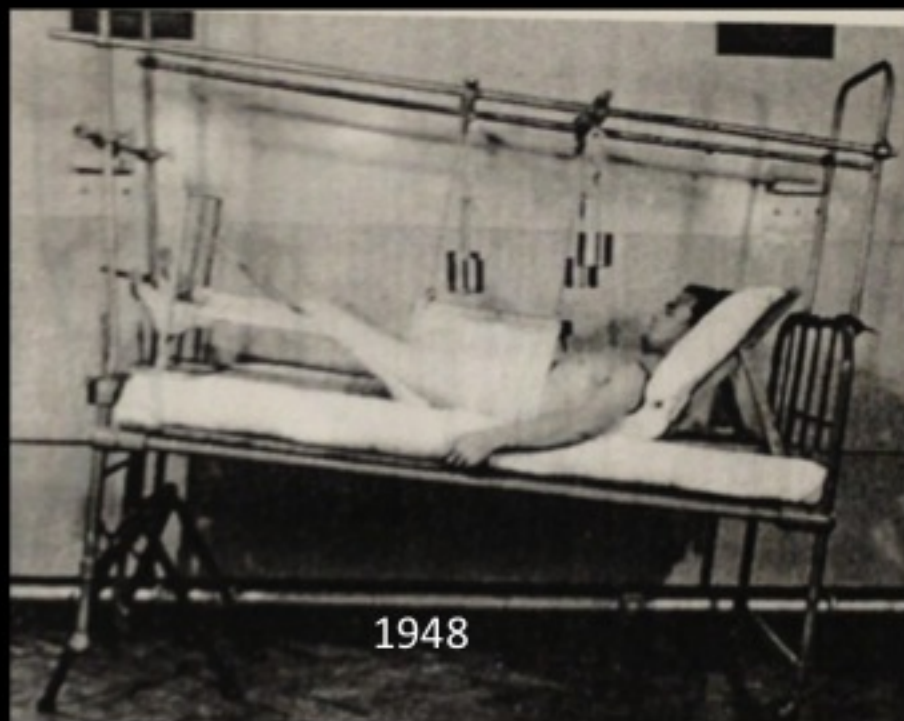


Pelvic Ring Injuries

Treatment

August 2013



Outcome:

.How well pelvic bones are treated

NB. POLYTRAUMA patients

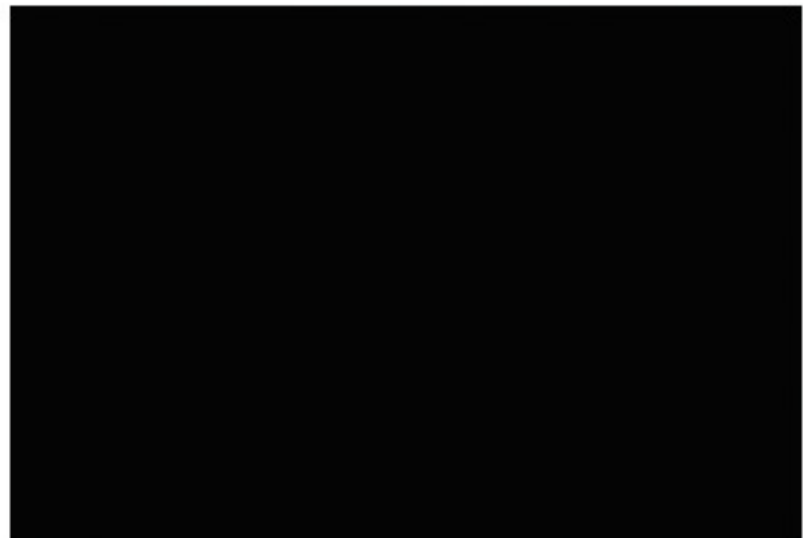
Associated injuries

- urological 15%

-neurological

sacral fracture (20-75%)

-other limb and spine injuries



Holdsworth 1948

50 patients

Rx pelvic sling +/- traction

Most did not return to work

Si joint dislocations had worse outcomes .

Better results

Sacral fractures

Iliac wing fractures

Bony vs ligamentous injuries



Slatis Frame

Slatis ,Huittinen

1972

163 Double vertical fracture

impaired gait 32%
low back pain 17%

Only 18% had hemipelvic displacement

Most were vertically stable

2013 : Stable lat compression injuries

Semba, Yasukawa Gustilo 1983

Critical analysis 53 Malgaigne fractures of the pelvis

31% impaired gait

26% backpain

64% symptomatic

Most were stable fractures.

(more than 50% had less than 5mm displacement)

1970s -1980s

Pelvic Fracture = External fixator

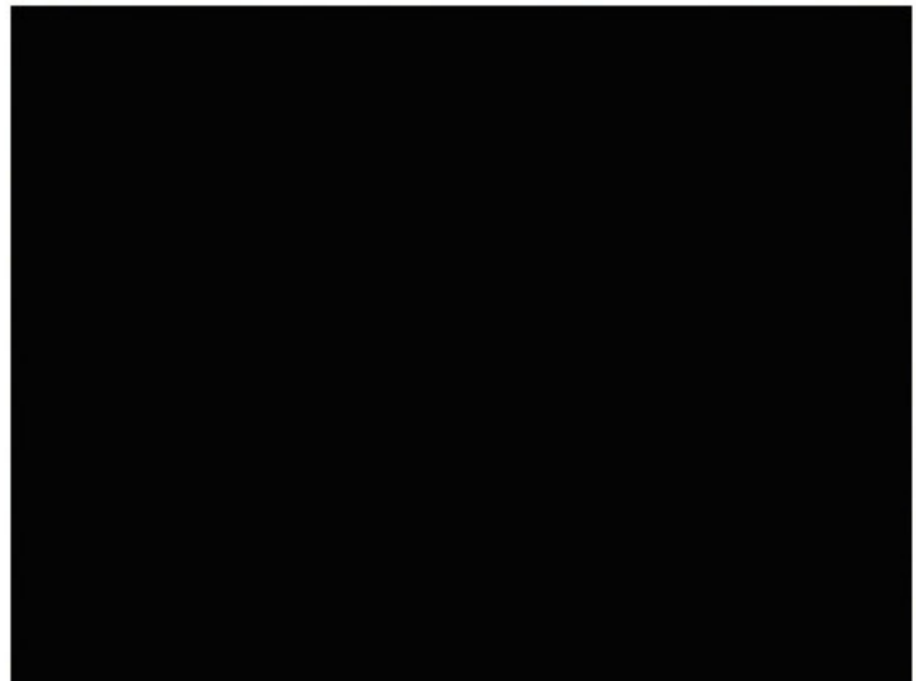
Increasingly complex frames

Slatis. Pittsburgh.

Early application as part of resuscitation

Not adequate for definitive treatment for unstable patterns

Risk of potentiating problems in lat compression injuries



Musculo-Skeletal Outcome :

Bony or ligamentous

Ring Stability partially stable,
unstable.

Displacement of fracture

Union of fracture

McCowan S, Kellam J, Tile M: COA 1986

Unstable Pelvic ring Disruptions:

Results of open reduction and internal fixation.

25% complication rate



Tornetta Matta 1996

77 pts type 3 44mths

30% acetabular fractures

38% neurological injuries

Outcome

67% return to previous work

50% no pain

13% pain only with very strenuous activities

Pohlemann et al 1996

Type B 80% good/excellent

Type C 27% good/excellent

Tournetta

Type 2 96% good/excellent
83% RTW in less than year

Browner

Type 3
50% not working at one year

GOALS:

Anatomical reduction:

- Equal leg lengths
- No sitting imbalance
- Heal better
- Decrease pelvic pain
- Less obstetric complications

Functional:

- Ability to return to work
- Return to recreational activities

Controversy :

Indications for surgery.

Techniques.

Determining stability of a pelvic ring injury.

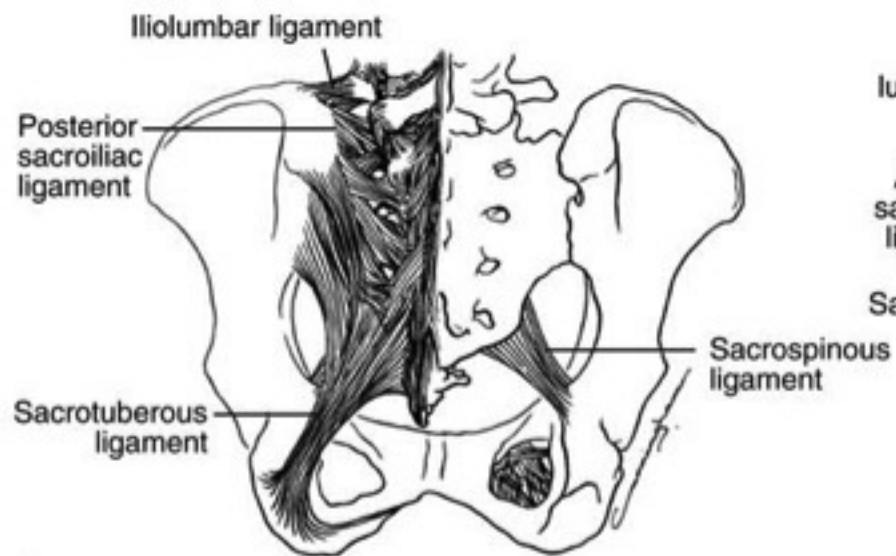
Xray:

Helps

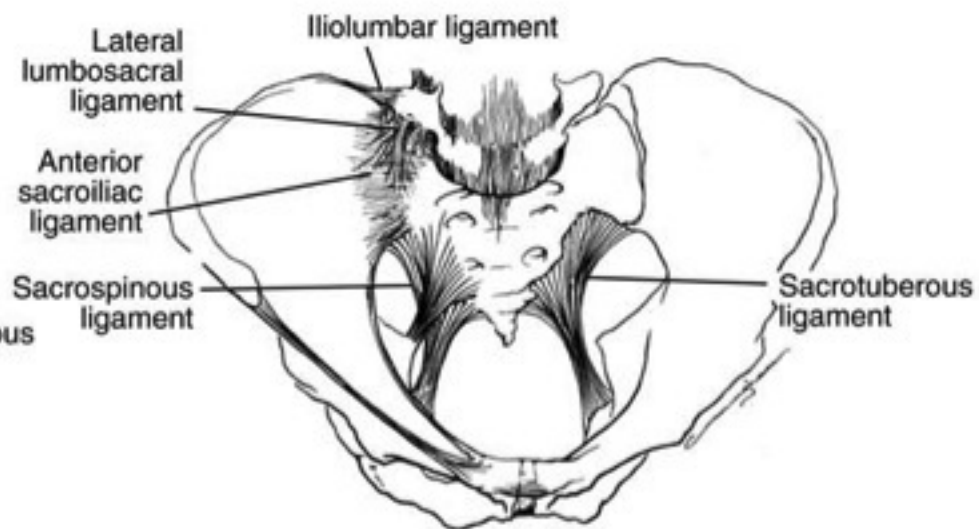
Predict those who will displace with non operative Rx

Define rotational vs vertical instability

Define indications for surgery.



