

OMD Podcast Pelvic Binder Show Notes

Summary Points:

- Review of Anatomy
- Indications for Binders
- How Binders Work and Background Info
- How to Apply a Binder
- What a binder ISN'T Indicated/When a binder will hurt more than help
- Management of Patient with Pelvic Fx
- More Resources



• Anatomy

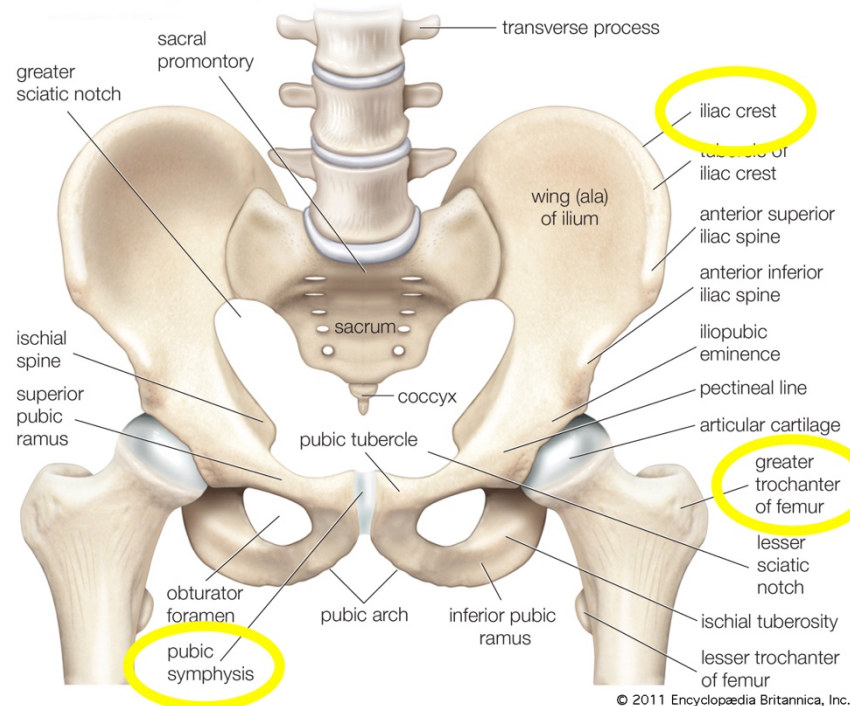
-Femur vs. Pelvis Fracture

- Hip fracture is really a proximal femur fx
- Pelvis is a fracture of the ring of bones that forms the bony pelvis

-Pelvic bones form a ring that protect the pelvic organs and articulate with the spine and legs

- When fractured, may be stable and cause minimal disruption (ground level falls)
- When the ring is fractured, becomes unstable (open book fracture)
- Open book fractures cause disruption of venous vessels of the pelvis (fragile vessels and bleed easily)
- Can lose most of circulating blood volume into pelvis (patient can bleed out into pelvis)

Bones of the pelvic girdle



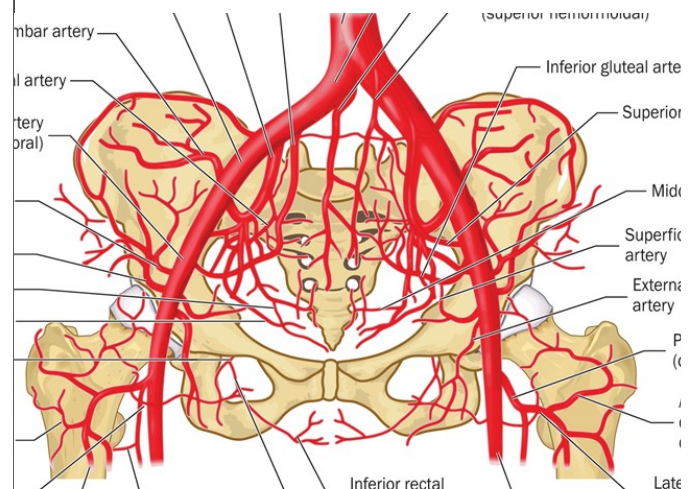
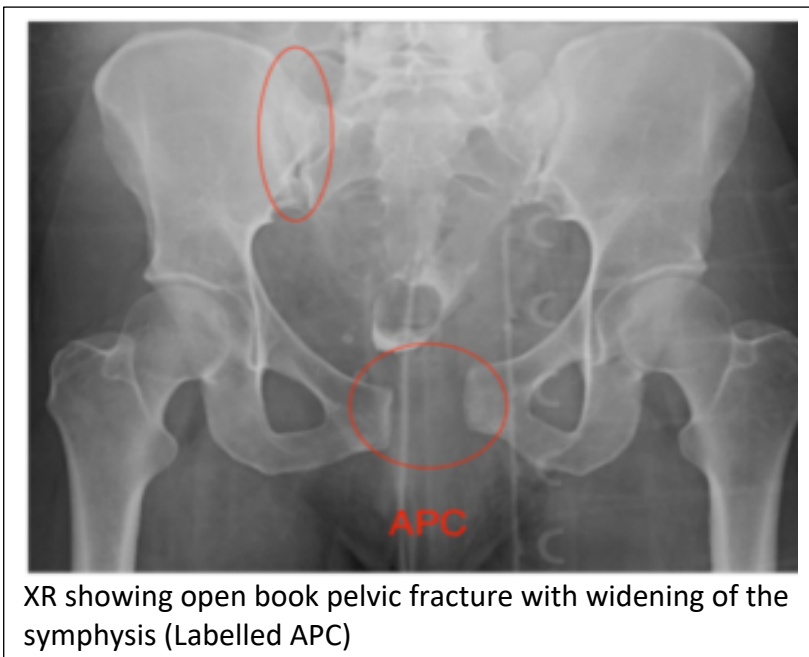
© 2011 Encyclopædia Britannica, Inc.

