

Injury pattern in 'silver trauma' patients who fall from standing: Is Computerised Tomography (CT) imaging of the abdomen/pelvis(AP) really necessary?

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Background

- Whole body CT (WBCT) or CT chest/abdomen/pelvis(CT CAP) are increasingly used to determine injury in older patients who fall from standing.
- In an era of value-based healthcare, liberal use of CT raises concerns over resource use, radiation exposure and cost.
- Several previous studies have suggested low yield for intra-abdominal injury from WBCT or CT CAP.
(1)(2)

Aim

The aim of this study is to identify patterns of injury in patients aged 65 or over who have had a fall from standing, in an effort to determine whether WBCT or CT CAP is truly necessary.

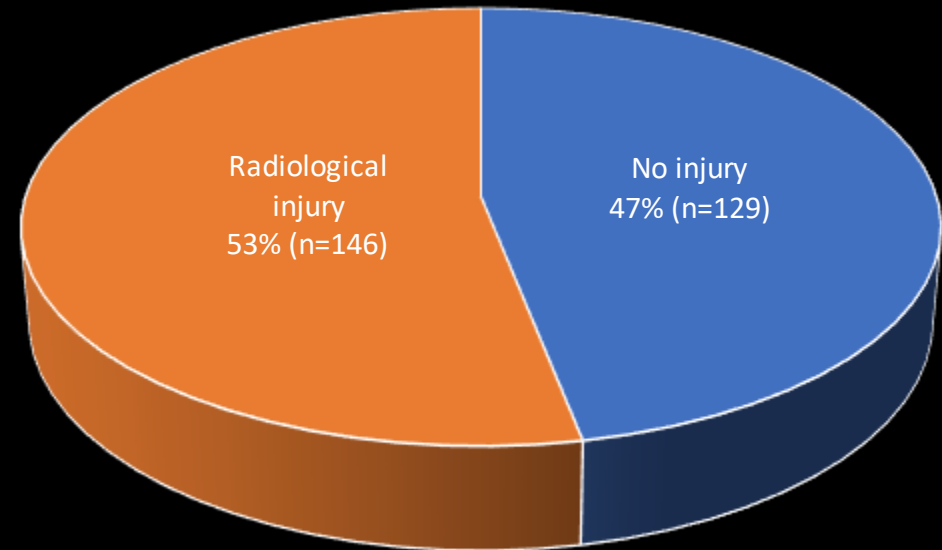
Methods

- Retrospective data of a 4 year period was collected using patients' electronic records and Radiology Information System.
- Patients aged 65 or over, who fell from standing, and had either whole-body CT or CT CAP with IV contrast, were identified.
- Radiologically diagnosed injuries were categorised into anatomical patterns.