A



B

Classification : Young and Burgess

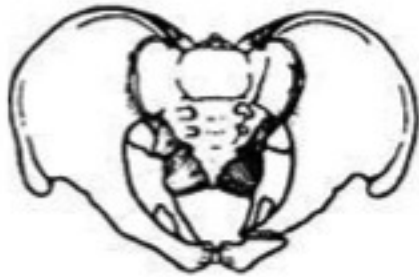
Implications:

Blood loss requirements

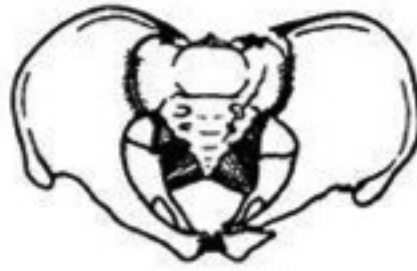
Injury patterns

Mechanistic

Treatment decisions



LC - I



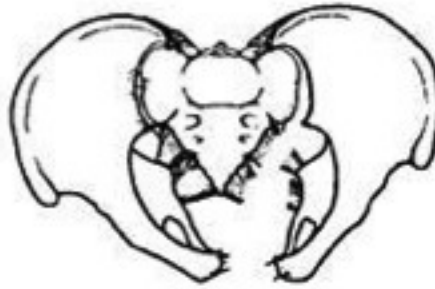
LC - II



LC - III



AP - I



AP - II

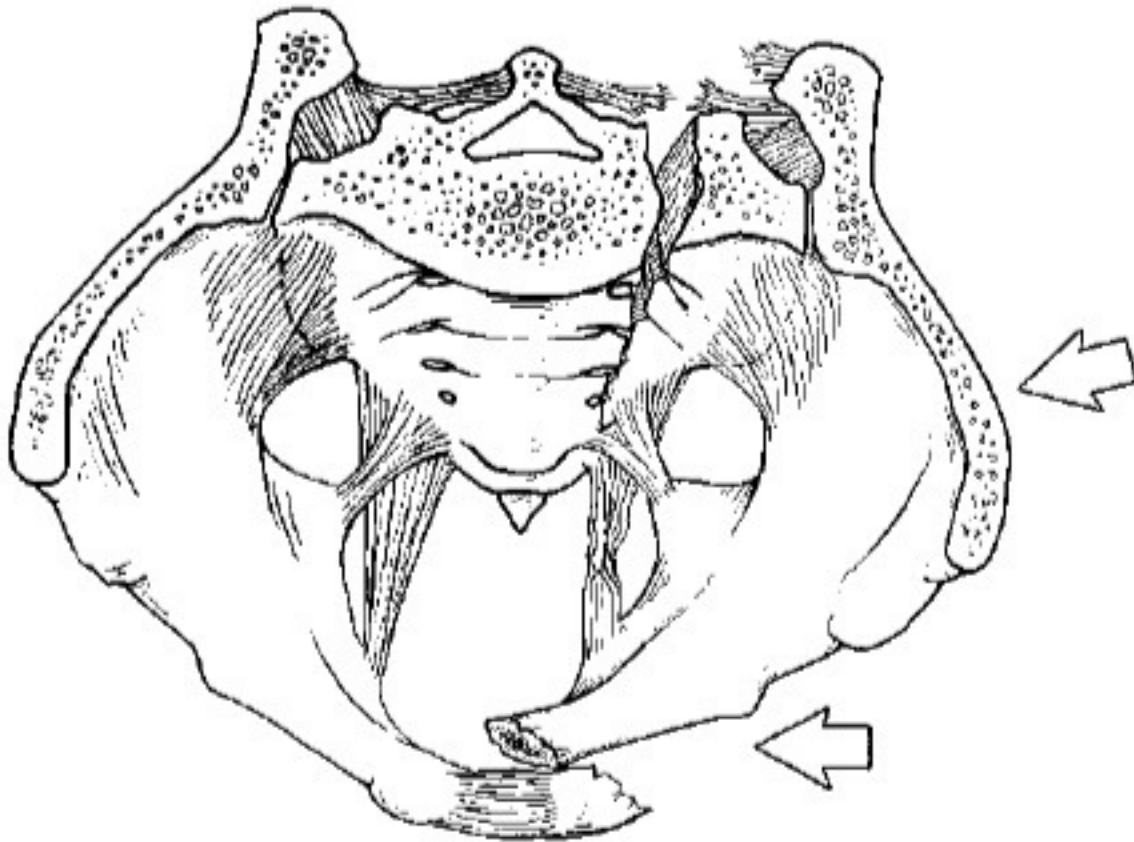


AP - III



Vertical Shear

Lateral compression force

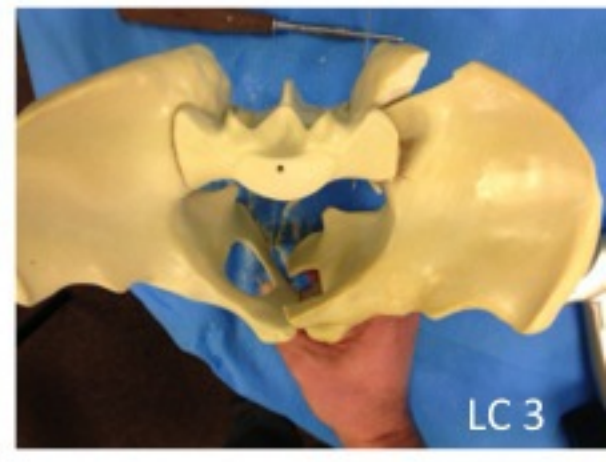
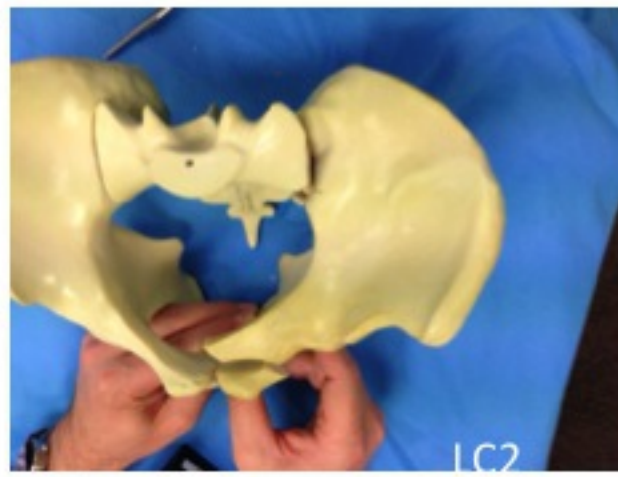
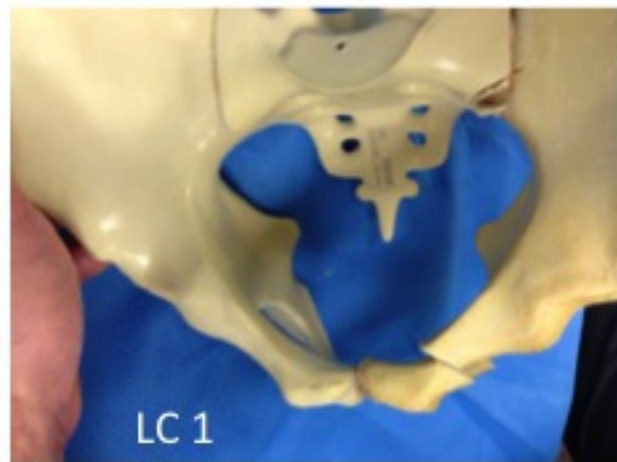
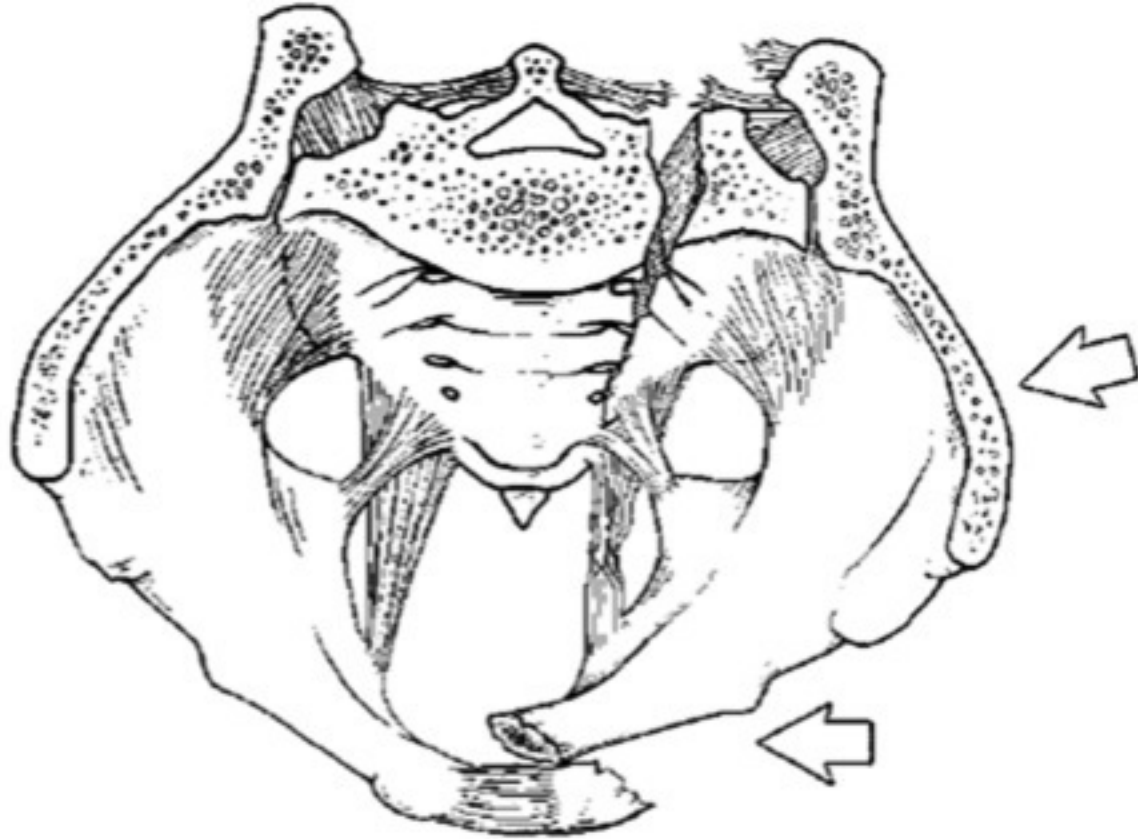


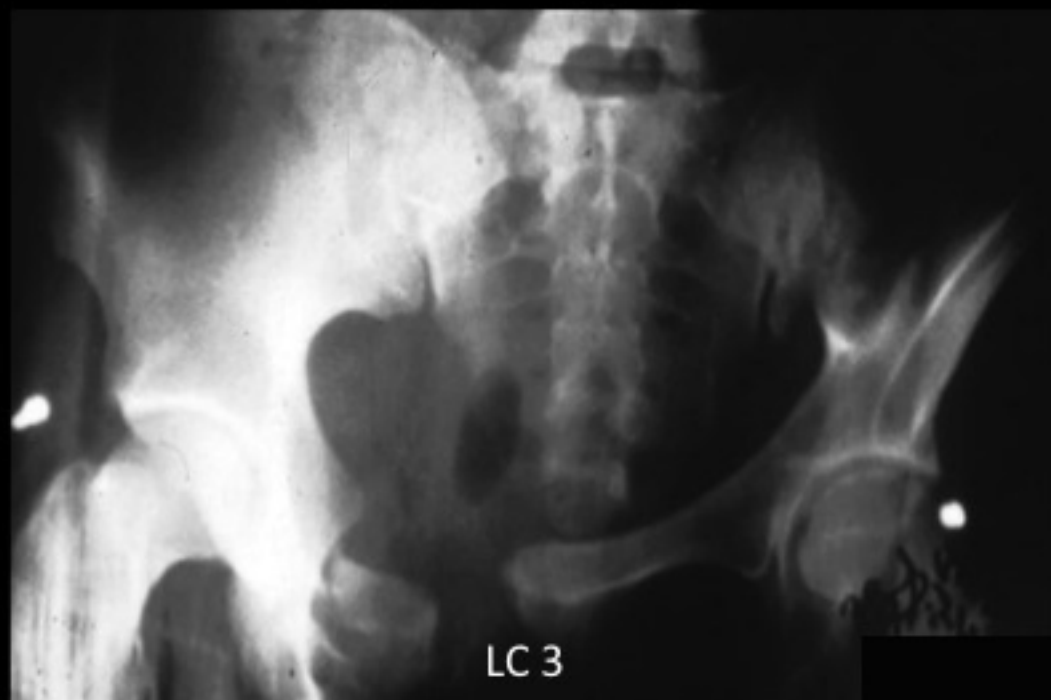
Also:

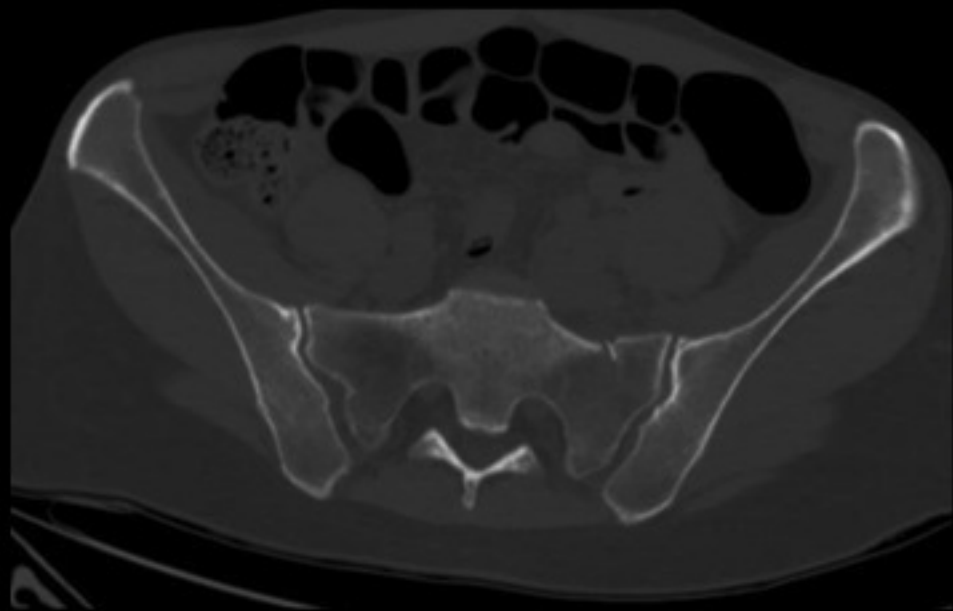
Pelvic organ laceration

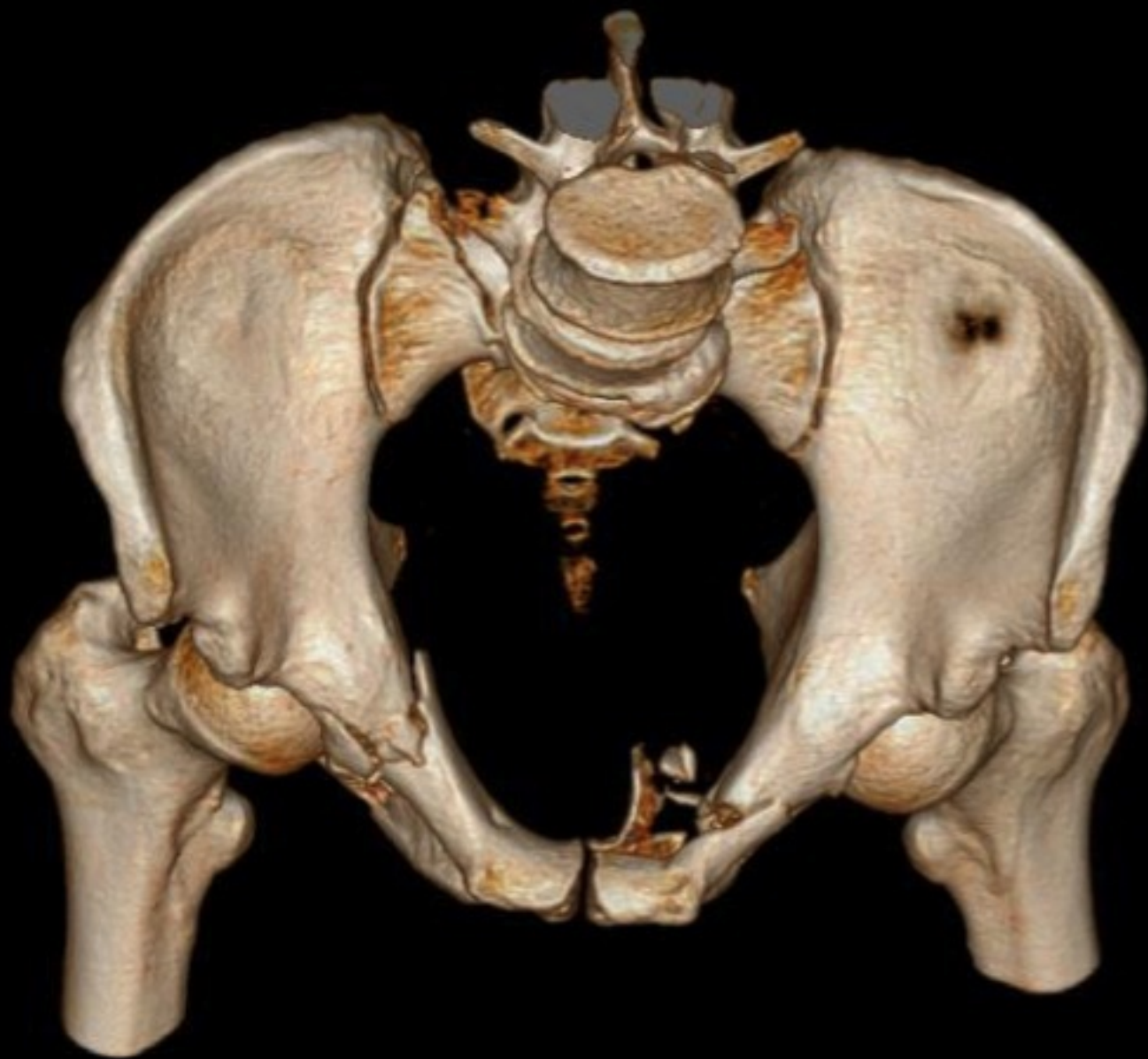
Chest injury

Head injury

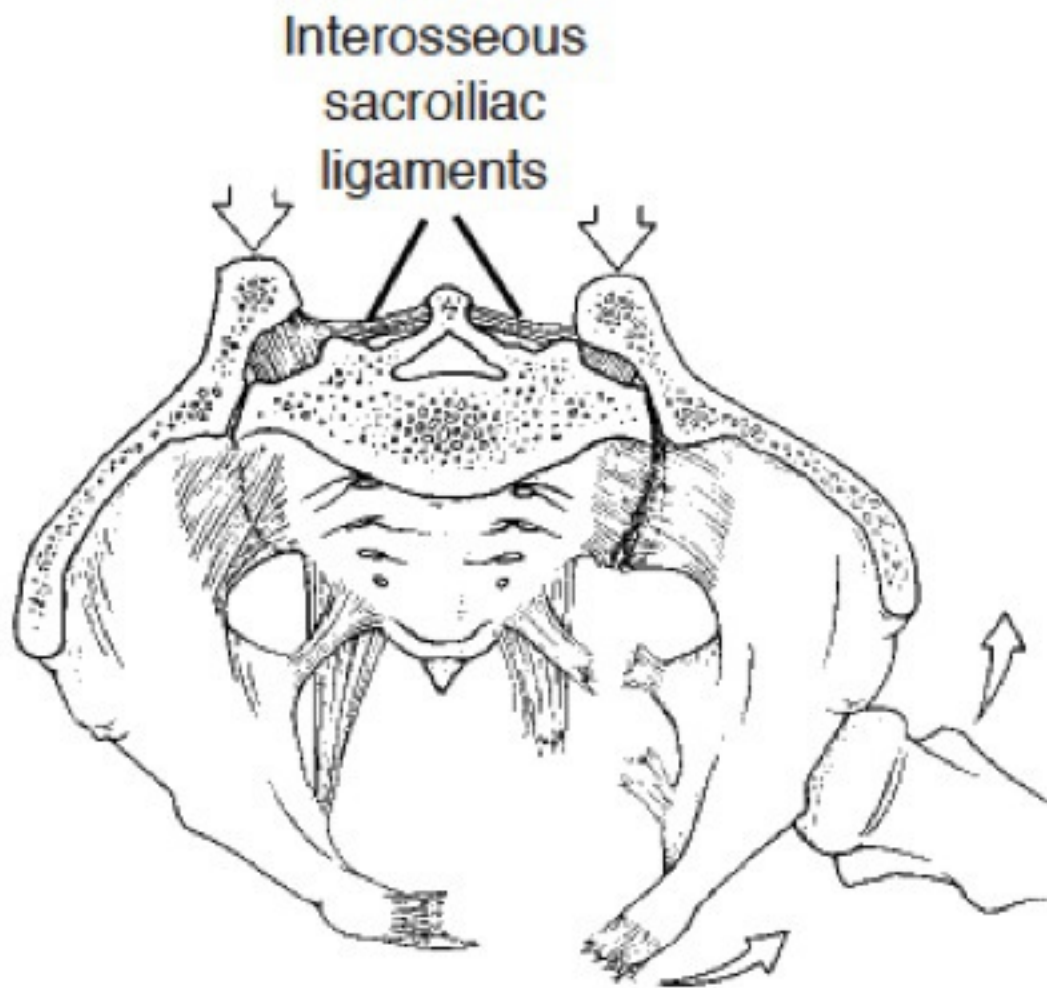








External rotation force – (Open book)