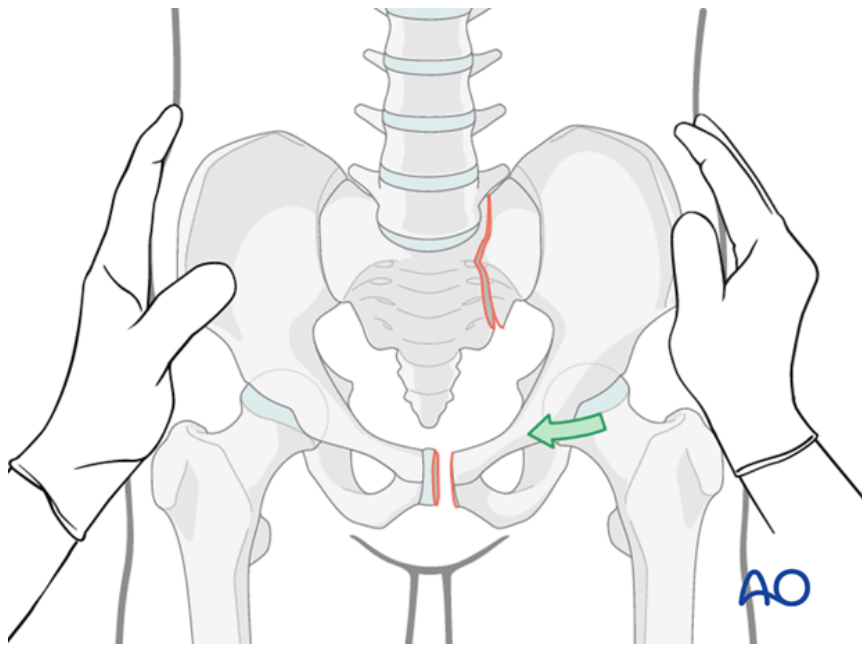
- **Indications for a Pelvic Binder**

- True indications are for pelvic fractures with widening of the pelvic opening (symphysis)
 - Only way to know is with an XR which can't be done in the field
- Surrogate markers for binder placement MECHANISM, EXAM, VITALS:
 - Traumatic mechanism consistent with pelvic Fx
 - MCC (motorcycles were designed to smash pelvises)
 - High-speed MVC
 - Severe mechanism – high falls, ATV rollovers, crush injuries
 - UNLIKELY in LOW ENERGY/MECHANISM Such as GLF (or of course penetrating trauma)
 - Unstable VS – Tachycardia, Hypotension
 - Unstable Pelvis on Exam
 - Tenderness to palpation over symphysis and SI joints
 - No pain, fx unlikely
 - Press inward on the wings (iliac crests) of the pelvis towards the midline with your finger-tips
 - Avoid use heel of the hands
 - If you feel give that is a positive side
 - DO NOT rock or twist – it is dangerous, can cause worse trauma, and is poorly sensitive (misses 75% of unstable fxs).
 - Wounds to the groin = bad and may be an open pelvic fx.
 - Bruising to genitals also may be indicator of pelvic fx.