Results

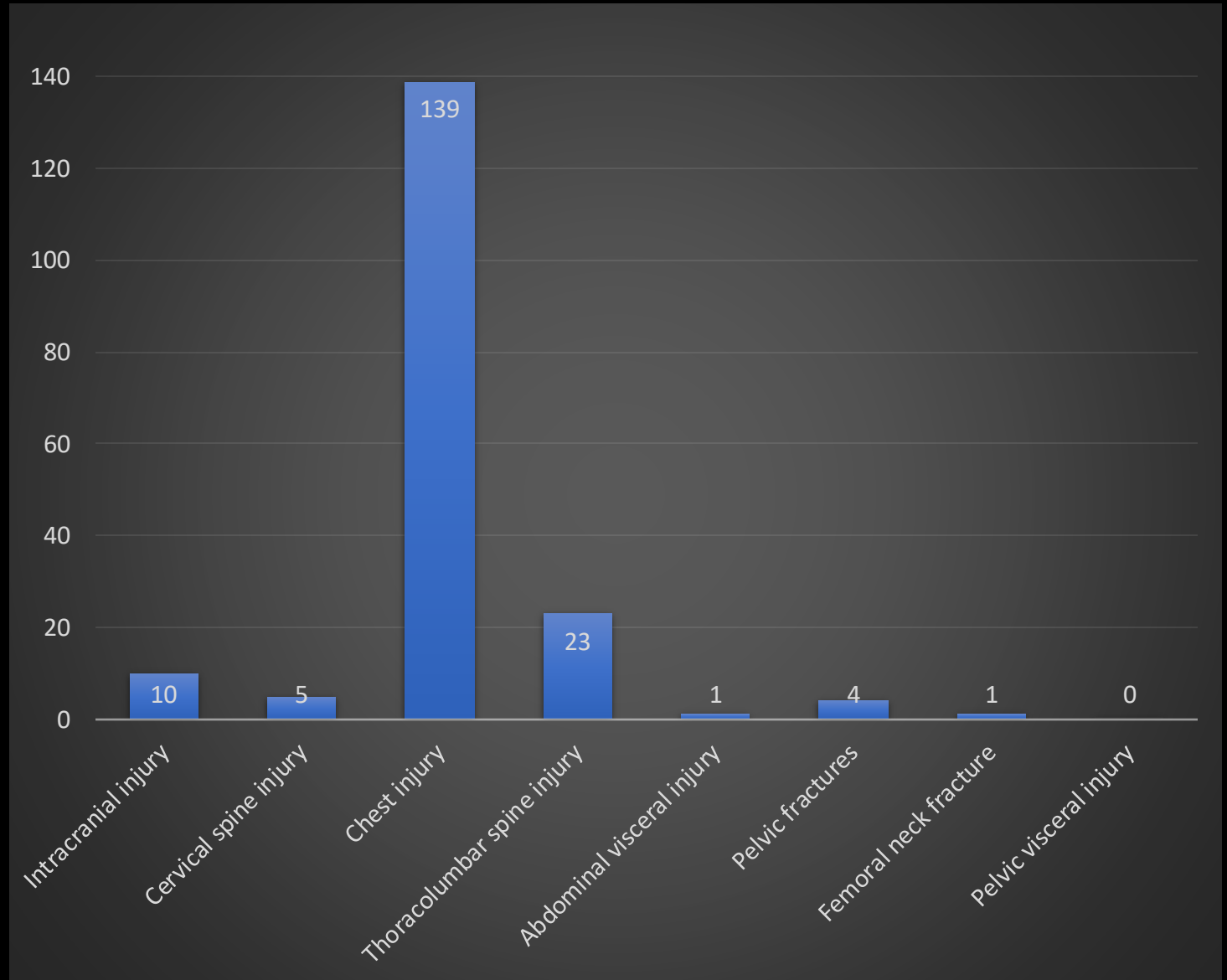
- 275 patients had a fall from standing with resultant whole-body CT or CT CAP during the 4 year period.
- 47% (n=129) had no injury.
- 53% (n=146) had radiologically diagnosed injuries.

Injury vs No injury



Results: Anatomical Patterns of Injury

- Of the patients who had radiologically diagnosed injuries, 4% (n=10) had intracranial injury, 2% (n=5) had cervical injuries, 50% (n=139) had chest injuries, 8% (n=23) had thoracolumbar fractures, 0.4% (n=1) had abdominal visceral injury, 1% (n=4) had pelvic fractures and 0.4% (n=1) had femoral neck fractures.
- 0 patients had pelvic visceral injury.



