' PRIORITIES

- *OPEN FRACTURES- AM TRAUMA ROOM*
- PELVIC RING
- *FEMURS- TRACTION, FRAMES, IM SPLINT*
- AMPUTATIONS
- *COMPARTMENT SYNDROMES- RELEASES*
- CAUDA EQUINA
- EXTREMITIES WITH  
NEURO/VASCULAR/DISLOCATIONS

**SOON**

# ORTHOPAEDIC PRIORITIES

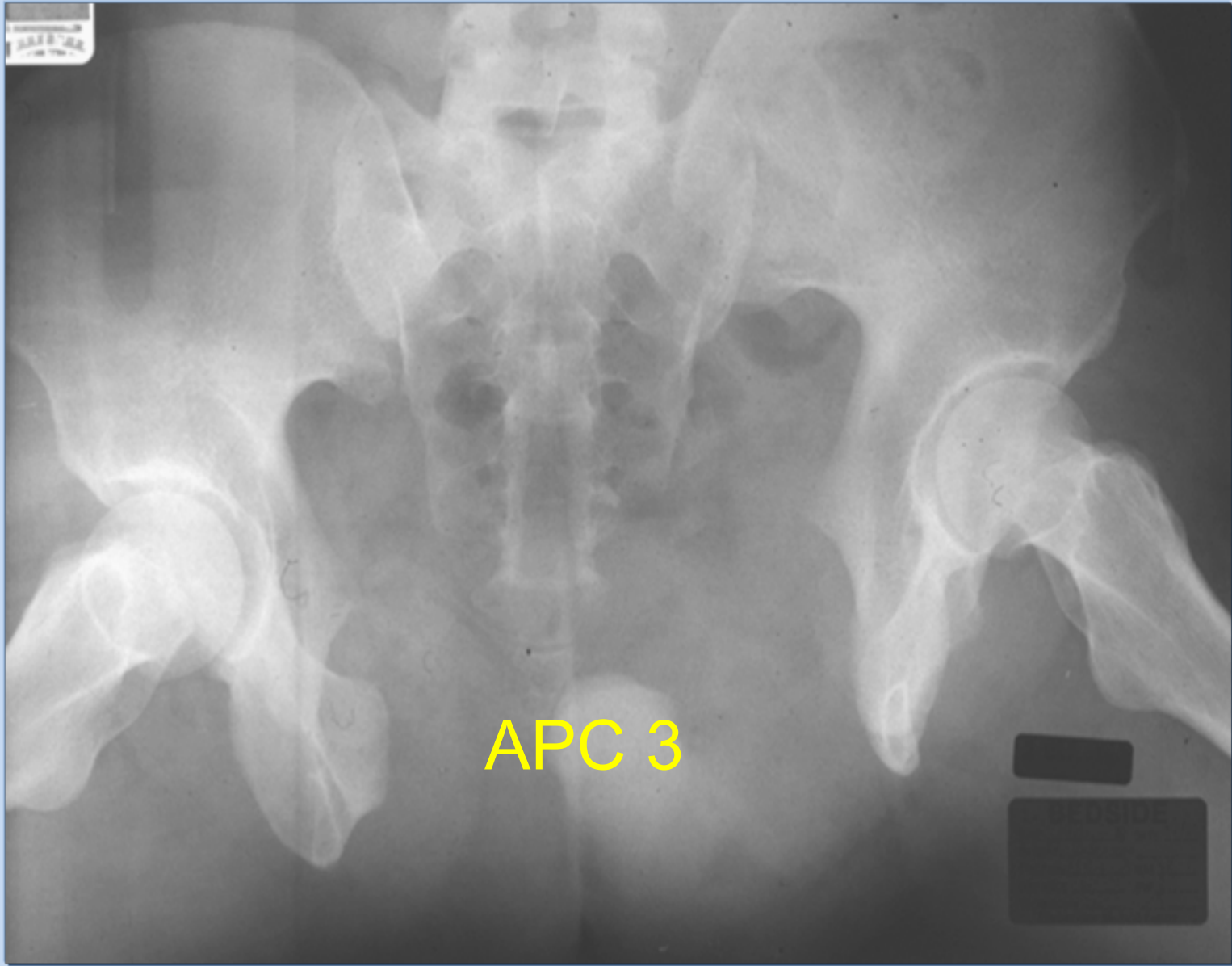
- OPEN FRACTURES
- PELVIC RING
- FEMURS
- AMPUTATIONS
- COMPARTMENT SYND
- **CAUDA EQUINA**
- **EXTREMITIES WITH NEURO**