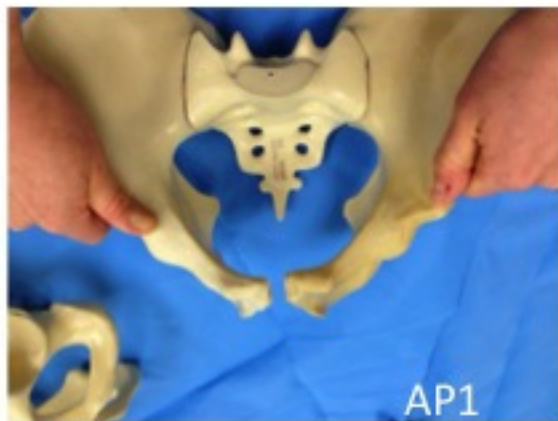
Associated with

Vessel injury
Nerve avulsions

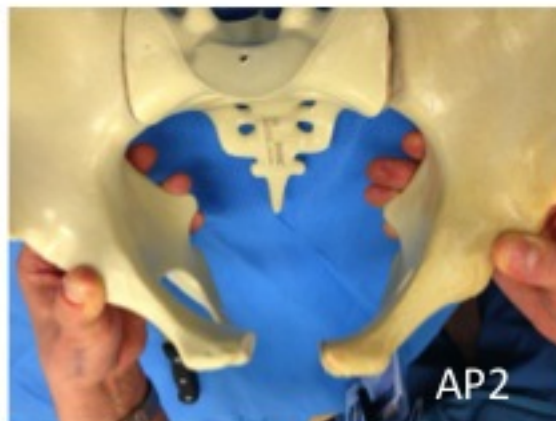
Abdominal organ injury



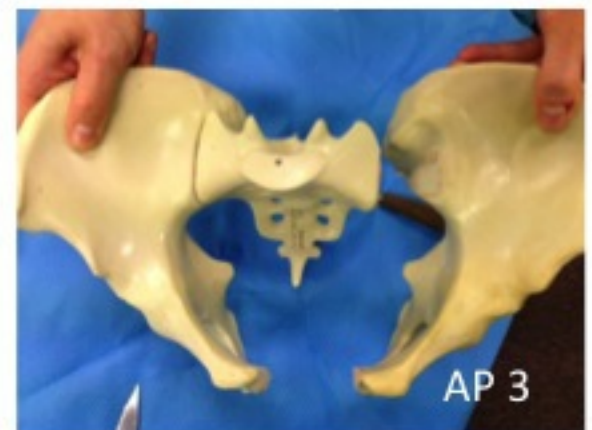
Posterior disruption

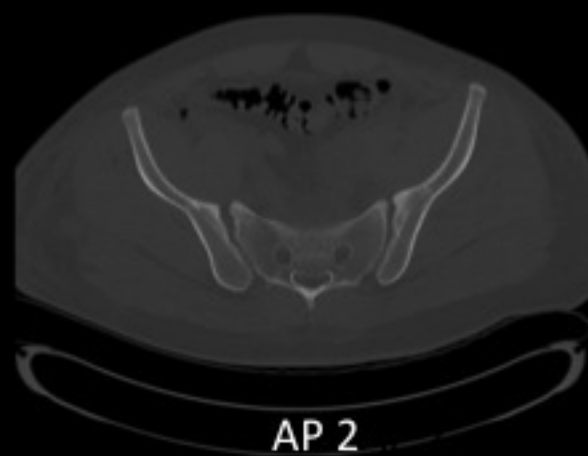
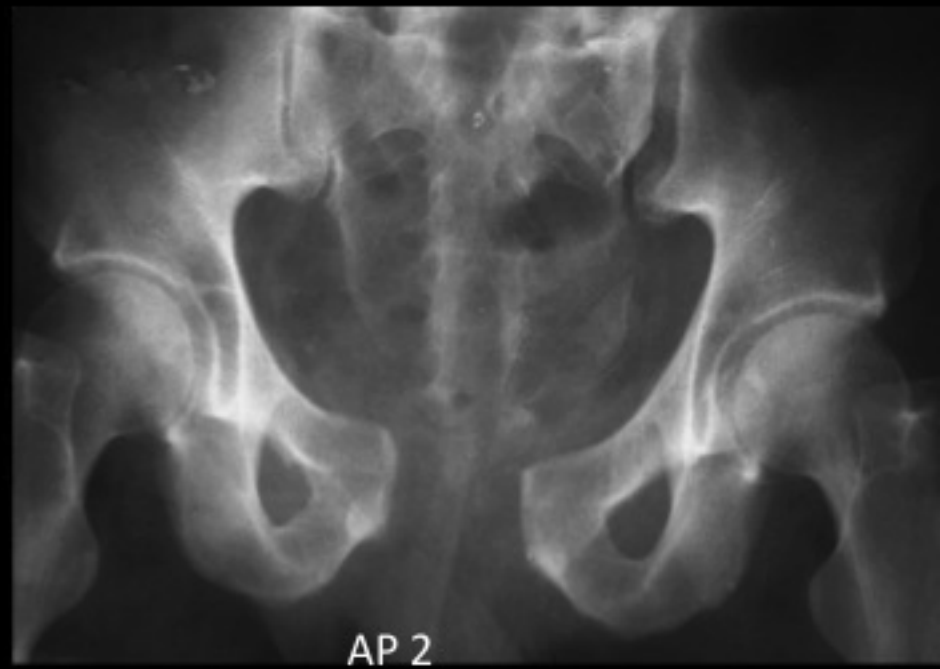


Less than 2cm

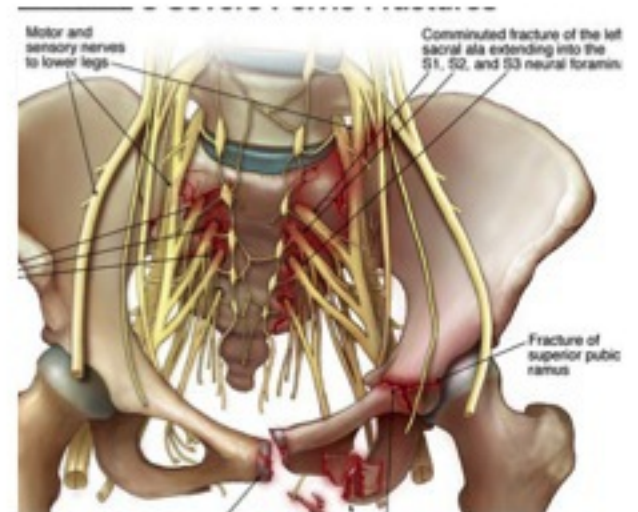
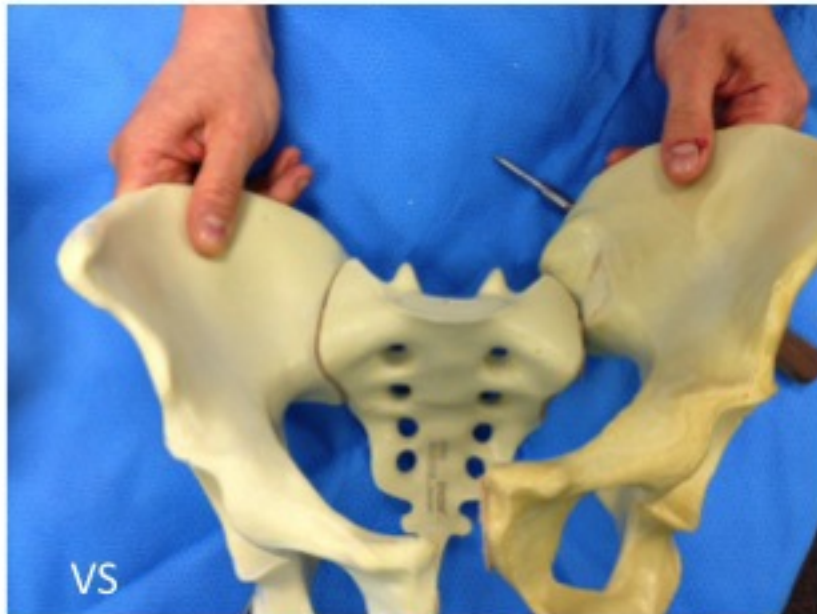
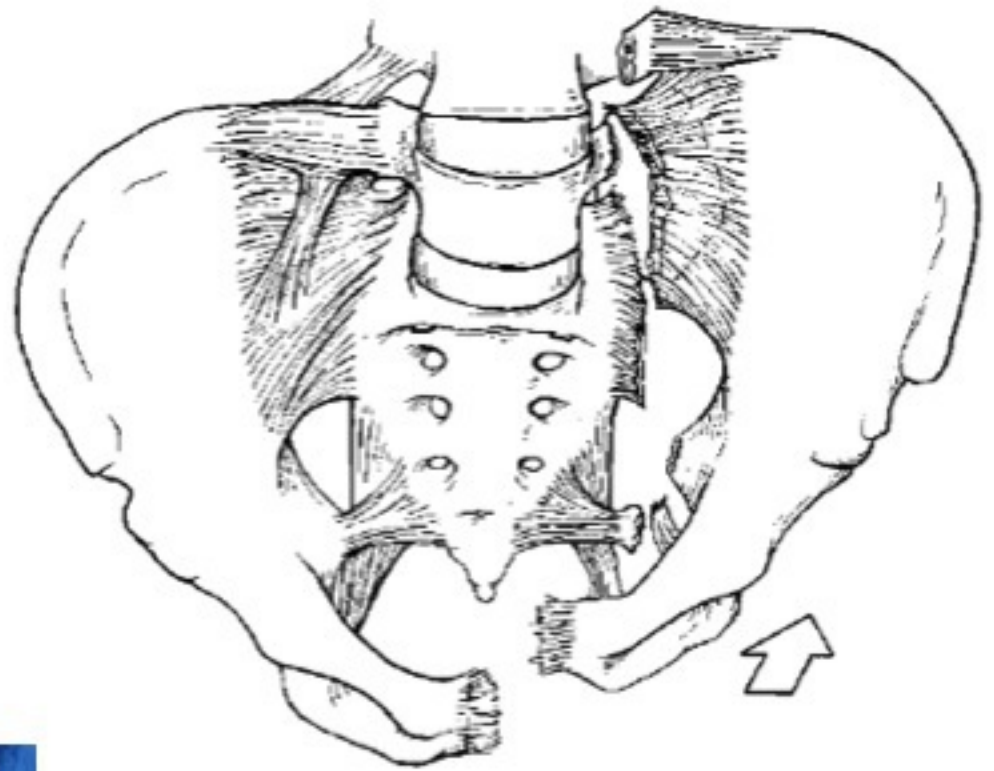


