

Indications for Whole-Body Multislice CT (Pan-Scan) in the Blunt Trauma Patient

Multislice-CT Scanning has become the primary imaging device in the emergency management of severe trauma patients¹⁻⁷. With the support of the radiology department, the standard imaging protocol for the emergency management of severe trauma will be adapted as below:

1. The principles of ATLS/EMST remain unchanged. An initial chest X-ray is still taken in all trauma patients.
2. Only respiratory and haemodynamically stable patients should proceed to CT.
3. Routine trauma series xrays should not be performed in the patient who fills Pan-Scan criteria. Suspicion of pelvic injury should prompt 'binding' until imaging excludes injury.
4. The patient undergoing a Pan-Scan should have an 18 gauge intravenous cannula insitu for IV contrast. Creatinine level testing should not delay the scan.
5. There are 3 facets of Pan-Scan criteria: *mechanism of injury, physiological status pre-resuscitation and type of injuries*. Only one of the below criteria needs to be fulfilled and the patient should proceed to Pan-Scan.
6. Patients fulfilling MOI criteria alone, need to have the Pan-Scan request authorised by an EDSS or Surgical Consultant responsible for the patient's care, and the Consultant's name should appear on the request form.
7. Children 15 years and younger are excluded from the protocol. Investigation in this group is at the discretion of the EDSS and Admitting Trauma Surgeon (Paediatric or other).

Mechanism of Injury

- Pedestrian or cyclist hit by a car at any speed
- High speed car or motorcycle collision (>50kph)
- Car roll over or ejection from car
- Death of another passenger
- Fall from an unclear or > 3m height
- Explosion
- Torso crush injury
- Unknown circumstance

Initial Vital Signs (prior to resuscitation)

- Glasgow Coma Scale < 10
- Systolic BP < 80mmHg
- RR < 10 or >29
- O2 sat. < 90% (<85% in those > 75 years)

Injury Pattern

- Flail or open chest
- Unstable pelvic fracture
- Fractures > 1 long bone
- Proximal amputation

1. Prospective randomized trial of a modified standard multislice CT protocol for the evaluation of multiple trauma patients. Heyer CM et al *Rofo* 2005 Feb; 177 (2): 242-9
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3. Whole body imaging in blunt multisystem trauma patients without obvious signs of injury: results of a prospective study. Salim A et al *Arch Surg* 2006 May; 141 (5): 468-73; discussion 473-5
4. Computed tomography whole body imaging in multi-trauma: 7 years experience. Sampson MA et al. *Clin Radiol*. 2006 Apr; 61 (4): 365-9
5. Diagnostic imaging in polytrauma: comparison of radiation exposure from whole-body MSCT and conventional radiography with organ-specific CT. Wedegartner U et al. *Rofo* 2004 Jul; 176 (7): 1039-44
6. Whole-body computed tomography in polytrauma: techniques and management. Linsenmaier U et al *Eur Radiol*. 2002 Jul; 12 (7): 1728-40. *Epub* 2001 Dec 13
7. Modern CT diagnosis of acute thoracic and abdominal trauma (Article in German). Rieger M et al. *Radiologe* 2002 Jul; 42 (7): 556-63