Queensland Trauma Education

PELVIC TRAUMA

Prioritisation in trauma

Case discussion

Facilitator resource kit

Clinical Excellence Queensland
JAMIESON TRAUMA INSTITUTE
CSDS Clinical Skills Development Service
Queensland Government

Queensland Trauma Education

The resources developed for Queensland Trauma Education are designed for use in any Queensland Health facility that cares for patients who have been injured as a result of trauma. Each resource can be modified by the facilitator and scaled to the learners needs as well as the environment in which the education is being delivered, from tertiary to rural and remote facilities.

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Queensland Trauma Education
Pelvic Trauma – Prioritisation in trauma: Case discussion – Facilitator resource kit
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An electronic version of this document is available via csds.qld.edu.au/qte

About this training resource kit

This resource kit provides an opportunity to explore competing priorities in the trauma patient.

National Safety and Quality Health Service (NSQHS) Standards

Target audience

Emergency department medical and nursing clinicians.

Duration

30 minutes.

Group size

Suited to small group participation.

Learning objectives

By the end of this session the participant will be able to:

- Recognise important assessment features of the trauma patient
- Discuss impact of abnormal investigations on decision making
- Utilise communication skills to lead the trauma team to deliver care needs

Facilitator guide

1. Facilitator to deliver case discussion and utilise the question-and-answer guide to promote discussion.
2. Utilise supporting resources to reinforce learning throughout discussion.

Supporting resources (in Printable Resources)

The following supporting documents are provided for this case discussion:

1. Pelvic Xray- binder on
2. Pelvic Xray- binder off
3. Chest Xray
4. R wrist lateral shoot though Xray
5. Venous blood gas
6. Structured assessment in trauma poster

Case discussion

Case study

20yo male is brought to ED after being involved in a moderate-speed MBC in which he was witnessed to run up the back of a stationary vehicle coming to a sudden deceleration.

He was wearing protective equipment, including a helmet. There was significant damage to his motorbike.

He was found to be awake on scene, initial vitals with the ambulance were: HR 80, BP 120 systolic, sats 99% RA and RR 20.

He complains of pain to his R wrist and pelvis. The crew are concerned by his mechanism of injury and place a pelvic binder due to his pelvic pain.

Question and answer guide

1. What approach do you take to assess this patient?

Focus on Trauma Assessment: CABCD

Apply monitoring and recheck perfusion

Consider life threats- in this case primarily haemorrhage from pelvic or abdominal injury

2. On examination his vital signs are unchanged, he has lower abdominal tenderness and pain on palpation of his pubic symphysis. He has bruising around his base of his penis, nil blood at the penile meatus and no wounds, crepitus or malalignment to the pelvic bones. The rest of his primary survey is normal.
What major injuries are concerning in this patient presentation?

- Abdominal-pelvic injury
- Renal tract injury- bladder, urethra, ureters
- Genital trauma- testicles, penis

3. What tests will help with the diagnosis?

Bedside: urine for haematuria, EFAST- exclude intraabdominal free fluid, VBG- electrolytes, Hb, acid-base status

Laboratory: formal biochemistry (chem20), lipase (blunt abdo trauma), FBE (trends in Hb), coags/ROTEM (coagulopathy), Group and Hold

Radiological: CXR- exclude major chest injury, PXR- pelvic injury/binder position, Cystogram- identify urethral injury, CT abdo/pelvis with arterial/PV/delayed phases for renal tract injury

4. The patient complains of ongoing pain in his R wrist. At this time a secondary survey is performed. He is identified to have a tender, deformed R wrist which is pale, cold, sluggish cap refill and has abnormal sensation. His R leg is tender with bruising to the upper medial thigh, neurovascular exam normal distally. His vital signs remain unchanged, and the pelvic binder is still in situ. The team perform Xray imaging and repeat the PXR with the binder off. What do the investigations demonstrate?

- CXR NAD
- PXR binder on- nil overt bony injury. PXR binder off- increase in pubic symphysis diastasis
- R wrist XR- significantly displaced R radius and ulnar fracture
- VBG NAD

5. How are the next steps in managing his wrist fracture balanced against his pelvic injury?

Understand need for urgent reduction given neurovascular compromise

Caution with AP (open book) pelvic injury for risk of bleeding and resultant haemodynamic compromise

Recognise that all sedative agents have potential to precipitate drop in haemodynamics in the setting of hypovolaemia

Balance need for CT imaging to define injuries vs timeliness of fracture reduction

6. How can the risk of hypotension be mitigated in this patient?

- Put the binder back on!
- Give bolus IV fluids
- Use cautious strategy for sedation administration
- Have vasopressor agents available

7. His haemoglobin is 135 on the VBG. What does this mean?

Not much initially! Hb is not a good marker of acute blood loss, as what is reflected on the lab result is the haemoglobin concentration in the blood. It is not until the patient has required IV fluids (or blood) or time has passed for serum redistribution so that dilution occurs and the Hb drops.

Clinical assessment, and reassessment, for any signs of hypoperfusion and therefore bleeding requires continuous monitoring to allow early intervention.

Acronyms and abbreviations

Term	Definition
MBC	Motor bike collision
VBG	Venous blood gas
FBE	Full blood examination
ROTEM	Rotational thromboelastometry
EFAST	Extended focussed assessment with sonography in trauma
CT	Computed tomography
CXR	Chest Xray
PXR	Pelvic Xray
AP	Anterior – posterior
IV	Intravenous
NAD	Nil abnormalities detected
Hb	Haemoglobin

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