

Pelvis plain film of the trauma patient – Any utility?

Johan C Hellund
Dept of radiology
Ullevål University Hospital



The answer:

Yes!





Why yes ?

- Trauma triage
 - A
 - B
 - C



Why yes ?

- Trauma triage
 - Airways
 - Breathing
 - Circulation



Why yes ?

- Trauma triage
 - Airways
 - Breathing
 - Circulation
- In radiologic terms:
- Chest X-ray



Why yes ?

- Trauma triage
 - Airways
 - Breathing
 - Circulation
- In radiologic terms:
- Chest X-ray
- Pelvic plain film



Why yes ?

- Trauma triage
 - Airways
 - Breathing
 - Circulation
- In radiologic terms:
- Chest X-ray
- Pelvic plain film
 - Signs of FRACTURES / TORN LIGAMENTS?
 - indicating possible haemorrhage



Bleeding due to:

- **Pelvis ring damage**
- Acetabular fractures
- Other fractures



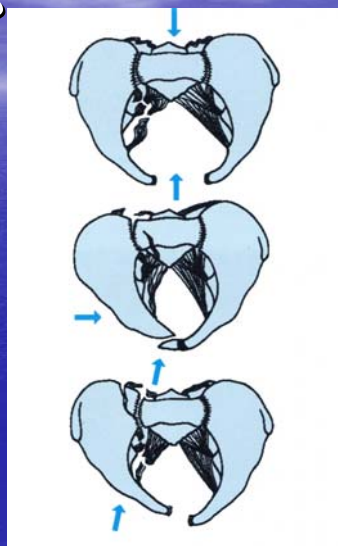
Focus on !!

- Forces on the pelvis – type of trauma
- Normal findings - checkpoints
- “What you don’t see”



Forces on the pelvis

- Anteriorposterior compression
- Lateral compression
- Vertical shear
- Combination these 3 of forces
- (Forces acting on the acetabulum)



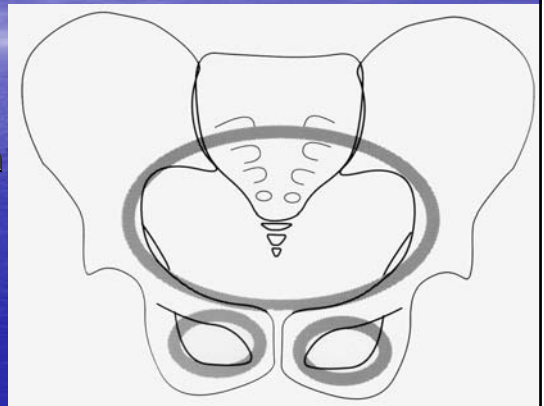
NEVER EVER GIVE UP



Checkpoints

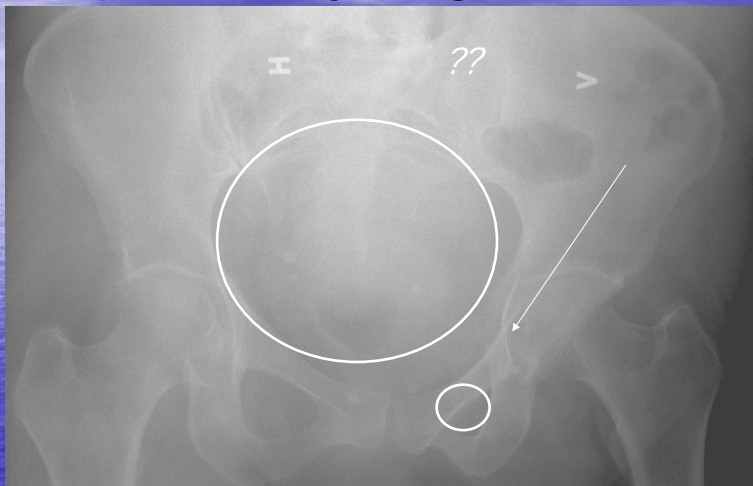


- 3 bony rings
 - Pelvis brim
 - Obturator foramina





Disrupted bony rings

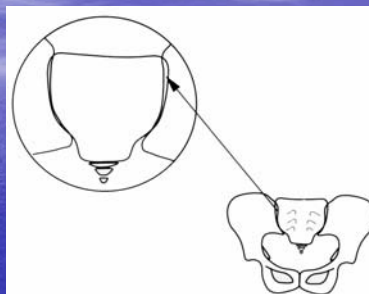


One fx in a bony ring is associated with a second fx!!