WHEN  
WORKED UP

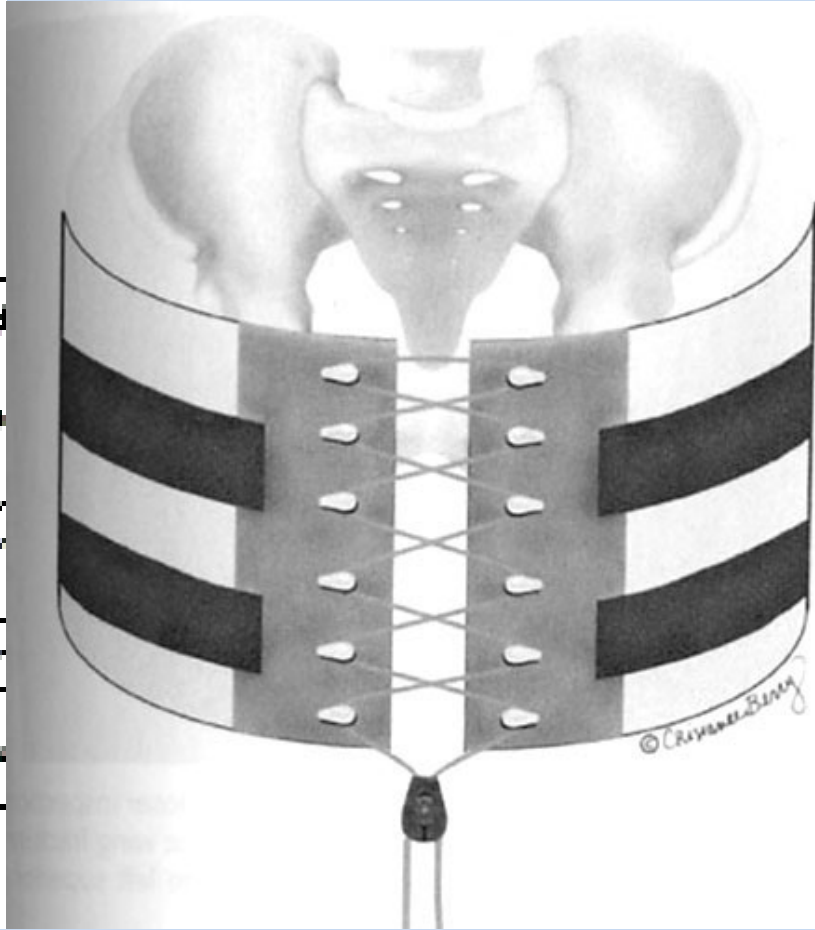
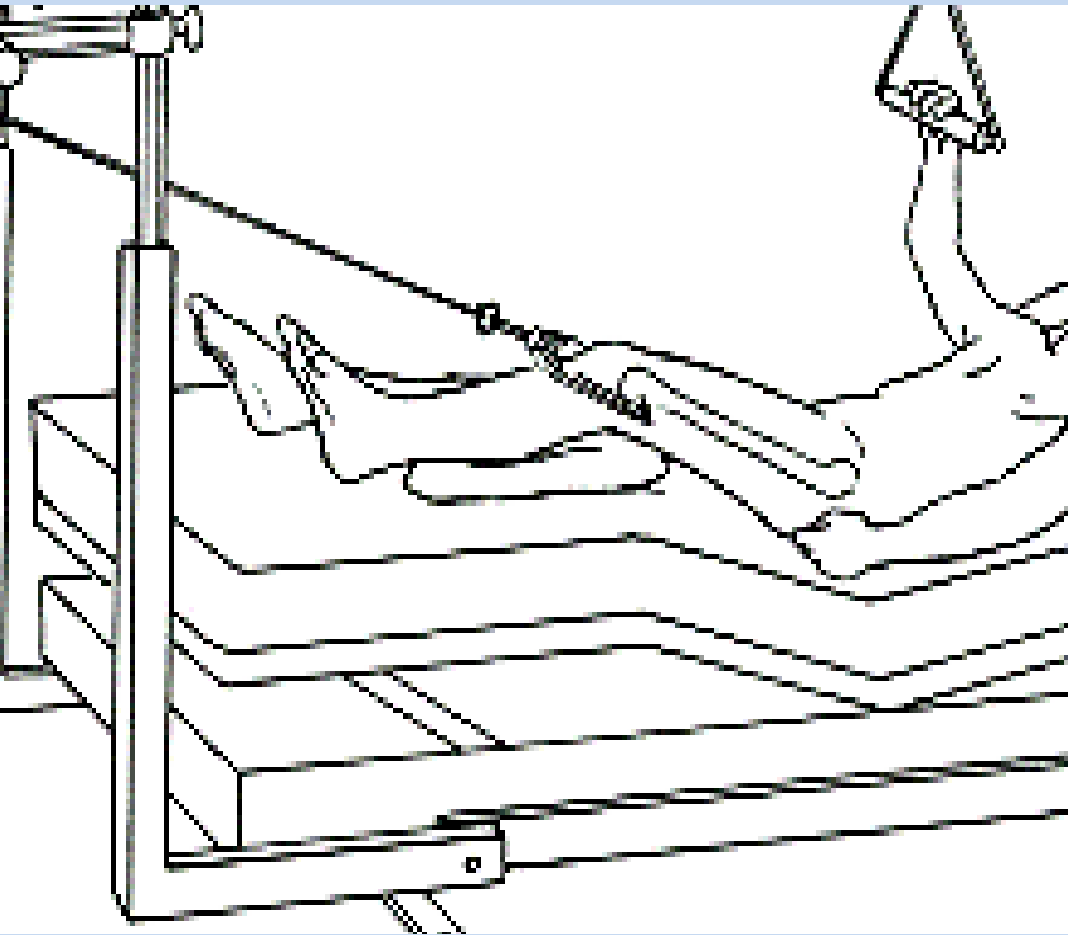
***EXAMPLES***

