

2021 Best Research Poster Award



Does Trauma Pan Scan Eliminate the Need for Tertiary Surveys in a Regional Hospital?

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INTRODUCTION

Debate exists over the place of Whole Body Trauma CT (WBCT; vertex to pubic symphysis) in the assessment of trauma patients. Proponents argue a decrease in time consuming and risky transfers, decreased time in the Emergency Department, and improved injury detection rate. Ionising radiation remains a real concern in the application of this technology, with many arguing for a Selective CT (SCT) approach.

OBJECTIVES

To determine effect of WBCT on the rate of missed injuries as identified at the tertiary trauma survey (TTS).

METHOD

A retrospective analysis was performed on a series of trauma patients presenting to University Hospital Geelong following the introduction of a standardised TTS (Tertiary Survey) form in 2017. Patient episodes were assessed for initial imaging protocol (WBCT vs Selective CT vs plain films), additional admission imaging, length of stay, clinically significant injuries, and when these were identified. Injuries were further classified using the Abbreviated Injury Scale (AIS).

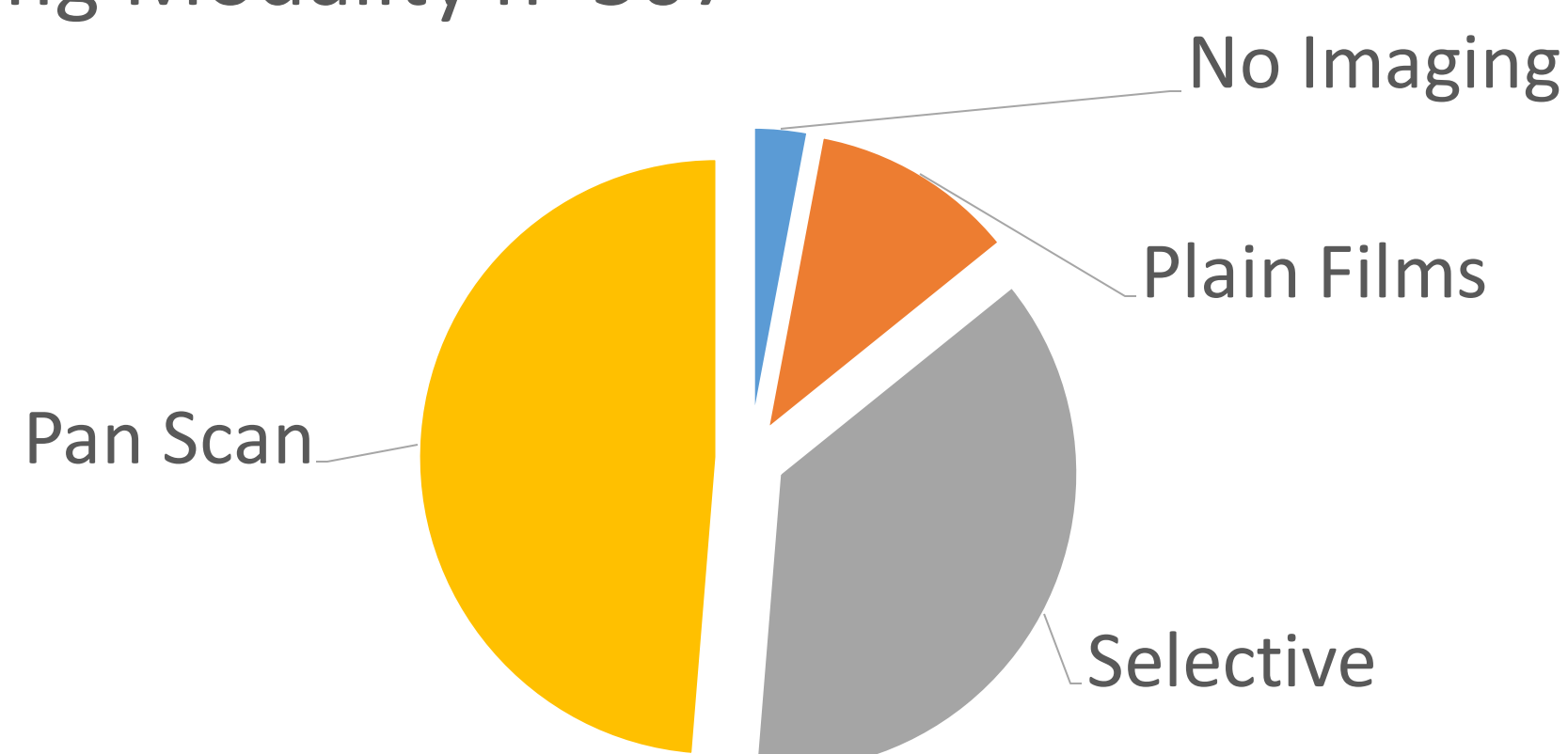
Injury Identified on TTS	ISS	AIS of missed injury	Imaging	Mechanism
Dental #	1	1	WBCT	Animal
Dental #	9	1		MBA
Dental #	5	1		Boating
Undisplaced pubic rami #	8	2		MVA
Grade 1 ACJ Dislocation	4	2		Mountain Bike
Distal humeral #	29	3		Assault

Table 1: Injuries detected at TTS.

RESULTS

507 patients were included. The rate of additional significant injuries at the time of TS was 1.18% (n=6, Table 1), each requiring conservative management only. There was no significant difference in injury detection based on initial imaging protocol, however there were 3 near misses identified (ISS 8 to 16). Of these patients, 2 were selectively CT'd and one subject to a plain film series, with clinically significant injuries identified upon completion trauma imaging requested following early review. Overall, 2.9% (n=15) of patients had completion trauma imaging within the same admission, with associated additional radiation dose. WBCT was associated with higher ISS and length of stay (p<0.001). Controlling for ISS there was no difference in length of stay between imaging modalities, with the exception of ISS 0 who appeared to have longer admissions if subject to WBCT (p<0.001).

Imaging Modality n=507



CONCLUSION

This study fills in the research gaps for patients with broad range of injury types, as is the common presentation in Level 2 trauma centres. The data indicates that early assessment in trauma with a thorough primary and secondary survey, and appropriate adjunct imaging, leads to a low rate of injuries detected at the tertiary survey stage. No evidence could be found to show that SCT was inferior to WBCT in the rate of missed injuries on the tertiary survey. This may allow for the omission of tertiary survey and earlier discharge in many trauma patients.