Greater than 2 cm





Vertical shear

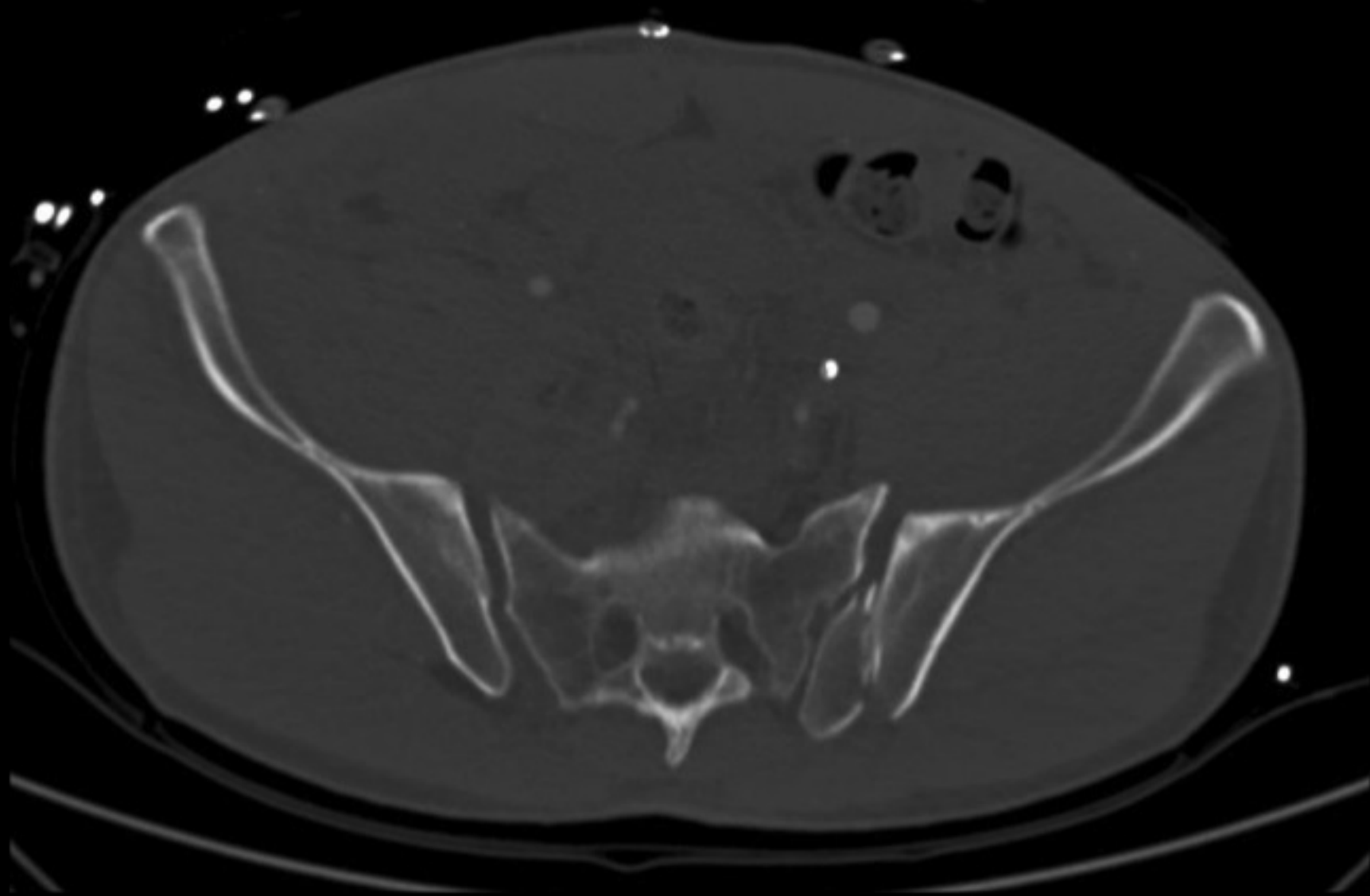


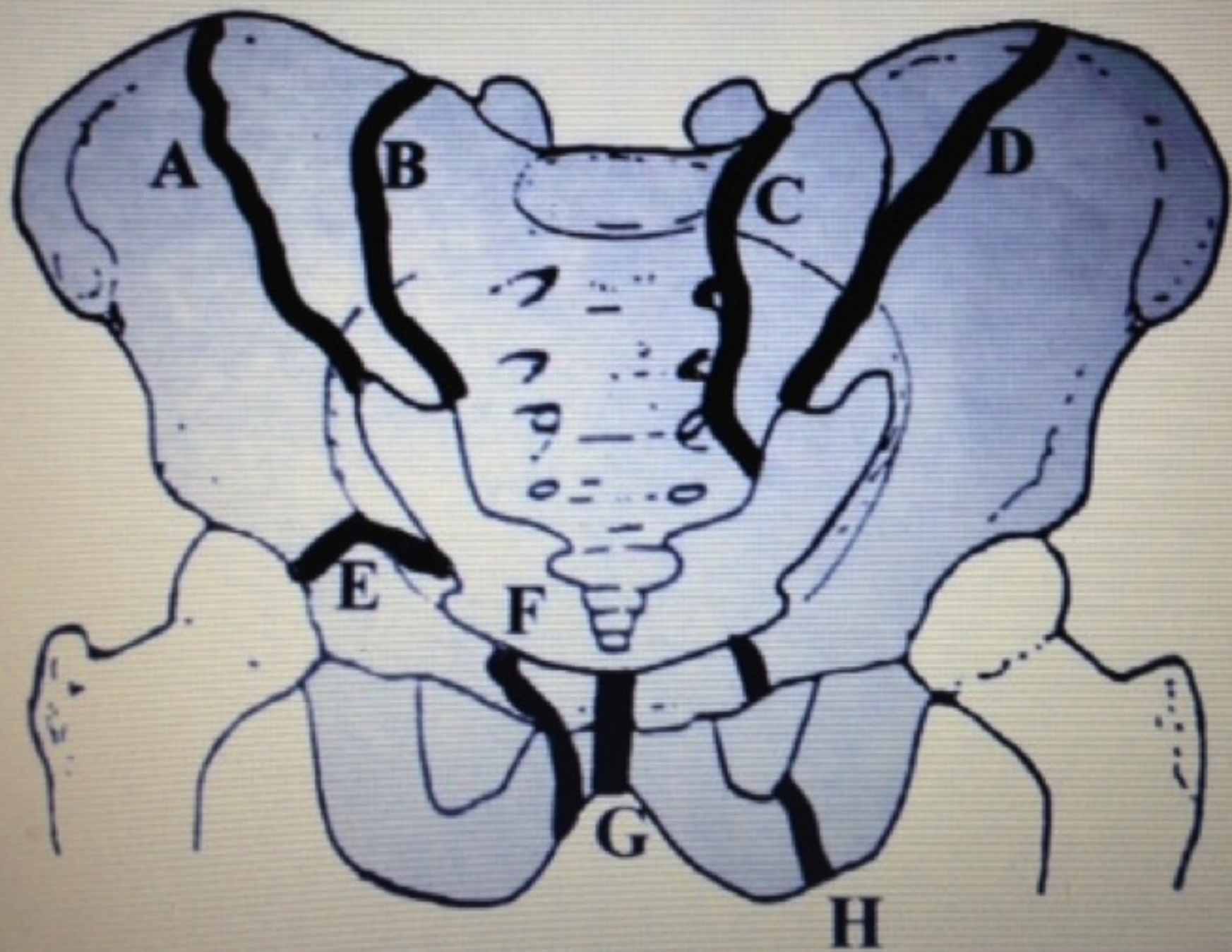
Portable

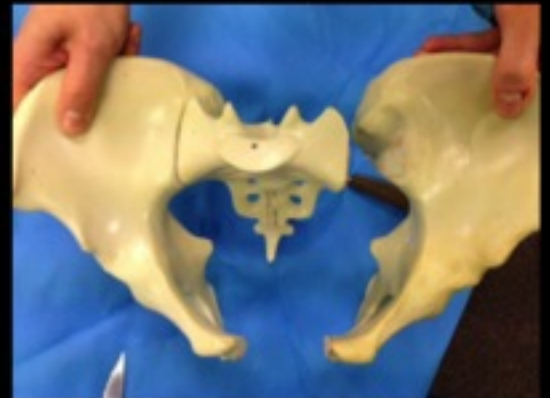
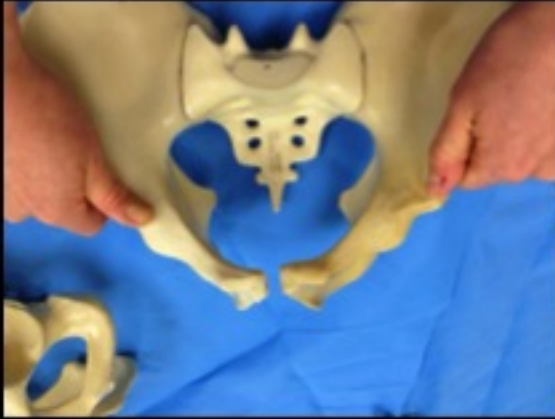
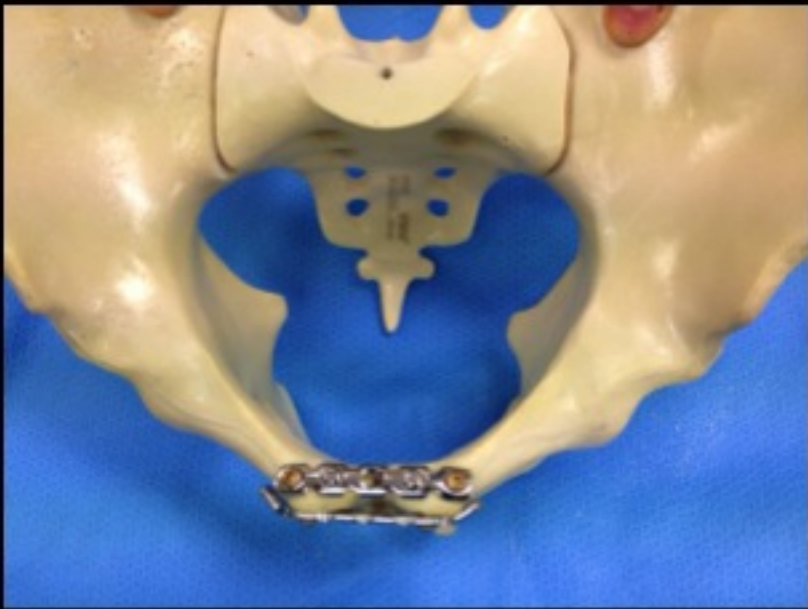
R

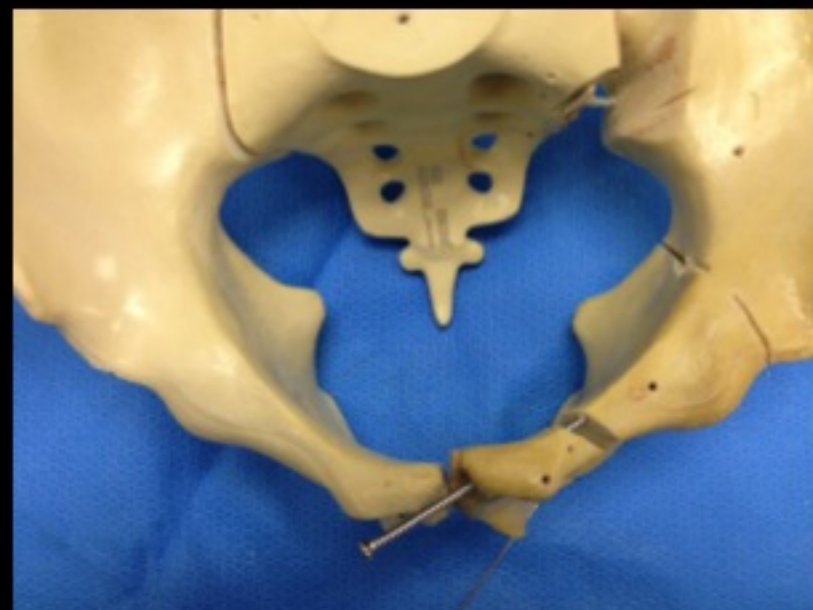
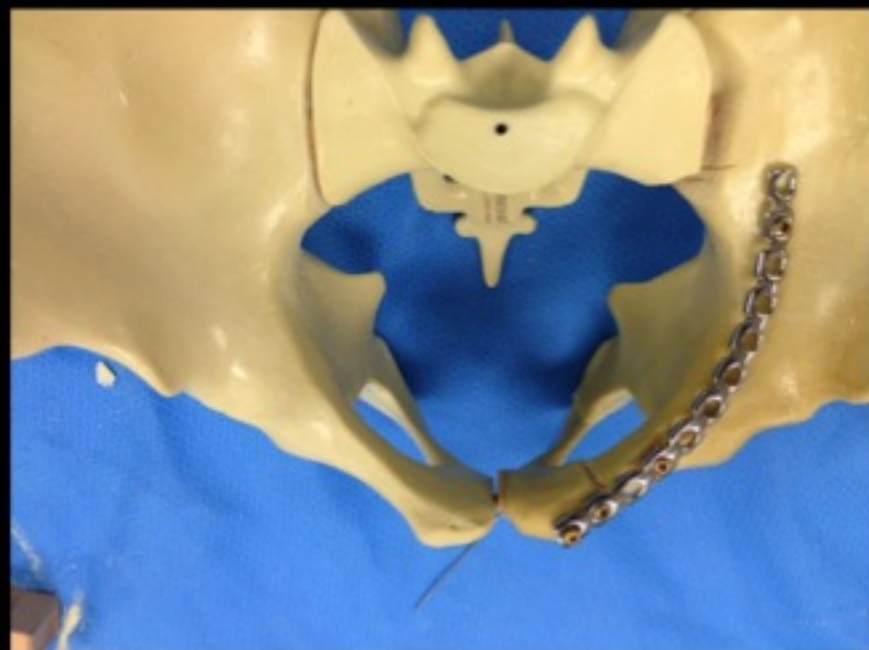
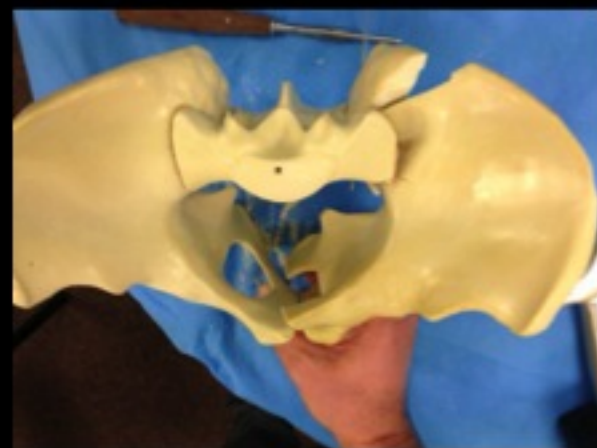
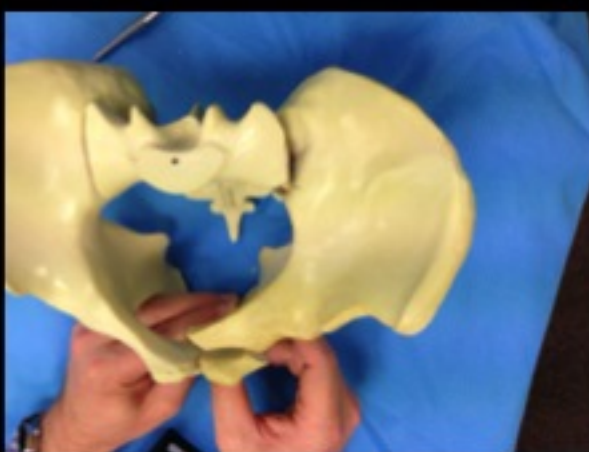
Through Bed