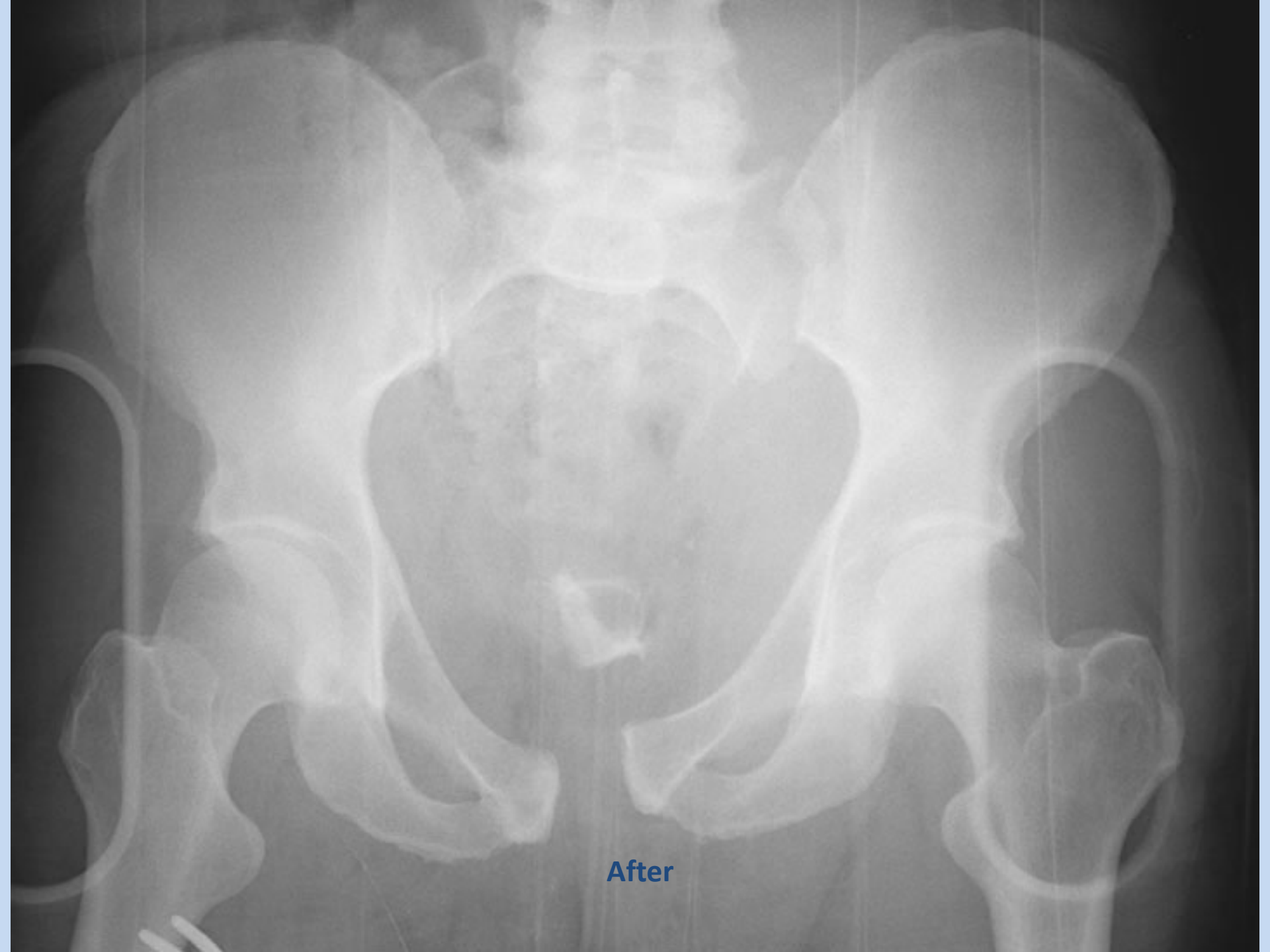


# THE PELVIS



# PINS AND BINDERS

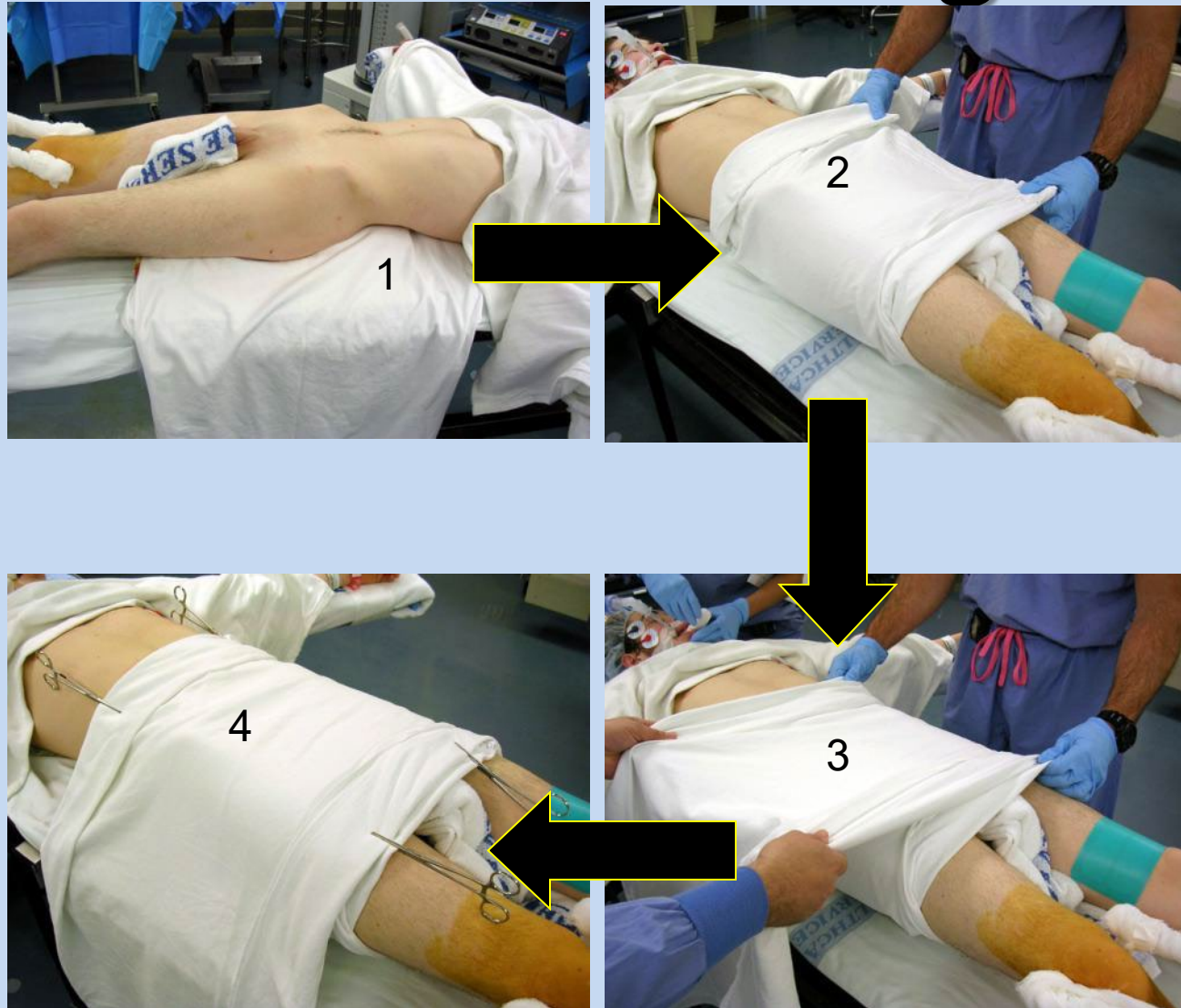




After

# Circumferential Sheeting

- Supine
- 2 “Wrappers”
- Placement
- Apply
- “Clamper”
- 30 Seconds





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VIDEOS IN CLINICAL MEDICINE