Checkpoints

- Alignment of the
 - Sacroiliac joints
 - Pubic symphysis
 - Arcuate lines





AP force – "Open book"



Checkpoints

- Alignment of the
 - Sacroiliac joints
 - Pubic symphysis
 - Arcuate lines



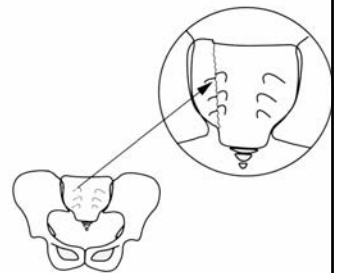


Widening of the symphysis



Checkpoints

- Alignment of the
 - Sacroiliac joints
 - Pubic symphysis
 - Arcuate lines



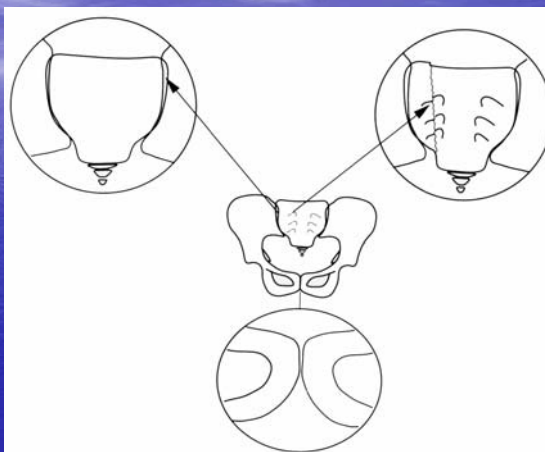


Fractured arcuate lines



Checkpoints

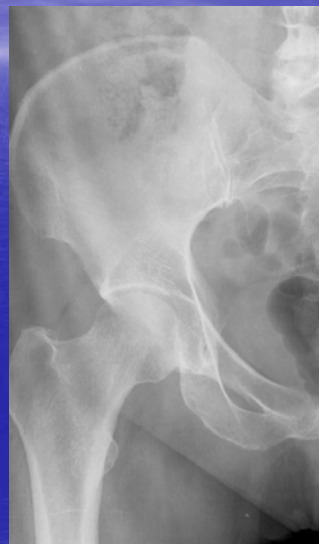
- Alignment !!





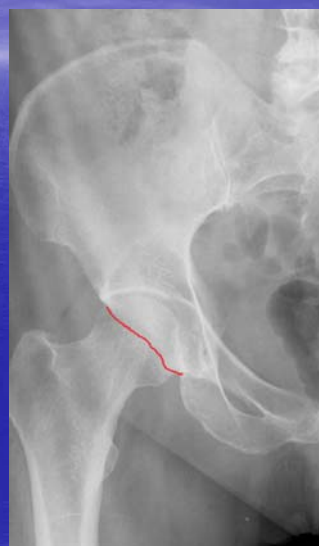
Checkpoints

- Acetabulum
 - Posterior and anterior brim
 - the Tear drop
- L5
- Hip fracture
 - Shenton's line



Checkpoints

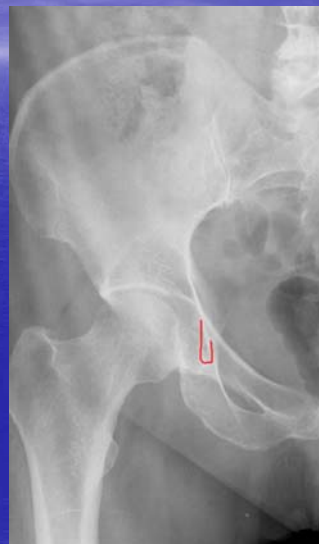
- Acetabulum
 - **Posterior** and anterior **brim**
 - the Tear drop
- L5
- Hip fracture
 - Shenton's line





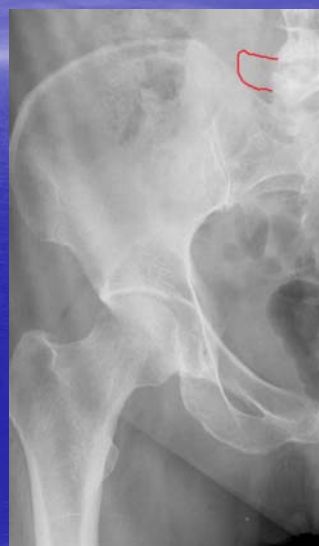
Checkpoints

- Acetabulum
 - Posterior and anterior brim
 - the **Tear drop**
- L5
- Hip fracture
 - Shenton's line