Summary of indications:

- Major Mechanism + Signs of shock -> Binder
- Major Mechanism + Worrisome exam -> Binder
- Major Mechanism + Blunt Traumatic arrest -> Binder





- **Why binders: How it Works**

- Biggest take away is that the pelvic binder is a hemorrhage control first and foremost

- NOT a splint

- More similar to a tourniquet in function

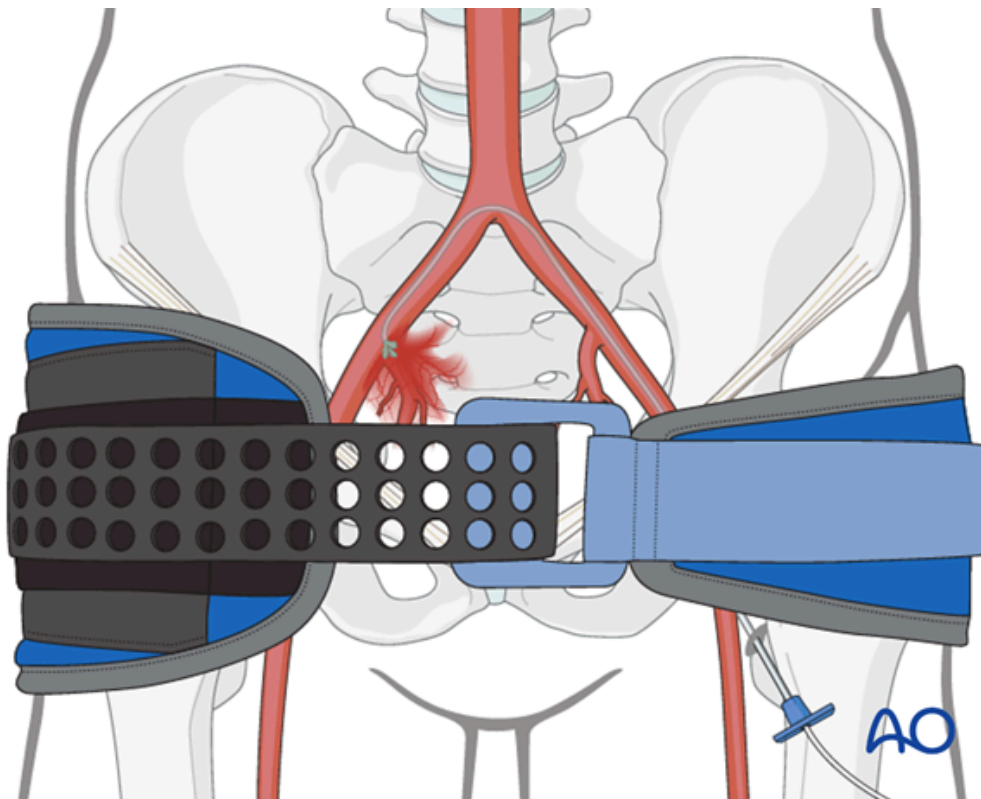
- Pelvic fractures are not all the same

- Binders work on fractures that cause widening of the pelvis (open book fracture) which disrupts the blood vessels in the pelvis causing massive bleeding

- Not all fractures cause widening, but for EMS (no XR available) assume all pelvic fractures can benefit

- Binders stabilize the halves of the pelvis to prevent them from moving around and causing further trauma to vessels and more bleeding

- Binders are NOT splints – not to keep the bones aligned to allow healing, they are to prevent more INTERNAL damage



- **How to Apply a Binder**

- Consider preloading binder on scoop stretcher or “shimmying” it up from behind the knees into position
- Don’t log roll these patients if possible – this will cause further trauma to pelvis and more bleeding
- Remove all clothing overlying the pelvic area “get them trauma naked”
 - Prevent crushing clothes or items in pockets into patient’s skin
 - Allows better exam of the pelvis
 - Make binder more effective
- Identify the Greater Trochanters – the bony parts Inferior to pelvic wings (where hip fractures hurt or saggy pants sit)
 - Press in on the sides of hips until you find the bony prominences
 - You want your binder to go directly OVER these bony points
- Place the binder with black side up beneath the patient at the level of the identified trochanters
- Slide belt through buckle and pull black strap all the way through buckle
- Holding the orange strap, pull the black strap away from the orange (opposite directions) until you hear and feel a click
- While holding tension on the black belt, press it to the binder belt to seal
- It is too HIGH if you can’t see the belly button

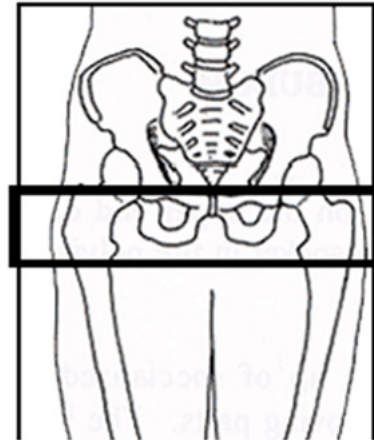
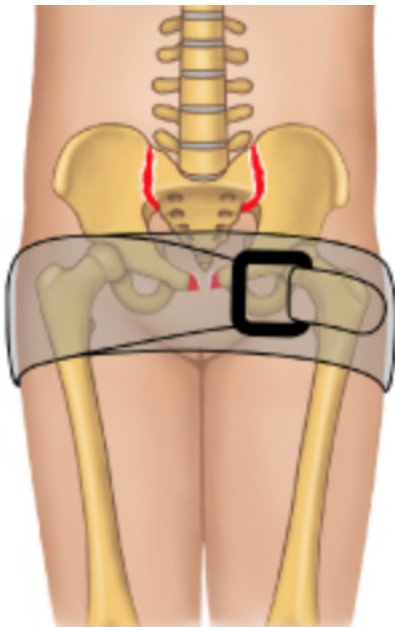
-If you DON'T have a binder