# Technique for Temporary Pelvic Stabilization after Trauma

**Authors:** Taufiek K. Rajab, M.D.,  
Michael J. Weaver, M.D., and  
Joaquim M. Havens, M.D. [Author  
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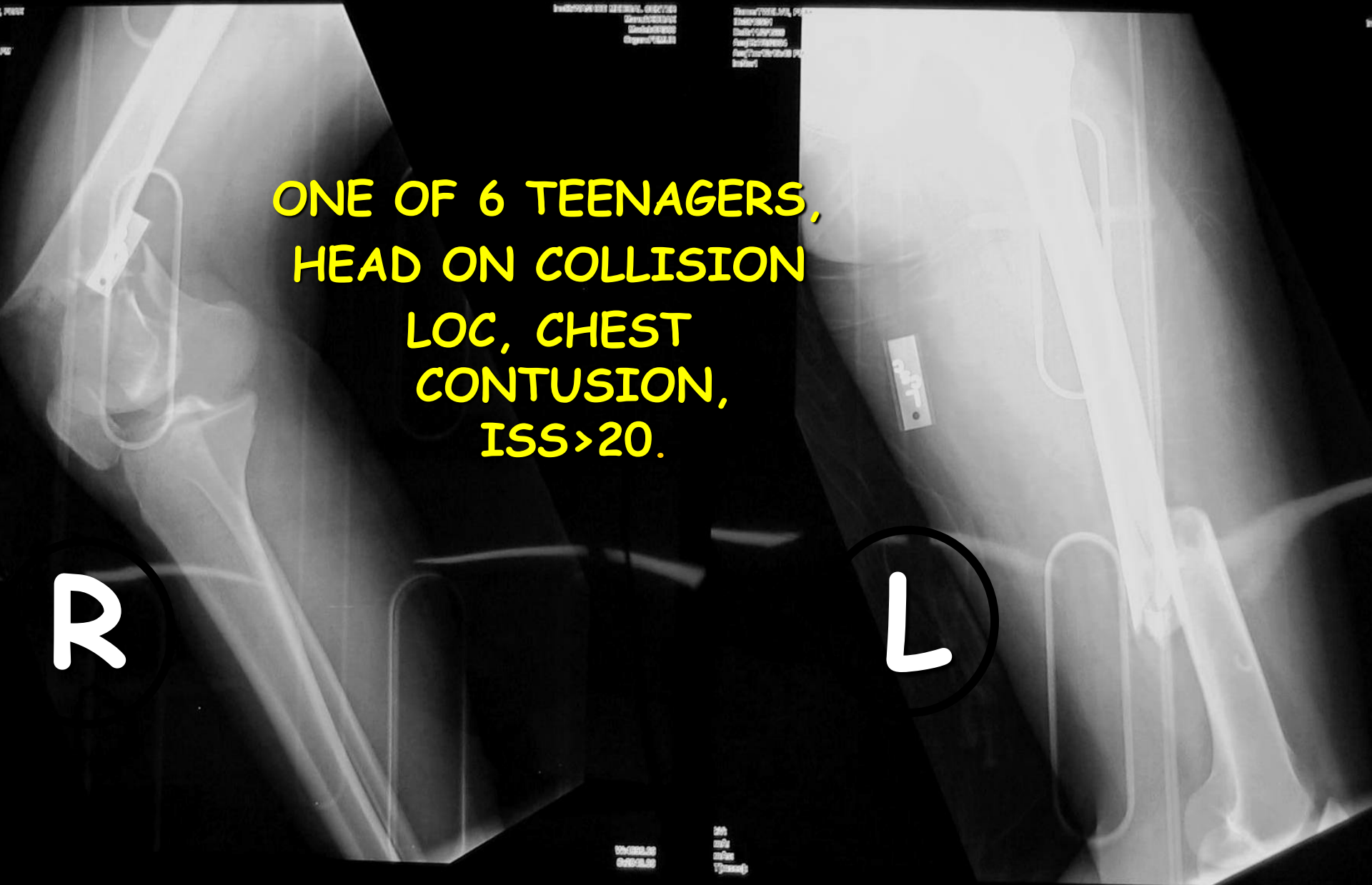
# BEWARE...



ONE OF 6 TEENAGERS,  
HEAD ON COLLISION  
LOC, CHEST  
CONTUSION,  
ISS > 20.