Checkpoints

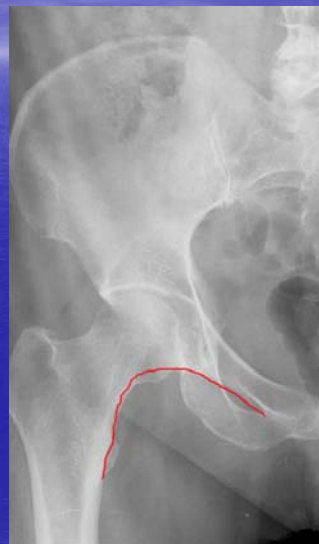
- Acetabulum
 - Posterior and anterior brim
 - the Tear drop
- **L5**
- Hip fracture
 - Shenton's line



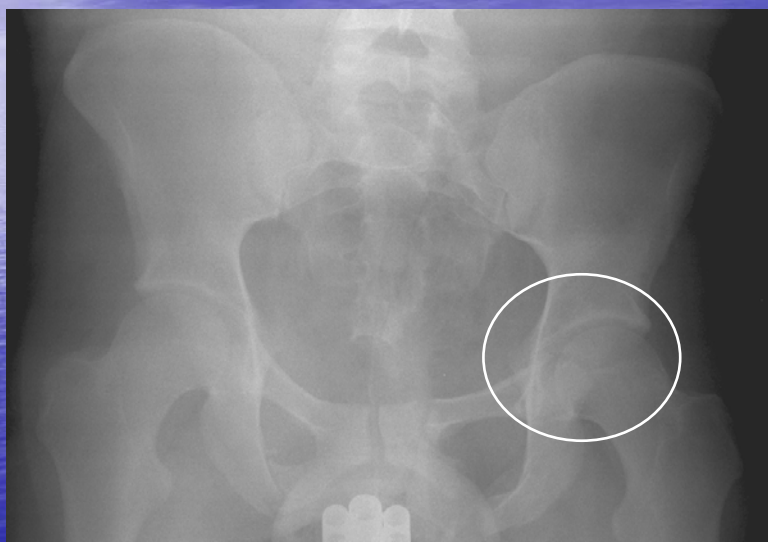


Checkpoints

- Acetabulum
 - Posterior and anterior brim
 - the Tear drop
- L5
- Hip fracture
 - **Shenton's line**
 - Disrupted obturator ring?