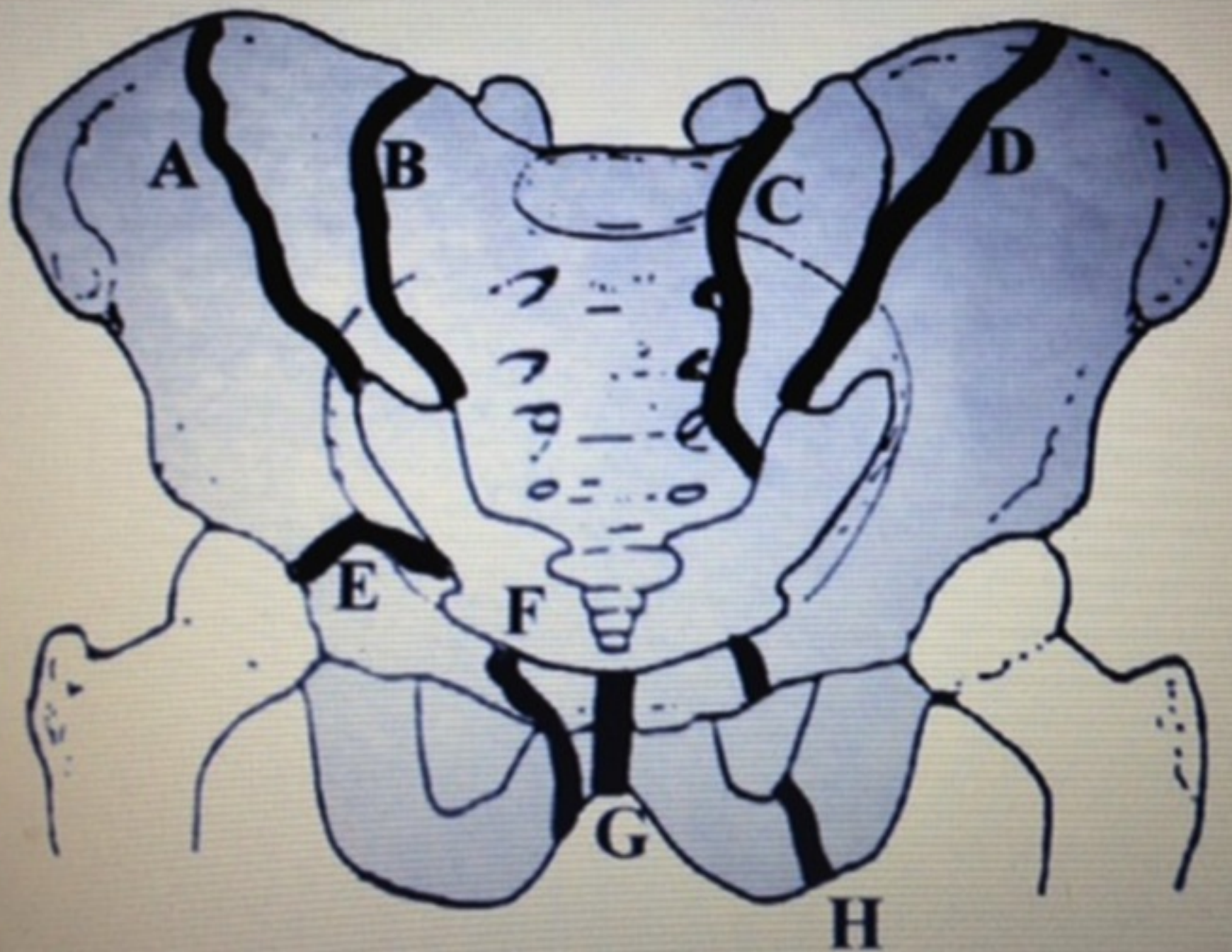


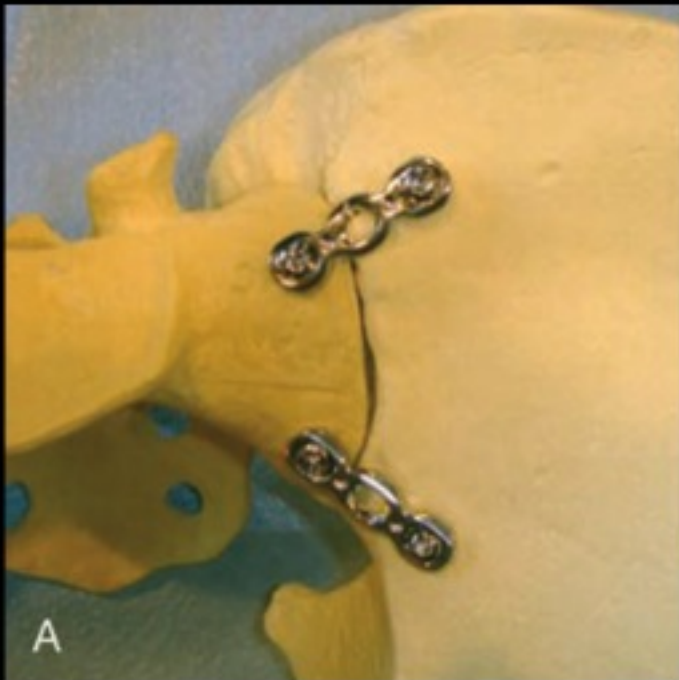
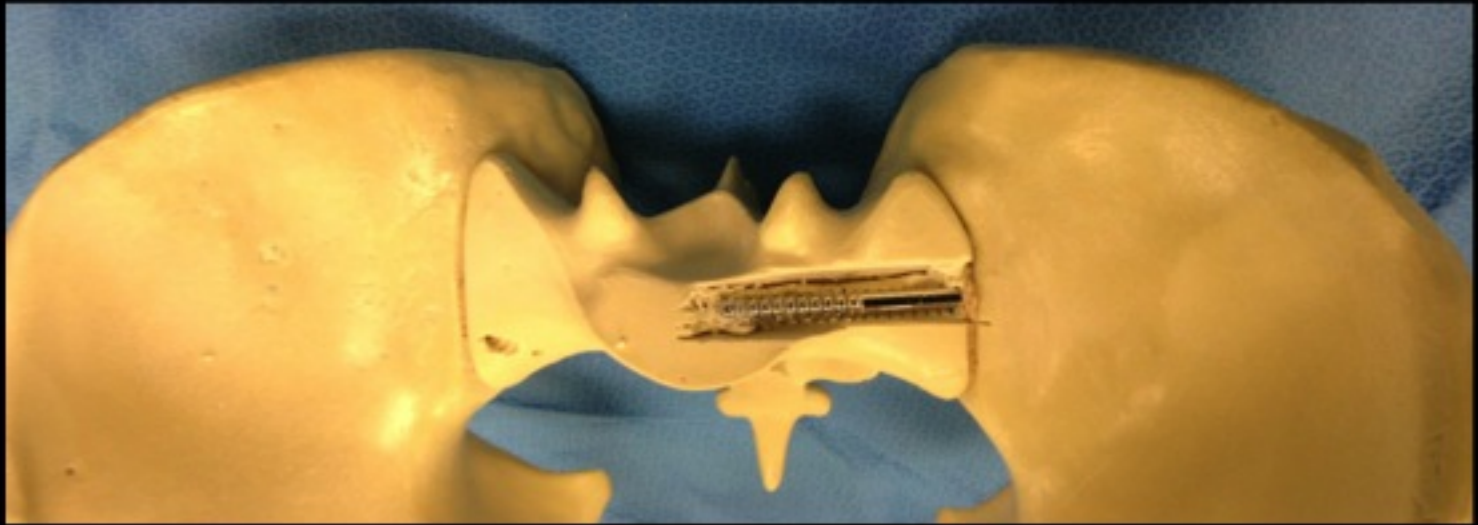


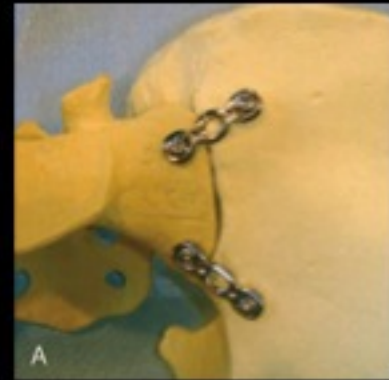
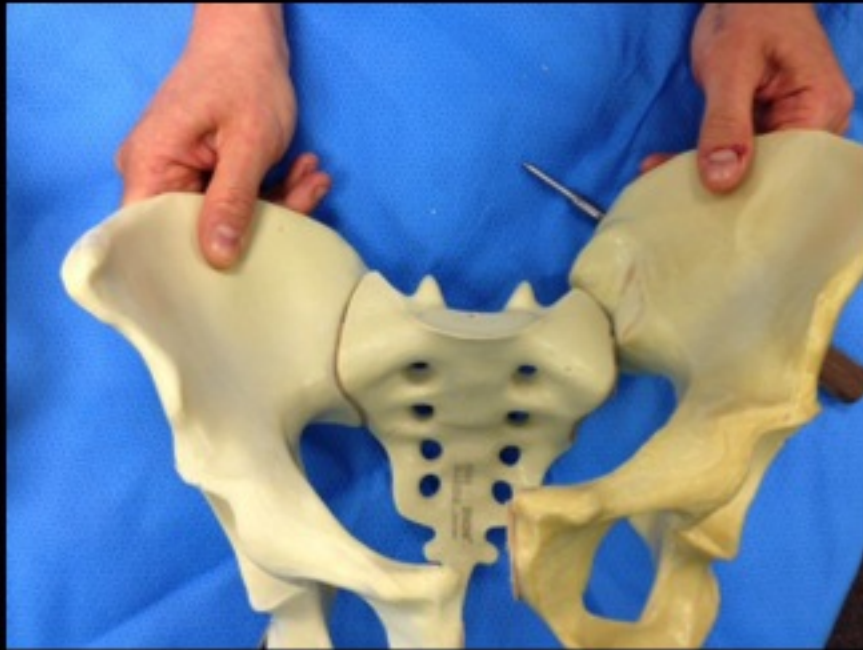
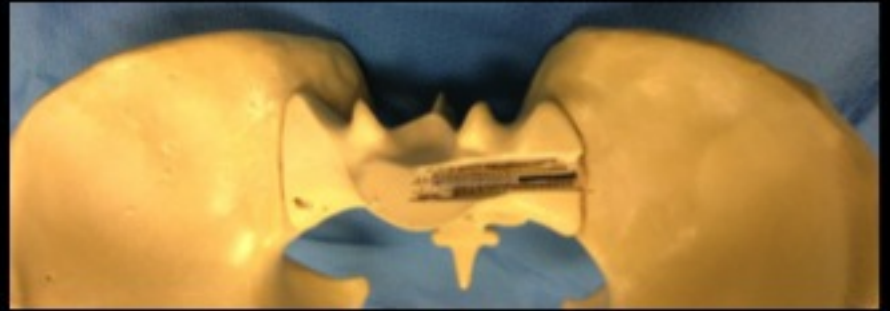