R

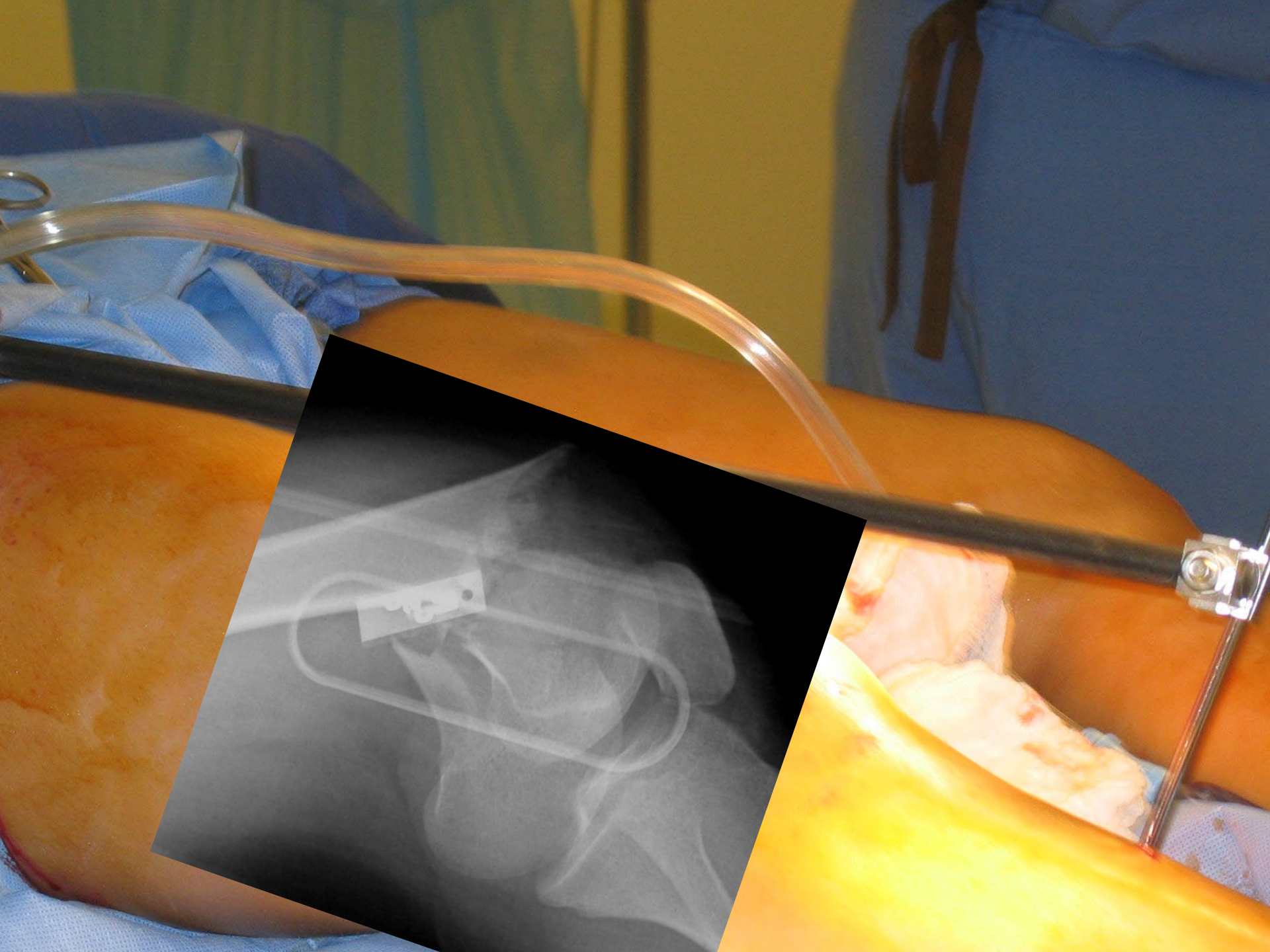
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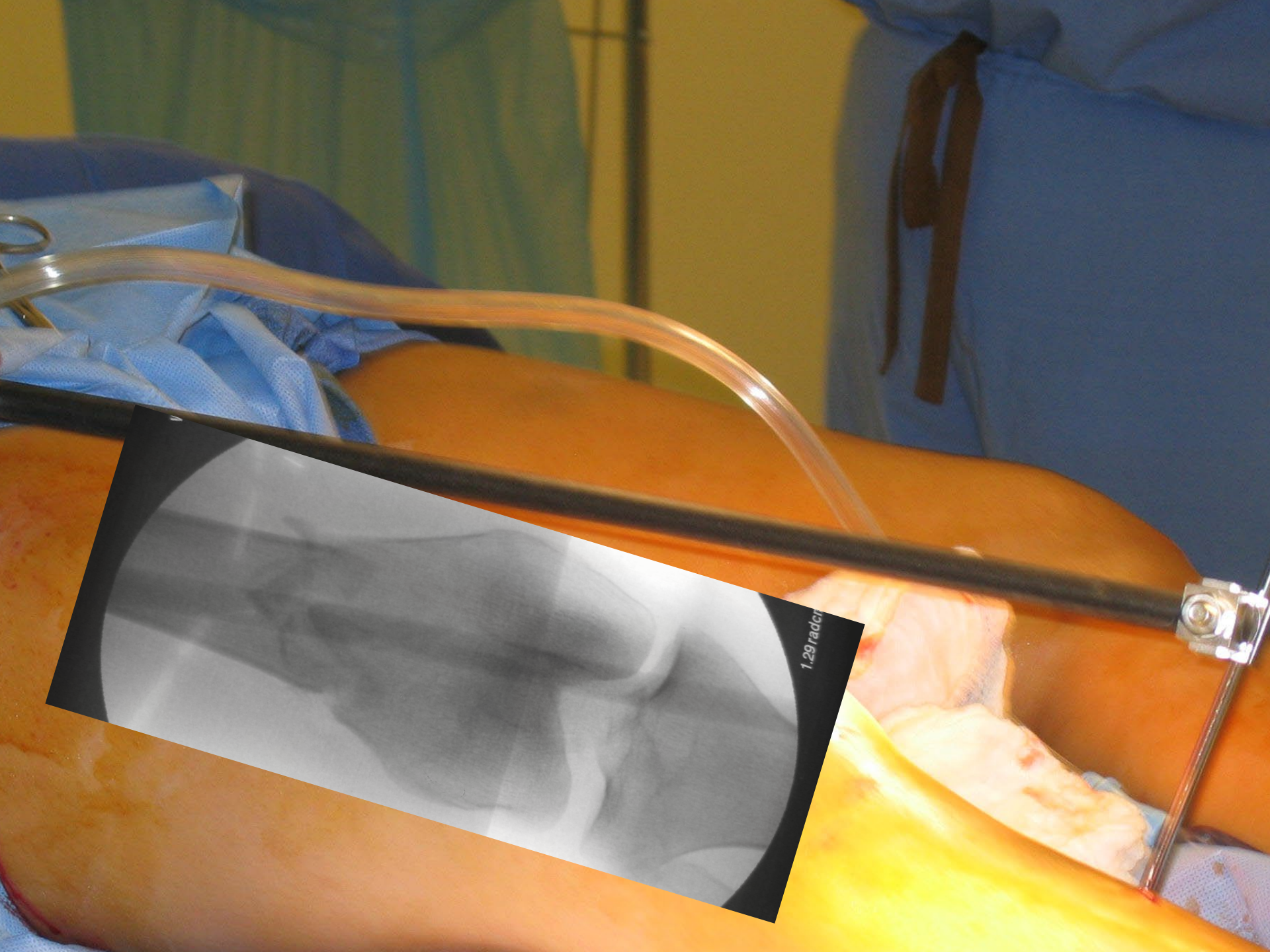


