

CT Imaging for Trauma Goes Beyond Injury Identification: A Descriptive Analysis of Incidental Findings at a Level II Trauma Center.

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INTRODUCTION

Total body CT scans for trauma are being increasingly applied in the evaluation for trauma patients at risk for serious injuries based on high-risk injury patterns. The technologic advances associated with CT scans has improved the accuracy of injury diagnosis, and incidental non-trauma findings are being commonly encountered. Currently at our trauma center, when incidental findings are documented, patients are referred to their primary care physicians for follow-up, however documentation of the follow-up is limited.

PURPOSE

To evaluate and document the incidence and patterns of incidental findings on CT scans obtained for trauma evaluation.

METHOD

Following IRB approval, the trauma data base was queried for trauma patients evaluated in the emergency room with total body CT scans. There was n=313 CT scans that were reviewed for this study spanning a period from January 2015 to June 2017. CT findings were documented, including traumatic injuries, and incidental findings. Incidental findings were categorized as category I (potentially severe requiring additional workup), category II (diagnostic workup and follow up depending on symptoms), and category III (findings considered minor, no additional work-up).

RESULTS

Demographics: Total of 313 study subjects were used with mean age of the cohort being 35 years. Mean Injury Severity score (ISS) was 9. Blunt mechanisms comprised the majority of subjects with 78%. Co-morbid conditions were tobacco use (20%), Diabetes Mellitus(15%), Alcohol and/or drug use (10%) and Coronary artery disease and /or Hypertension(10%).

CT Findings: Incidental non-trauma findings occurred in 36%(n=113). Of those scans there were n=165 incidental findings.

Category I findings were in 42%, n=70. They were comprised primarily of organ specific masses and nodules and examples are; {Thyroid (n=21), Pulmonary (n=20), Liver (n=8), Kidney (n=8), and Pancreas (n=1).

Category II findings were in 53% and involved organ and disease specific findings and examples are; {Hernias (n=16), Biliary DZ (n=12), Gynecologic (n=12), GU cyst (n=20), GU stones (n=4) Vascular (n=4)}.

Category III findings were in 5% and included small organs cyst, or non-specific organ based findings.

CONCLUSIONS

A descriptive evaluation of CT scan findings for trauma revealed that over one third of patients had incidental findings and almost 50% were clinically significant warranting follow-up. Further prospective study is warranted to evaluate the incorporation of referral based protocols to facilitate diagnostic evaluation and follow-up for patients with clinically significant incidental findings on CT scans for trauma