

**ID: 117**

**Educational Abstract**

Topics: Neuroradiology

Keywords: Trauma, CNS, CT, MR, Injury

**Acute TBI: What to expect? What is commonly missed?**

**Luis Manuel Montes China, Hans Hess Arcelay, Amanda Marrero, Edgardo Morales, Eduardo J Labat Alvarez**

University of Puerto Rico Medical Sciences Campus, Puerto Rico (U.S.)

Learning Objectives

1. Review indications for imaging modalities in Trauma settings.
2. Recognize the different types of TBI including intra-axial, extra-axial, and secondary injuries.
3. Discuss pertinent imaging findings in TBI and identify pathologies that may require prompt intervention.

Background

Traumatic brain injury (TBI) occurs when trauma causes damage to intracranial structures. TBI can result when a patient's head suddenly and violently hits an object, when an object pierces the skull and enters brain tissue, or during episodes of rapid acceleration-deceleration without the need for direct contact. TBI affects 1.7 million people annually and contributes to 30.5% of all injury related deaths in the United States

Findings and procedure details

TBIs are medical emergencies and merit a quick assessment. Furthermore, imaging plays an integral part in determining trauma severity and appropriate management. In cases of moderate and severe trauma, a noncontrast multi-detector CT (MDCT) is the study of choice given that it rapidly identifies multiple pathologies including: Calvarial injury, foreign body presence, hemorrhage, nonhemorrhagic axonal injury, herniation, and hydrocephalus. MRI is also a common tool used for diagnostic and prognostic purposes, particularly in cases of shearing injury

Conclusion

TBIs can result in significant neurological damage and carry a high morbidity and mortality rate, hence it is important to quickly assess the severity through the use of imaging such as MDCT and MRI.

