External Fixator of the Pelvic Ring

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Trained
- 1991 AO Course for Operating Theatre Nurses
- 1995 AO Fellowship at Cologne University Hospital, Cologne, Germany
- 1999 AO Education Seminar for Operating Room Personnel
- 2000 AO Advance Course for Operating Room Personnel
- 2001 AOEA Education Seminar for Operating Room Personnel KL, Malaysia
- 2010 AO Trauma Faculty Training for ORP in Davos, Switzerland
- 2011 AO Trauma Chair-person Education Program
- 2012 AO Trauma ORP Mentor Training in Davos, Switzerland

Professional Experiences
- AO National Faculty since 1999
- AO National Faculty Mentor since 2010
- AO Regional Faculty since 2011: Malaysia, Myanmar, Australia, Hong Kong
Objectives

• To understand the principle of external fixator in Pelvic ring Fracture

• Concerning the instruments for performing external fixator

• Procedure in performing external fixator
Indications

• For acute management of severe pelvic disruption
• For early management of polytrauma patients
• For definitive management of specific fracture patterns
• For use as an adjunct to enhance the stability of posterior internal fixation
Implant

Schanz screw  5.0 mm

Self Tapping (pre drill)
Schanz screw  5.0mm

Self drilling self tapping

Drill
Tap
Screw
Seldrill™ Schanz Screw

- Provides fast and precise **One step**
- Reduced heat generation
- Reduces micromotion and pin – tract infections
Stainless steel tube/ Carbon fiber rod
Clamp, Combination clamp Clip-On, Self-Holding

Universal clamp

Open Adjustable clamp
Clip-on, self-holding Clamp 393.978

*THE* clamp for the external fixation

**Snap-on design**

- Maintains position during frame assembly and fracture reduction
- Allows versatility of clamp placement between previously applied clamps
Open adjustable clamp
Universal joint for two tubes
Instrument

Universal chuck with T handle
Adapter for Seldrill™ Schanz Screw

New Adapter for Schanz Screw
Drill bit 3.5 mm.
Handle for Drill Sleeve

Drill Sleeve with thread
COMBINATION WRENCH

OCKET WRENCH
Position of the patient

Supine position
Application methods

Pin size
• 5 mm pins
• 4-6 mm depends on patient’s size

Pin position and number
• Position depends on several factors
  • Need for rapid insertion, provisional or definitive stabilization of the pelvic disruption
• 2-3 pins on each iliac crest

Pin placement
• Open/Percutaneous
Iliac crest external fixator

• Transverse stab incision
• Two k-wires as targeting guide
• Lateral-to-medial 45° inclination
• Reduction, check fluoroscope
• Built the construct
Stab wound 1-2 cm posterior to ASIS

Stab wound over the crest

Two K-wires are inserted into the iliac wing to identify both borders of the crest and the plane of the ilium toward the acetabular roof.
A trocar sleeve system is introduced in a lateral-to-medial 45° inclination.
Supraacetabular pin
Reduction and Stabilization of Pelvic Ring Injury

JKFS 2013
Pelvic C-clamp
ORP Keypoints

- Check the details of the patients: side, marking and site
- Check that the full range of the implants and instruments are available
- Be prepare for external fixation to be immediately followed by pelvic packing and/or laparotomy if it fails to control bleeding
Take home message

• Achieve relative stability
• Construct in various ways
• Preserve the soft tissue envelop around Fracture site
• Particularly useful when fracture associated with extensive soft tissue damage
Thank you for your attention