

Clyde Emergency Departments

Standard Operating Procedure – Pelvic Injuries / SAM Pelvic Sling

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Related documents	
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Aims

- To be aware of the range of severity of pelvic fractures
- To ensure optimal management and triage of pelvic fractures
- To ensure appropriate use of the pelvic sling

Background

The bony pelvis consists of the ilium (i.e., iliac wings), ischium, and pubis, which form an anatomic ring with the sacrum.

Pelvic fractures account for 1-3% of all skeletal fractures and 2% of orthopaedic hospital admissions

Most pelvic fractures are stable and result from a low-energy mechanism of injury.

Patients who sustain high-energy unstable pelvic injuries not only have the osseous injury but also often have concomitant life-threatening injuries.

- 60% and 80% of patients have musculoskeletal injuries,
- 12% have urogenital injuries
- 8% have lumbosacral injuries

Compound fractures of the pelvis have a mortality >50%

The 2 most commonly used classification systems are Tile and Young and Burgess;

Tile

Type A stable and do not fracture through the pelvic ring or soft tissues. The posterior ligamentous arch is intact. These fractures include avulsion fractures, iliac wing fractures, and transverse fractures of the sacrum.

Type B fractures are rotationally unstable but vertically stable. An incomplete disruption of the posterior pelvic arch is present.

- B1 "Open Book"
- B2 Ipsilateral Compression
- B3 Contralateral compression

Type C fractures are vertically and rotationally unstable, with complete disruption of the posterior arch and pelvic floor. The hemipelvis is, thus, completely unstable.

Young and Burgess

Young and Burgess proposed a classification system based on Tile's classification. Subtypes are anterior-posterior compression (APC), lateral compression, vertical shear (VS), and combined mechanisms (CM).

AP Compression injury



Vertical Shear



Denis zone of injury

Sacral fracture classification according to zone of injury.

- Zone I injury, the sacral alar region is involved
 - Zone II injuries, the sacral foramina are involved
 - Zone III injuries involve the central sacral canal
- Transverse fractures of the sacrum may also occur.

Pelvic fractures are associated with considerable haemorrhage.

Clot formation should be promoted by minimal handling and use of the pelvic splint.

Most incidents of blood loss from a pelvic injury occur from cancellous bone at the fracture site or from a retroperitoneal lumbar plexus venous injury.

Only 20% of deaths from pelvic haemorrhage are attributed to a major arterial injury.

If X-ray has confirmed the presence of a pelvic fracture, no further clinical examination of the pelvis is necessary. If no X-ray is available then gently examine for clinical signs of pelvic fracture – once only. Look for visible signs of pelvic asymmetry including leg length and rotation.

The splint should be applied to skin, not over clothing. The patient should ideally be rolled on to the splint during the logroll to examine the back and transfer the patient.

Positioning is important as a badly positioned splint may serve to open the pelvis. The pre-application position of the ASIS and crest should be identified and the belt should aim to bring them back into an anatomical position. The endpoint of the splint is to bring the pelvic bones into a near anatomical position. The splint should not therefore be tightened “as much as possible” as this may serve to open a posterior disruption.

The sling’s “autostop” buckle has spring-loaded prongs that lock the buckle in place when the right amount of force is applied. This occurs when a force of 33 pounds is applied. It is not possible to over tighten the splint.

The splint should only be removed when other means of stabilisation / splintage can be initiated or after full radiological imaging excludes instability. Imaging should be performed through the splint.

The splints are expensive and should be reused.



1) Unfold Sling with white surface facing up.



2) Place white side of Sling beneath patient at level of buttocks (greater trochanters / symphysis pubis).



3) Firmly close Sling by placing black Velcro® side of flap down on blue surface of Sling. Fold back material as needed. Try to place buckle close to midline.



4) Grab orange handle on outer surface of flap and release from flap by pulling upward.



5) With or without assistance pull both orange handles in opposite directions to tighten Sling.



6) Keep pulling until you hear the buckle click and feel the free handle stop.



7) As soon as the free handle stops, maintain tension, and firmly press the orange handle against the blue surface of the Sling.



8) To remove Sling, lift orange handle next to flap and release Velcro® by pulling upward. Maintain tension and slowly allow Sling to loosen.



9) Do not cut to remove. Release orange pull handle in order to remove. To be removed only under the supervision of a physician.

Further details available from www.sammedical.com