# DAMAGE CONTROL ORTHOPAEDICS





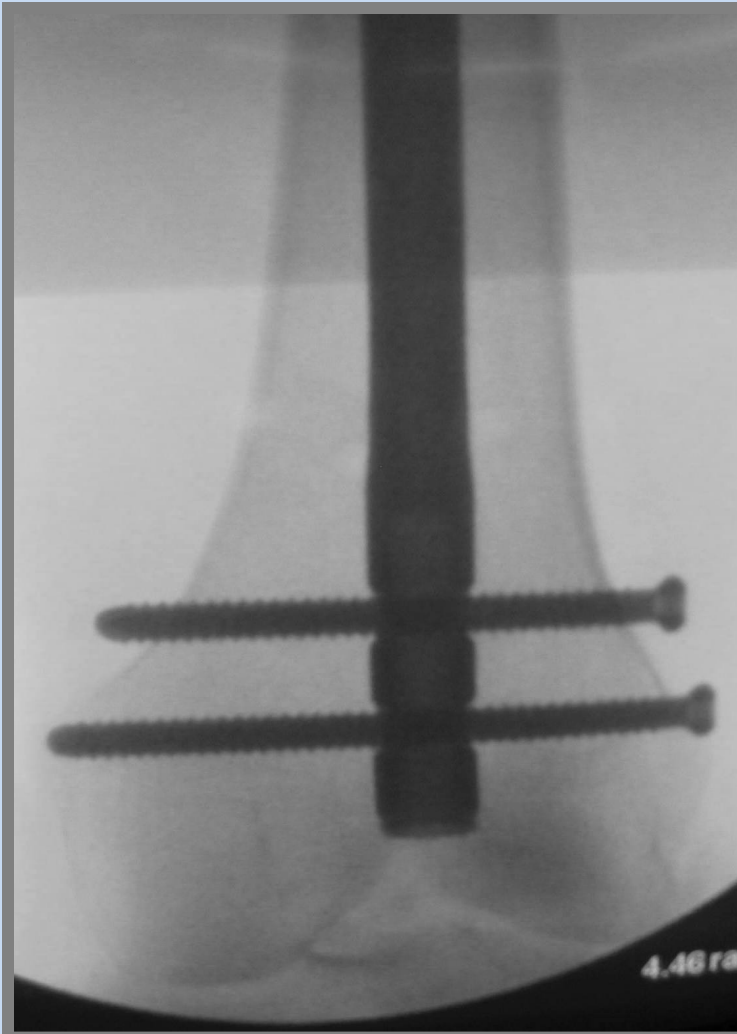




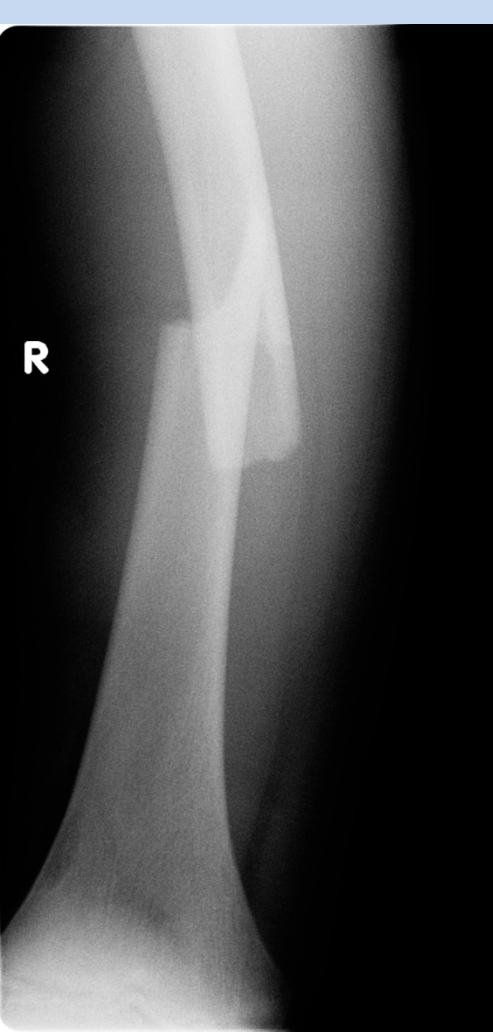




- **POSITIONING:**  
~**SUPINE, TRAUMA PT.**  
~**C-ARM WITH RADIOLUCENT TABLE, and A- FRAMES**



# PEDS FEMUR FRACTURES



# OUR BEST SOFT TISSUE FRIEND

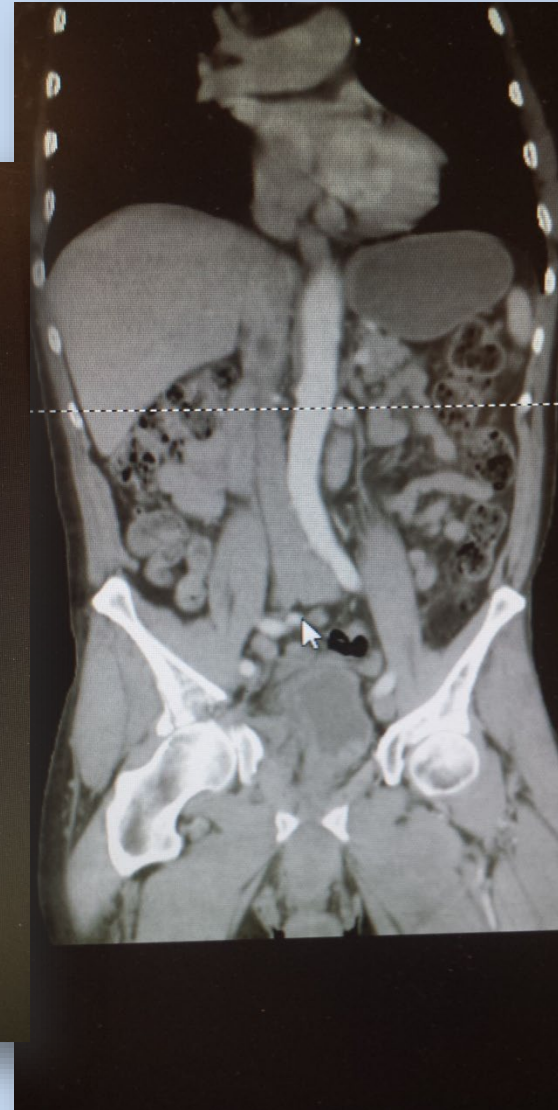
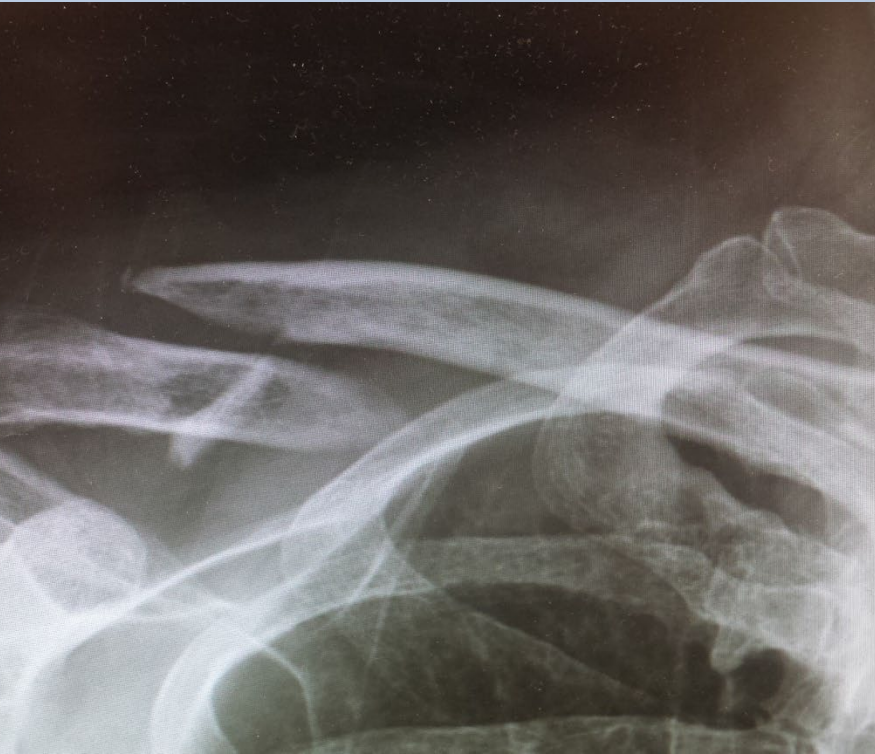


# ***R.F. POLY FRACTURE PATIENT***

- ***71 YO-MOTORCYCLE*** CRASH-NO LOC, TRANSPORTED AWAKE AND ALERT TO REGIONAL TRAUMA CENTER 9:00 pm
- PMX- HYPERTENSION, NON SMOKER, NO ALLERGIES, VITS, HERNIA, ELBOW FX 09'
- PE- AWAKE, NON LABORED BREATHING, SOFT BELLY, RIGHT CLAVICLE/THUMB CLOSED, RIGHT HIP PAIN TO ROM.
- LOW ISS, GCS>13



**CLOSED RIGHT CLAVICLE; CLOSED T-TYPE ARTICULAR RIGHT THUMB : ANTERIOR COLUMN NON DISPLACED HEMI POSTERIOR ACETABULAR FRACTURE**