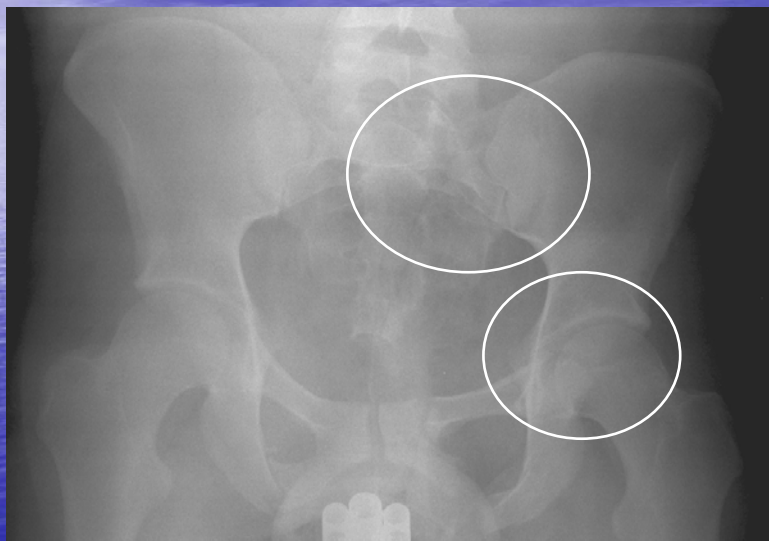


Acetabulum – posterior brim

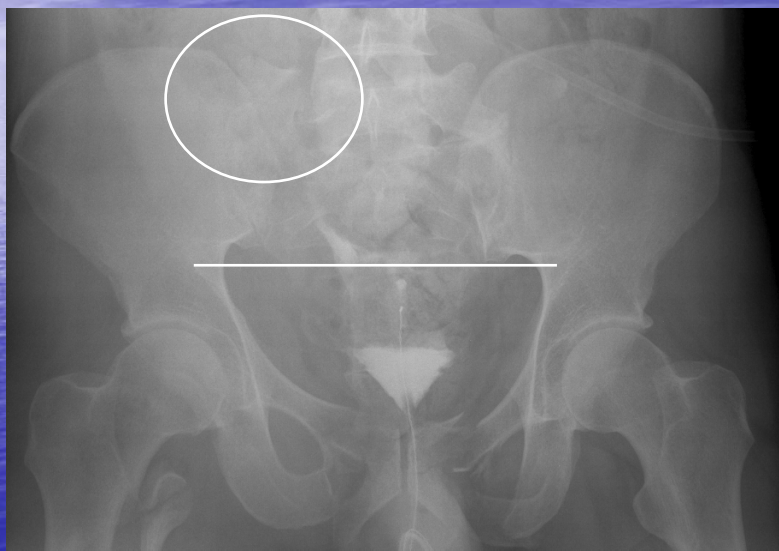




Acetabulum + ring + sacrum

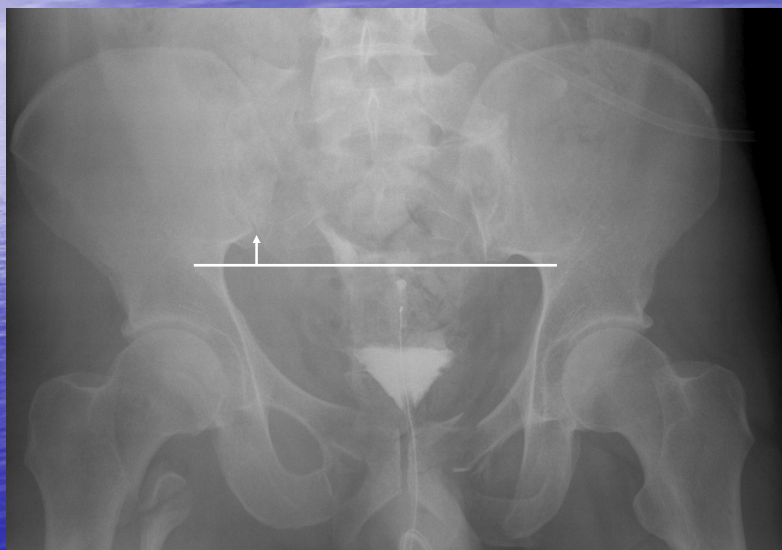


L5 fx and disrupted ring (+ hip fx)





Vertical shear injury

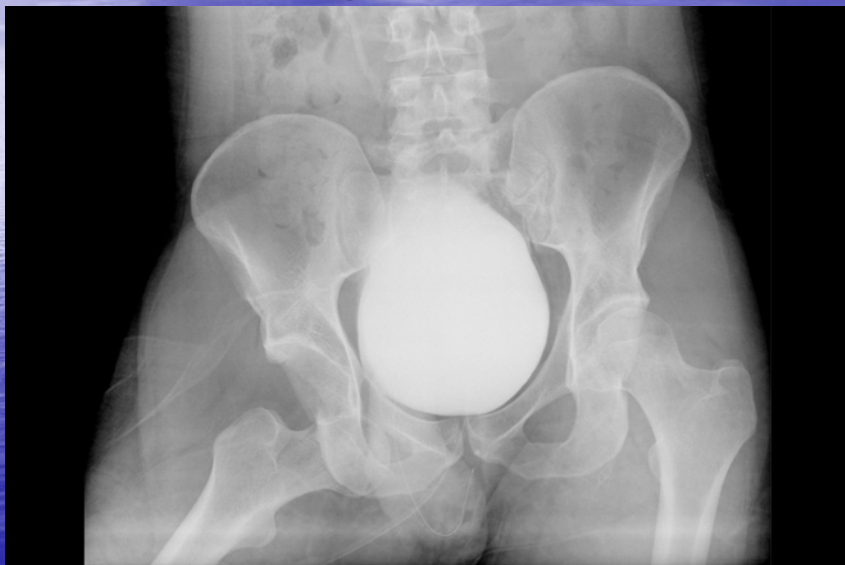


Disrupted Shenton's line





Dislocated hip



"What you don't see"





“What you don’t see on a pelvic AP-film”

Sacral fractures

- Horizontal

A blue background with a white cross icon in the top right corner. The text is white and centered.

Take home message

- Pelvis plain film is part of trauma triage
- Try to identify the forces acting on the pelvis
- Inspect the bony rings, the alignment and L5
- Sacral fractures difficult to see (horizontal)