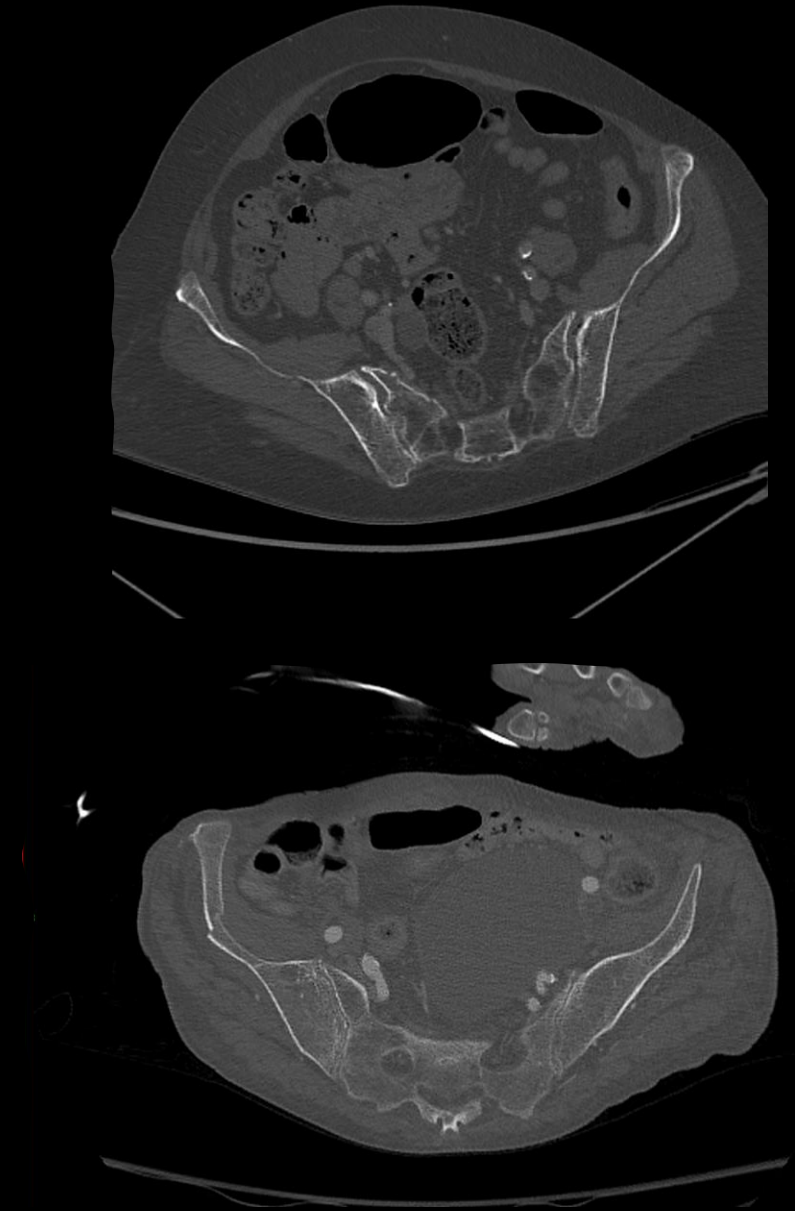
Results

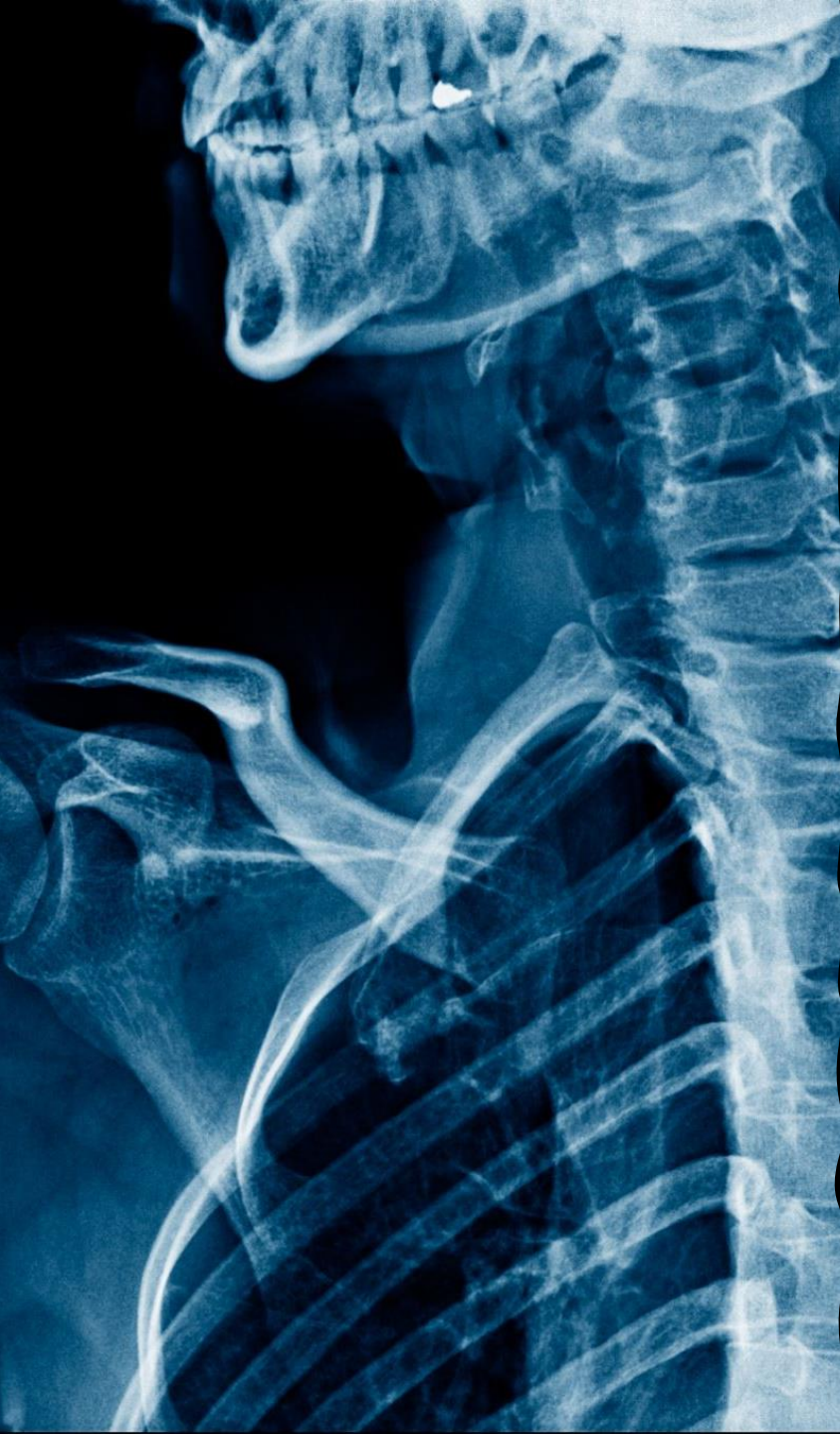
- 1 patient sustained a visceral abdominal injury.
- This patient was haemodynamically unstable on first assessment, had a rigid abdomen and guarding. He was anticoagulated.
- CT scan revealed a grade 3 liver laceration and grade 5 splenic laceration.
- The patient was given 1 IU of packed red cells and reversal of anticoagulation.
- *No procedural intervention was received.



Results

- Of the 2% (n=4) of patients who had pelvic fractures:
- 3 had pubic rami fractures
- 1 had an iliac blade fracture
- 1 had a sacral fracture
- *None of these patients required surgical intervention.





Conclusion

- Our results indicate that the vast majority of 'silver trauma' patients who fall from standing either have no radiologically diagnosed injury or sustain chest injuries.
- This study suggests that visceral abdominal and pelvic injuries are rare in 'silver trauma' patients who fall from standing. More emphasis on clinical signs and haemodynamics are warranted. Anticoagulation may be a risk factor.
- Targeted CT imaging is recommended.
- Further work is needed in collaboration with the Scottish Trauma Network, to identify a risk stratification score/clinical decision tool to guide CT imaging in 'silver trauma' patients who fall from standing.

References

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2. Justyn Hwee Jeon, David Yu. Silver trauma: anatomical injury patterns of fall from standing. *Clinical Radiology*. 2019 Oct; 74: Suppl 2. E6.