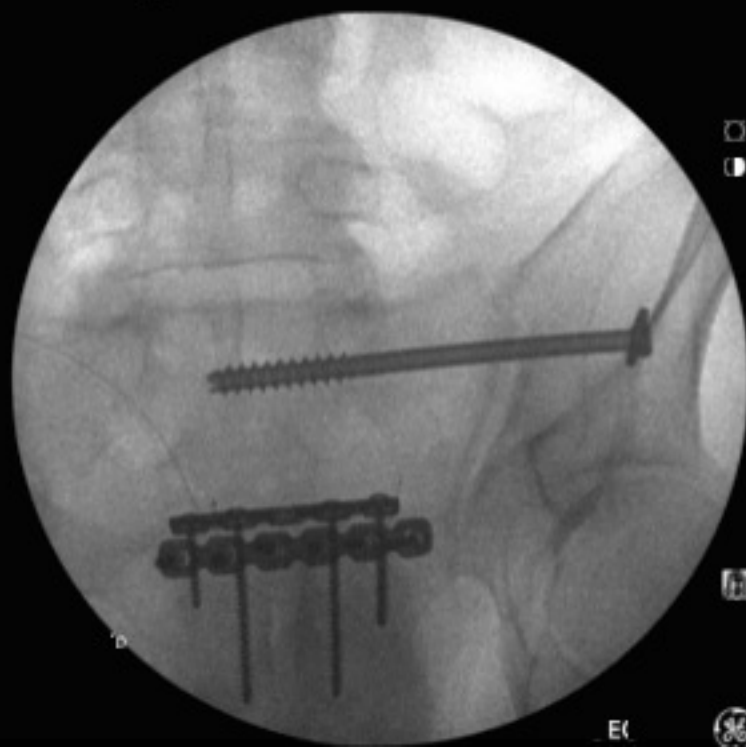
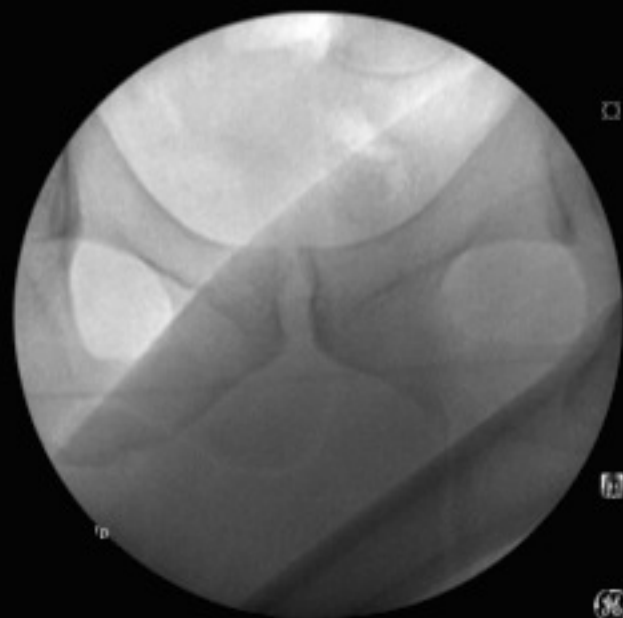


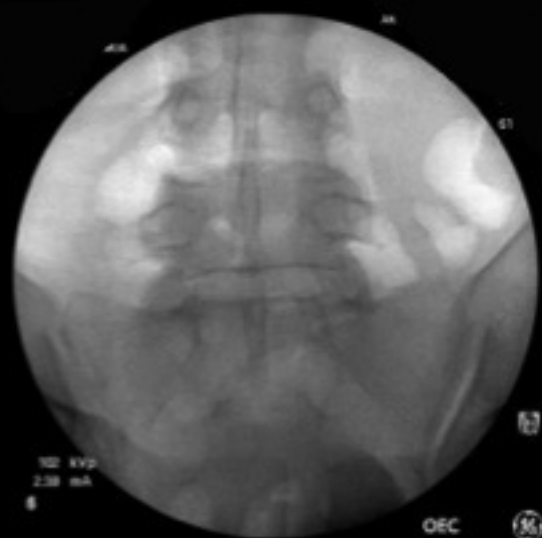
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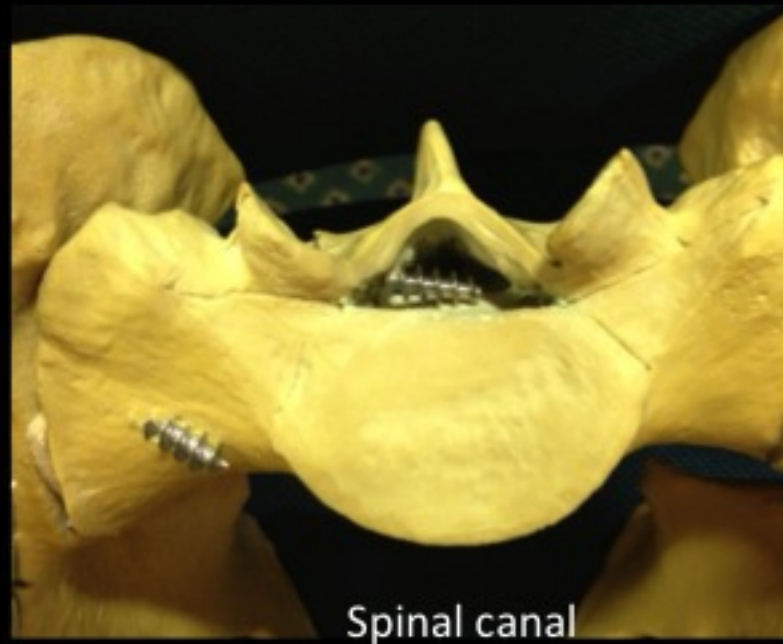
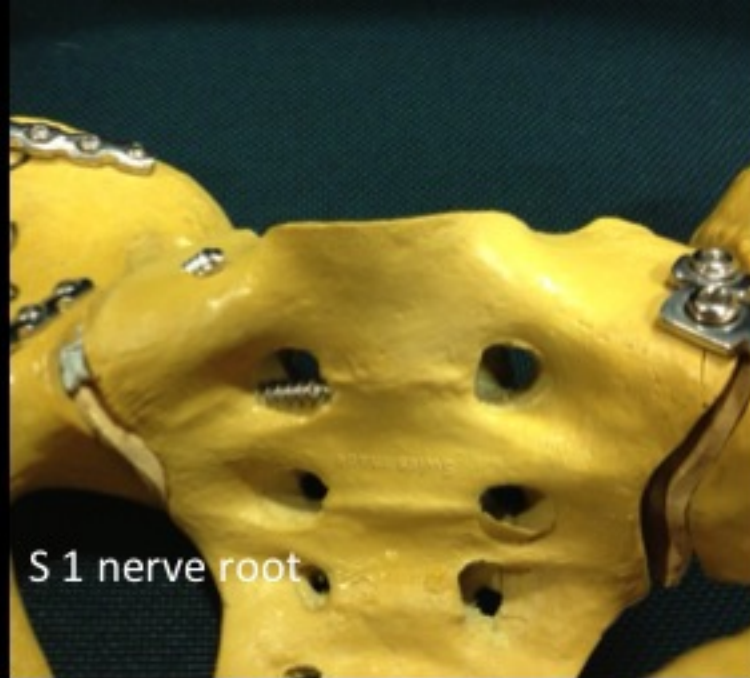
SUPINE PORTABLE THRU BED











150.

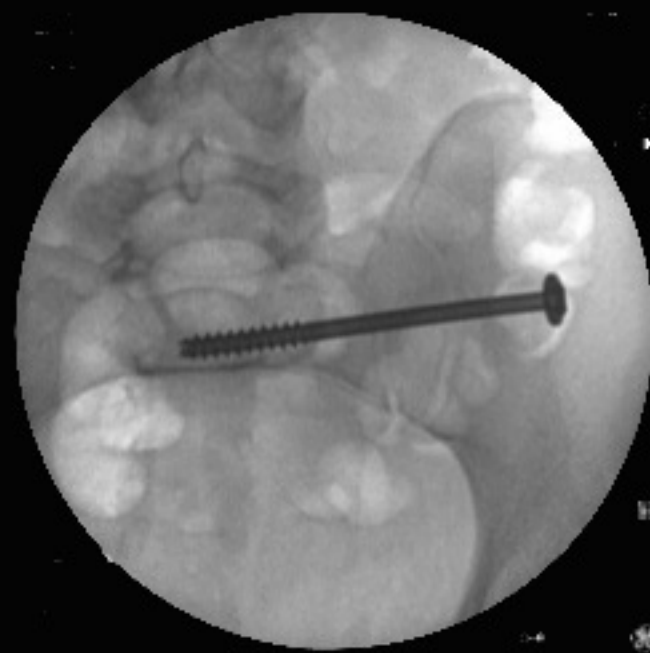
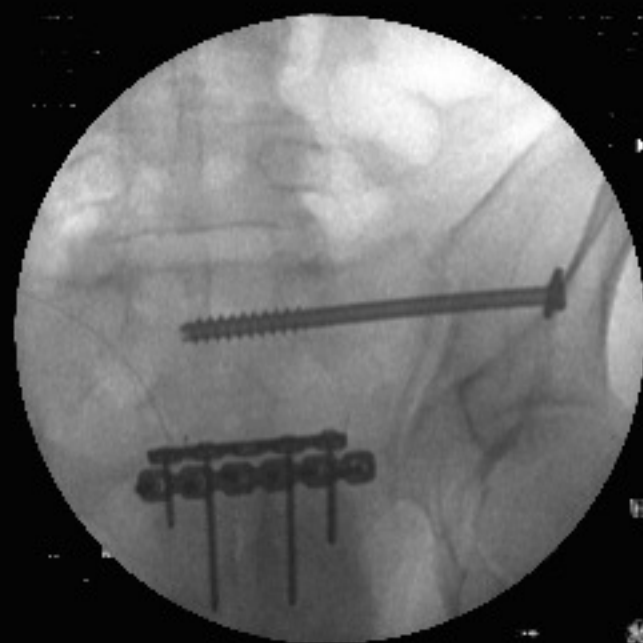
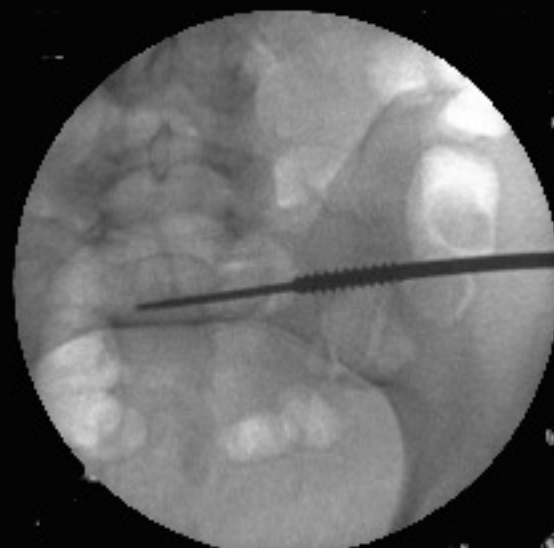
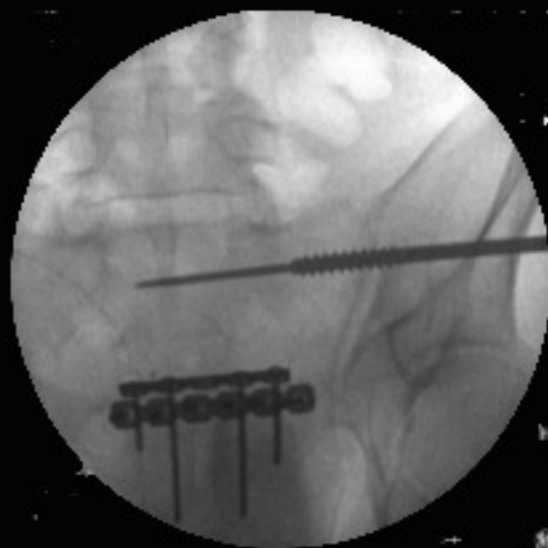
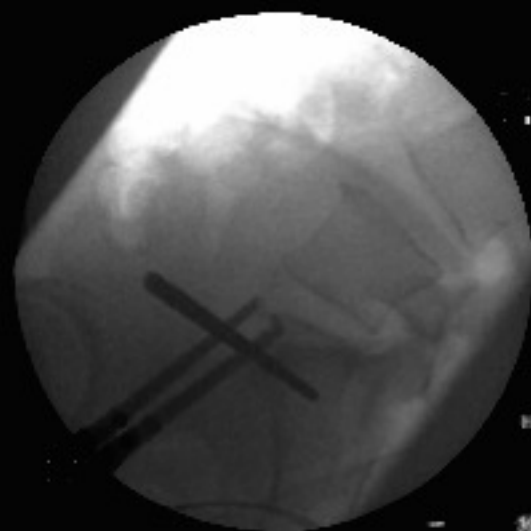
35
62

