Silver Trauma: Anatomical Injury Patterns of Fall From Standing

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Introduction
- Elderly "Silver Trauma" patients who present with low velocity trauma such as fall from standing (FFS) are often imaged in the same way as young major trauma patients with Whole Body CT (WBCT).
- Emergency Department clinicians often want to exclude abdominal visceral injury. E.g. liver/splenic laceration from rib fracture etc.
- The process of scanning, image reconstruction and reporting of WBCT involves significant workforce and time dedication, which can introduce delay in the management of the patients, including other emergency patients who may require more urgent attention.
- Radiation dose imposed by WBCT is significant even in ageing population (1).
- Potential increased risk of contrast induced nephropathy due to increased contrast volume (2).

Aims
- The purpose of this study is to identify anatomical distributions of injuries related to FFS in order to determine whether this subset of patients truly require WBCT.
- To suggest appropriate imaging guideline for silver trauma such as the HECTOR guideline (3).

Methods and materials:
- All patients with greater than 60 years old who had WBCT between 1/4/2018 and 30/11/2018 were found from CRIS database of BSUH.
- CT reports, request forms, discharge letters and electronic ED records were utilised to identify patients who had WBCT due to FFS.
- Resulting injuries were categorised into major anatomical regions.

Results:
- 43 FFS patients(22%) who had WBCT were identified after exclusion of 50 cases of RTA, 8 cases of minor collision injuries and 95 cases of other types of fall, from a total of 196 elderly trauma patients.
- 20(47%) of the 43 FFS patients had radiological injuries, which included body/limb/head injuries.
- There was clinical suspicion of abdominal injury in 53% of the 43 FFS patients due to abdominal tenderness/bruises, and patients being anticoagulant(5 patients were anticoagulated).
- 0 abdominal/pelvic visceral injury found on WBCT.
- 4 patients died, likely as a result of trauma(3 thoracic/neck + 1 head injuries).
- Anatomically categorised injury patterns were recognised in the 20 injured patients as shown in the charts.

Conclusion:
- Our study suggests that abdominal injury is unlikely in elderly patients with FFS injury as there was 0 case of abdominal injury despite clinical suspicion in more than half of the cases in our small cohort. This is consistent with recent literature (4).
- Thus, it is reasonable to advocate focal CTs such as thoracic imaging, instead of WBCT in most circumstances in order to improve efficiency in management of patients and resources; and to protect patients from unnecessary radiation and potential contrast induced nephropathy, as a result of increased contrast volume in WBCT.
- The study is in keeping with the guidelines provided by HECTOR (3).

References:
2. NICE. Diagnostics Assessment Programme, Point of care, Creatinine tests to assess kidney function before administering intravenous contrast for computed tomography (CT) imaging Final scope [Internet]. 2018.
3. Heartlands Elderly Care Trauma & Ongoing Recovery [Internet]. Heftemcast.co.uk. 2019