

**Role of Multi Detector CT in
Imaging
of Chest Trauma
Essay**

**submitted for Partial Fulfillment of Master Degree in
Radio Diagnosis**

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SUMMARY & CONCLUSION

Injuries to the thorax are the third most common injuries in trauma patients, next to injuries to the head and extremities. Thoracic trauma has an overall fatality rate of 10.1%, which is highest in patients with cardiac or tracheobronchial-esophageal injuries. Furthermore, the presence of thoracic injuries in the setting of multisystemic trauma can significantly increase patient mortality.

The introduction of multi—detector row CT has offered a number of advantages in the work-up strategy of emergency patients when compared with single-section CT .The shorter scanning time permits better opacification of the blood vessels and improved contrast material enhancement of parenchymal organs. Furthermore, faster data acquisitions allow multiple consecutive CT examinations in the same patient in a shorter period of time.

CT has been credited with changing management in up to 20% of chest trauma patients with abnormal initial radiographs . CT is more accurate than radiography for the evaluation of pulmonary contusion, thereby allowing early prediction of respiratory compromise . It is also valuable in the diagnosis of fractures of the thoracic spine, especially at the cervicothoracic

junction, which is difficult to evaluate with conventional radiography. In addition, CT has helped exclude thoracic aortic injury, thereby limiting the number of catheter aortographic examinations.

Furthermore, multiplanar and volumetric reformatted CT images provide improved visualization of injuries, increased understanding of trauma-related diseases, and enhanced communication between the radiologist and the referring clinician.

The advent of multirow CT not only creates new opportunities but also requires changes in radiologic viewing methods and data handling. Multiplanar reformation (MPR), shaded surface display (SSD), maximum intensity projection (MIP), and volume rendering are the most commonly used two- and three-dimensional postprocessing techniques. They may be used as the initial and only imaging modality for assessment of vascular pathologic conditions and for surgical planning, often obviating conventional angiography and hereby leading to reduced costs.