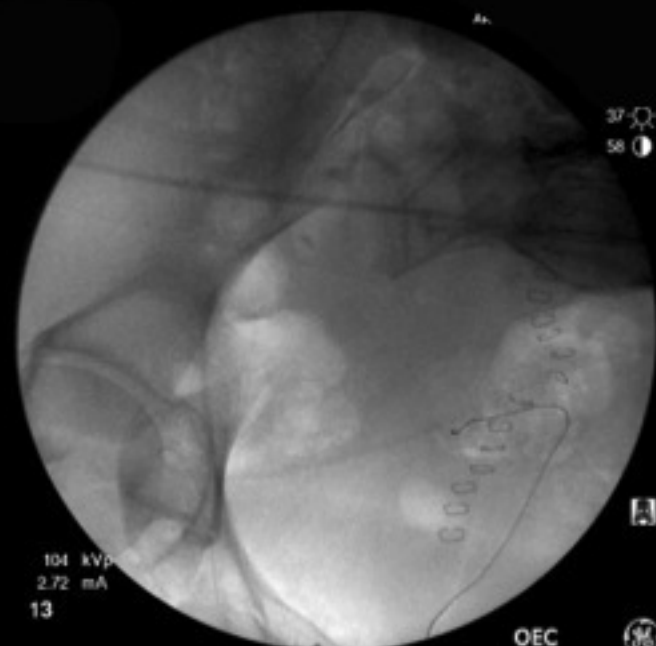
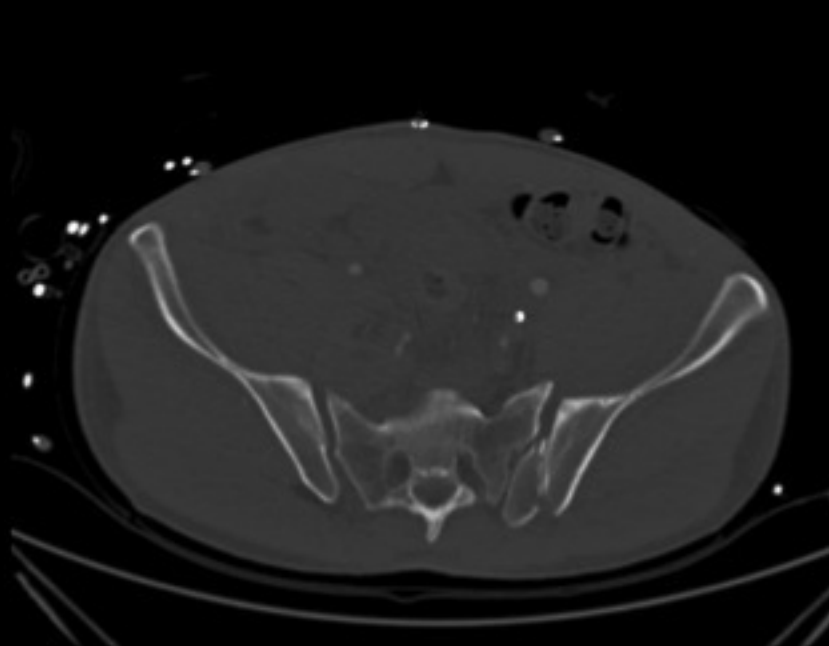
96 kVp
2.40 mA
5



OEC



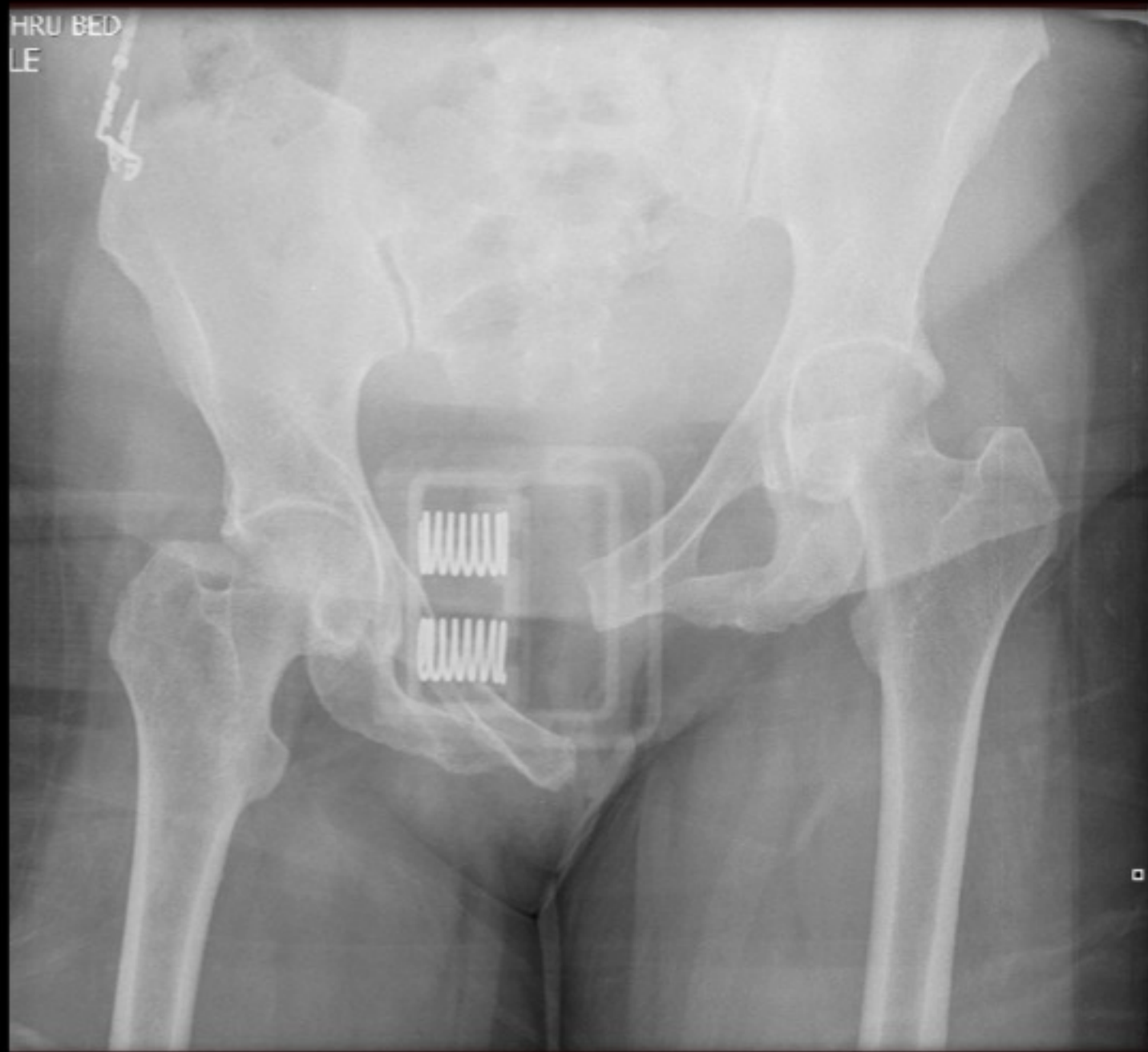




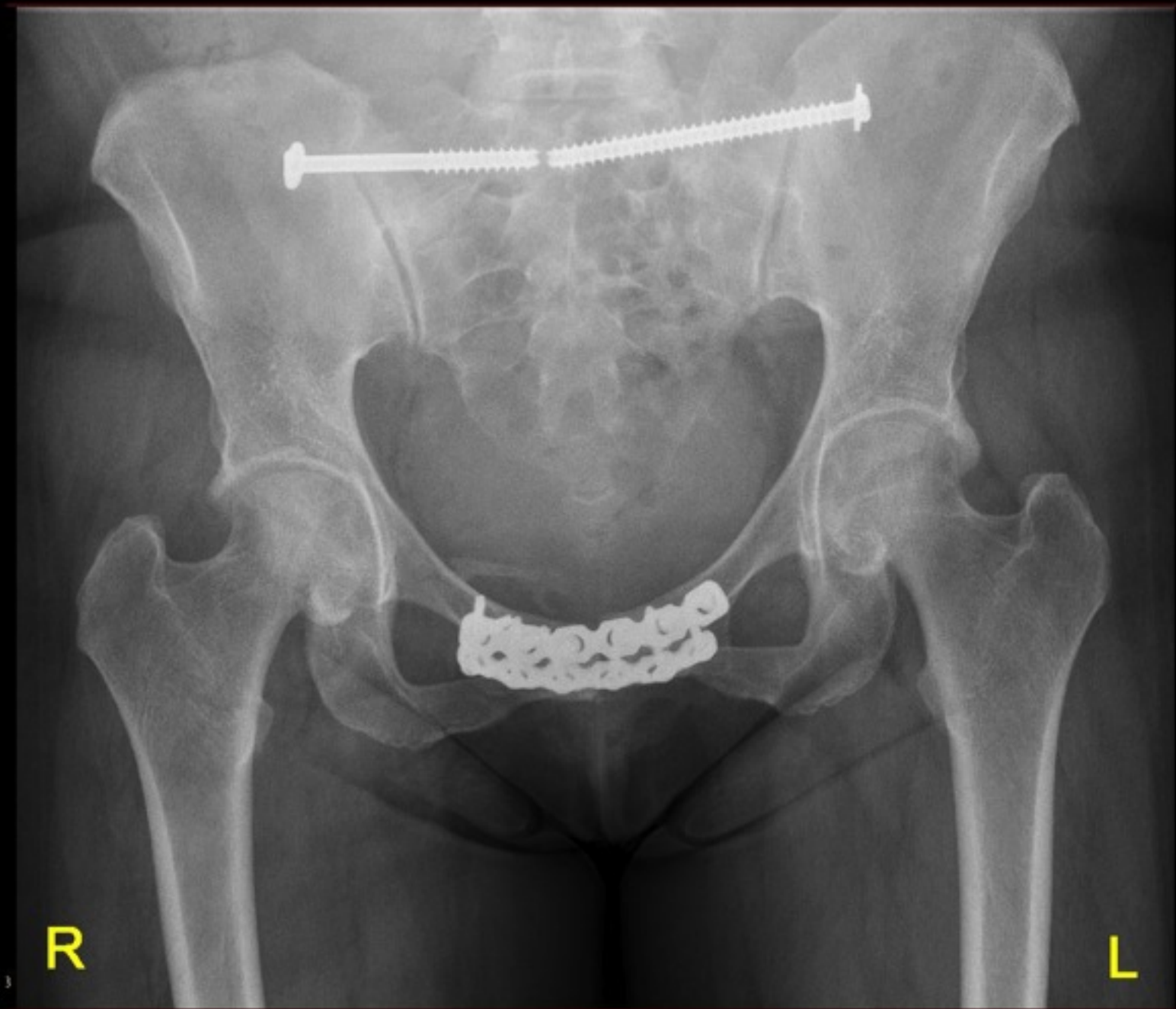
R



HRU BED
LE







External fixator:

Rarely used now for definitive fixation

Still a place for anterior stabilisation after posterior fixation
if anterior soft tissues compromised .

Anterior internal fixator .

Emergent treatment :

In O.R at time of laparotomy

Bleeding ,packing.
Rupture viscus

Temporary stabilisation prior to ORIF.

Transfer to level 1
Pain
Nursing cares