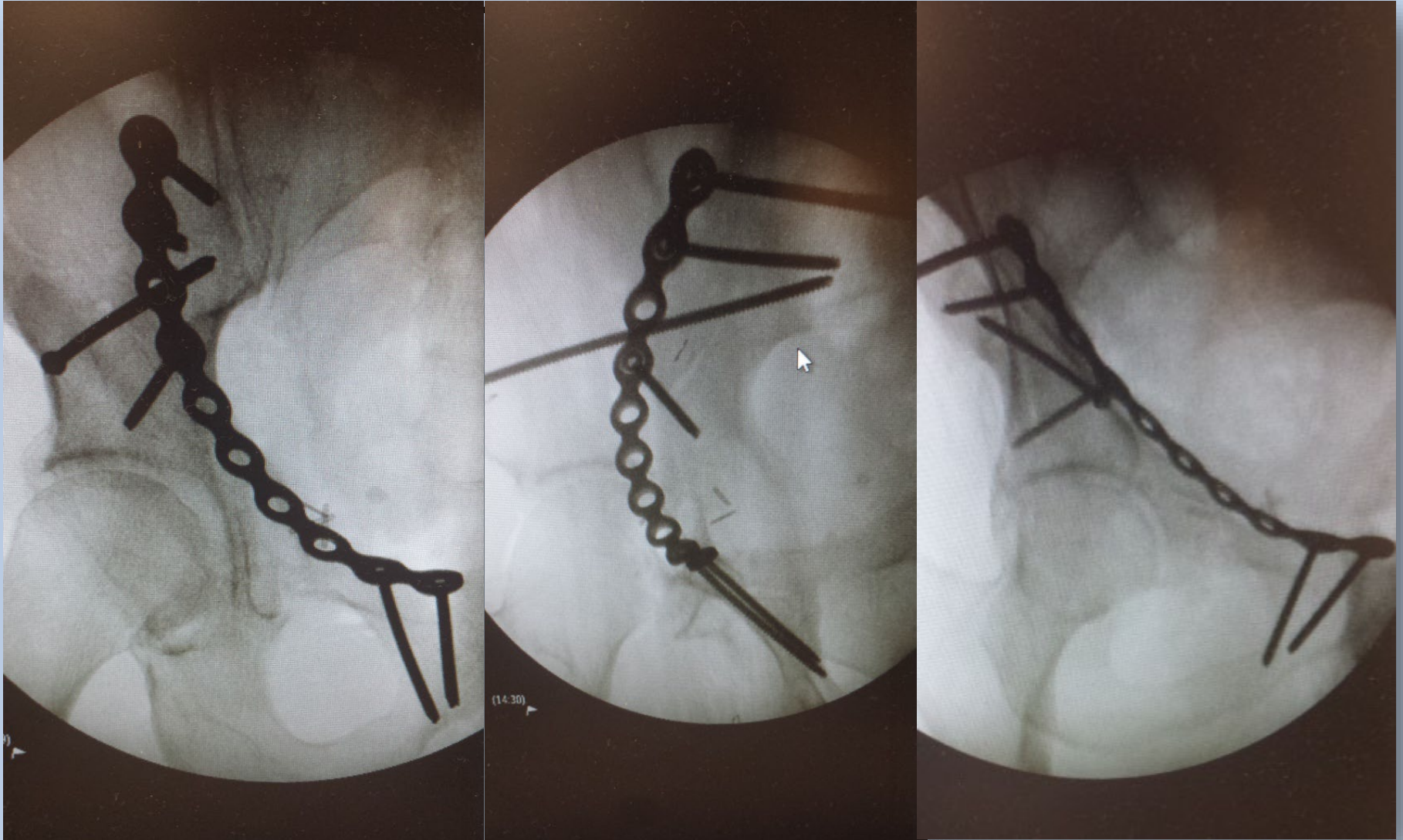


# INITIAL TREATMENT

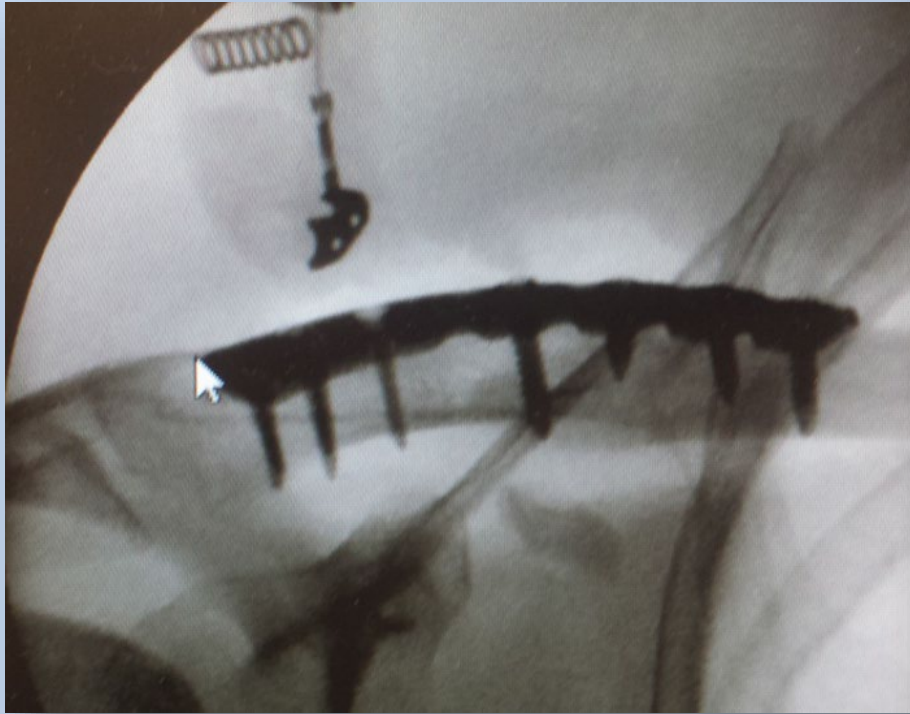
- **SCANNING CT NEGATIVE HEAD,CHEST, BELLY, CLEARED BY TRAUMA TEAM, MEDICINE EVAL.**
- **DISTAL FEMORAL TRACTION PIN, THUMB SPLINTED, SLING FOR CLAVICLE**
- **TO CT FOR PELVIS/ACETABULAR RECONSTRUCTIONS NEXT MORNING SUNDAY**
- **SURGERY MONDAY AM (36 hours) WITH TRAUMA TEAM.- ORDER-PELVIS, CLAVICLE, THUMB**

# PELVIS- STOPPA, 1<sup>ST</sup> WINDOW

## ILIOINGUNIAL



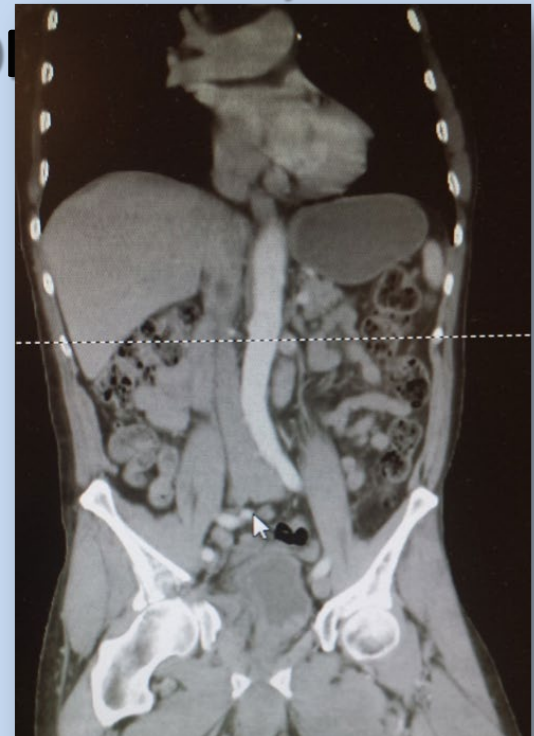
# FOLLOWED BY..



# PRINCIPLES

**GERIATRICS**- FASTEST GROWING SEGMENT OF US POPULATION=INCREASING TRAUMA #'s.

LOW ISS, HIGH GCS **STILL AT RISK PATIENT**  
AGE, MECHANISM=TRAUMA ACTIVATION,  
MEDICINE EVALUATION, ICU MO



# INITIAL TREATMENT

- ***BEWARE OF THE UNDER-RESUSCITED GERIATRIC PATIENT***

# FINALLY...DON'T FORGET

## YOUR *Secondary Survey*

- ***Rectal exam*** (R)
  - tone, sensory, prostate injury
  - if abnormal (i.e. high-riding prostate), do not pass foley-consult Urology
- ***Extremity exam*** (E)
  - palpate for crepitus, swelling, pain, instability, range of motion
- ***Neurological*** exam-document all findings (N)

# ***YOUR CALL NIGHT IS OVER ..***

- ***YOU WERE A GOOD DOCTOR..A,B,C'S***
- ***STOP THE BLEEDING***
- ***REDUCE AND SPLINT FRACTURES***
- ***WOUND VACS***
- ***OR FOR SEVERE, CONTAMINATED FRACTURES***
- ***STABILIZE THE FEMUR AND PELVIS***
- ***SECONDARY SURVEY 'REN'***
- ***HEADING HOME....JOB WELL DONE***