Pelvic Trauma **HELI.CLI.07**

Purpose

This procedure provides guidance on the management of Pelvic Trauma during retrieval missions

Procedure

Pelvic Trauma

For Review

Aug 2015

1. Introduction

1.1 Pelvic injuries are commonly seen in patients suffering major trauma and are associated with significant morbidity and mortality. The signs of pelvic injury are often subtle and difficult to detect in the pre-hospital assessment. Early pelvic splinting with a pelvic binder is a vital intervention in the pre-hospital phase of trauma resuscitation[1]. This document is a guide to the assessment and management of patients with pelvic trauma.

2. Objectives

2.1 Identify patients at risk of pelvic injury

2.2 Describe the assessment of patients with pelvic trauma

2.3 Describe the management of patients with pelvic trauma

3. Scope

Clinical Crew

4. Process

4.1. Pelvic injury should be suspected in;

- **4.1.1.** Multi-trauma patients with hypotension
- **4.1.2.** Motor vehicle collisions
- **4.1.3.** Vehicle collisions involving pedestrian / cyclist / motorcycle
- **4.1.4.** Falls from height
- **4.1.5.** Falls from a horse
- **4.1.6.** Crush injuries
- **4.1.7.** Patients > 65 years of age

4.2. Signs and symptoms suggestive of pelvic injury include;

- **4.2.1.** Abdominal, pelvic or lower back pain
- **4.2.2.** Presence of unexplained hypotension
- **4.2.3.** Leg length discrepancy

4.2.4. Scrotal or labial swelling

4.2.5. Flank ecchymosis

4.2.6. Open lacerations or abrasions in the pelvic region

4.2.7. Blood at urethral meatus

4.3. Pre-hospital management of pelvic trauma.

4.3.1. Patients at risk of pelvic trauma who are conscious and alert and have signs or symptoms of pelvic trauma should have a pelvic binder device applied[2]

4.3.2. Patients at risk of pelvic trauma with altered mental status should be assumed to have pelvic trauma and should have a pelvic binder device applied

4.3.3. Assessment of patients with a possible pelvic injury is unreliable and clinicians should treat patients with a pelvic binder if there is any doubt as to the presence of pelvic injury

4.3.4. Assessment of the pelvis consists of full exposure and careful inspection for the subtle initial signs of a pelvic injury

4.3.5. Rocking or springing of the pelvis is unreliable as an indicator of significant pelvic trauma and *should not be performed*. This process may cause clot disruption and increase haemorrhage

4.3.6. Every effort should be made to minimize patient movement and clot disruption during transfers and the orthopaedic scoop stretcher (OSS) should be used to avoid unnecessary log rolling. Application of the pelvic sling before or at the time of the initial log roll will minimise mechanical disruption of the pelvic ring during subsequent patient movements.

4.3.7. Current Ambulance Service of NSW protocol recommends the application of pelvic sheeting as initial management for pelvic trauma as paramedics do not have access to purpose designed pelvic binders. There is no specific evidence to suggest superiority of one type of pelvic binder device over another (including pelvic sheeting) and if pelvic sheeting has been CORRECTLY applied prior to the retrieval team's arrival, it should be left in place. If pelvic sheeting has been placed INCORRECTLY, then apply pelvic binder device *directly over the sheeting*. Pelvic binding has been shown to reduce mortality following major pelvic trauma and should be applied as early as possible during the pre-hospital resuscitation phase

4.3.8. Concurrent femoral shaft fractures may be immobilised using the CT-6 Femoral Traction Splint. The CT-6 is not contra-indicated in patients with pelvic fractures as the method of traction does not rely on the presence of an intact pelvic ring. The pelvic sling needs to be placed before the CT-6 devices. If they are already in situ in a patient with suspected pelvic fracture they will need to be temporarily loosened, with the femurs held in traction manually by an assistant, to allow application of the pelvic sling.

4.3.9. The SAM pelvic sling can be applied to average or larger adults. Smaller adults and paediatric patients should have the SAM sling applied with a modified technique to reduce effective circumference.

4.3.10. Once applied, a pelvic sling should remain in situ until pelvic ring injury has been definitively excluded. The SAM sling is radiolucent; note that metal clips used with sheeting can cause artefact on pelvic CT.

4.4. Transport of the patient with pelvic trauma;

4.4.1. Within the Sydney Basin and immediate surrounds, patients with pelvic trauma should be taken to the nearest Major Trauma Centre. (See HOP Pre-hospital Trauma Triage). Consideration of the need for angiographic embolization should guide the triage decision

4.4.2. Outside the Sydney Basin, patients with pelvic trauma should be triaged to the nearest trauma centre within 60 minutes of transport time. **In rural areas this may be a Regional Trauma Centre**

4.4.3. Patients under the age of 16 years with pelvic trauma should be preferentially triaged to a Paediatric Major Trauma centre. These are Sydney Children's Hospital, Westmead Children's Hospital and John Hunter Hospital in Newcastle.

4.4.4. Suspicion of major pelvic trauma in a hypotensive patient should prompt a request for interventional radiology services to be mobilised at the time of the initial prehospital notification to the receiving hospital.

5. References

1. Croce et al; "Emergent fixation for Pelvic Fractures" Journal of American College of Surgery, 2007; 59 (1); 935-9

2. Gonzalez et al; "The Utility of Clinical Examination in Screening for Pelvic Fractures", Journal of American College of Surgery, 2002; 194; 121-125

3. Mirza A, Ellis T; "Initial management of pelvic and femoral fractures in the multiply injured patient."; Critical Care Clinics, 2004, 20:159-170

4. Alonso JE, et al; "The management of complex orthopaedic injuries" Surgical Clinics of North America, 1996, 76(4): 879-903

5. Pryor JP et al; "Initial care of the patient with blunt polytrauma" Clinical Orthopaedics and Related Research, 2004 422: 30-36

6. Fitzpatrick MK; "A new tool for the initial stabilization of pelvic fractures: The TPOD (Trauma Pelvic Orthotic Device)"; Journal of Trauma Nursing, 2002, 9(1), 20-22

7. DeAngelis NA et al; "Use of the trauma pelvic orthotic device (T-POD) for provisional stabilisation of anterior-posterior compression type pelvic fractures: a cadaveric study." Injury, 2008, 39(8); 903-6