-Can place a sheet around the patient at the same level (greater trochanters)

-Place under patient with ends protruding bilaterally

-If hemostats, tuck near side of sheet under patient, pull tight over the front of pelvis and secure to sheet with hemostats

-If no hemostats, cross ends in-front of patient under tension and twist ends together or tie knot



- **When to NOT Use a Binder**

-Hip fractures AKA Proximal Femur fracture (shortened, externally rotated). Binder will not help for these. They do NOT

-Help with pain

-Prevent further movement of fracture site

-Help in ANY WAY

-More likely to cause further injury and fractures

-Stable patients with hip/pelvic pain

-Not all traumatic pelvic pain is an unstable pelvic fracture

-DO YOUR EXAM – look for tenderness/deformity and instability

-LOOK AT VS – if patient is stable, binder unlikely to help

- **Management of Patient with Pelvic Fx**

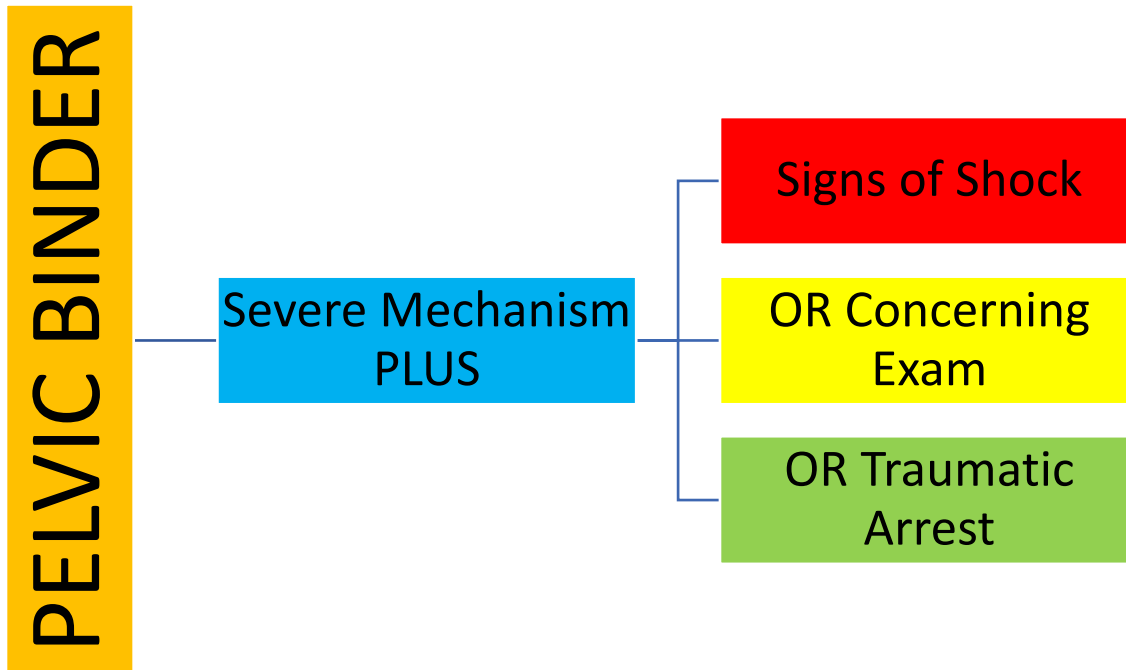
-Part of criteria is hypotension/tachycardia, likely a TXA candidate

-Small fluid bolus as per trauma protocol

-Permissive Hypotension (SBP<90)

-Transport to trauma center

-Pain control as BP can tolerate, these fractures and binder placement extremely painful



FURTHER EDUCATION

-Binder application video

<https://www.youtube.com/watch?v=YfDJnUyBeZI>

-EMRAP Binder Video (general pelvic binders, not your specific model)

<https://www.youtube.com/watch?v=8dCntKAExBk>

SUMMARY IN BRIEF

- Hip fracture is NOT a pelvic fracture so do not use a binder
- Pelvic binder prevents further bleeding due to UNSTABLE pelvic fx, use when:
 - Major Mechanism + Signs of shock -> Binder
 - Major Mechanism + Worrisome exam -> Binder
 - Major Mechanism + Blunt Traumatic arrest -> Binder
- Binder only works when placed over the greater trochanters and is tightened properly
 - Directions are in your protocols
- Pain control and treatment for trauma is critical in these patients