

however, while PTA and LOC are important indicators of acute injury, they are less predictive of eventual recovery time and outcome.

■ TBI TYPES AND PATHOLOGIES

MILD TBI (CONCUSSION) It is estimated that 70–90% of all treated TBIs are mild in severity based on traditional case definitions and acute injury characteristics, with most reported estimates in the order of 85%. The published figures likely underrepresent the true incidence of mTBI because of variable case definitions and heterogeneous methods. Moreover, because a subgroup of individuals with milder brain injuries does not seek medical attention, epidemiologic studies that depend on hospital-based data also underestimate the true incidence.

The term *concussion*, while popular, is vague and is not based on widely accepted objective criteria, resulting in multiple definitions from various groups. There has been debate as to whether concussion is part of the TBI spectrum or a separate entity. In 2017, the Concussion in Sports Group issued a consensus statement that “concussion is a traumatic brain injury” (McCrory et al, 2017). By firmly placing concussion in the spectrum of TBI, the underlying pathophysiologic processes common to all TBI presentations can now be considered together.

CT imaging is often normal in this population. However, emerging evidence indicates that 3-tesla (3T) MRI scans can identify pathology consistent with acute brain injury such as contusion and microhemorrhage. When patients with mTBI have CT and/or MRI abnormalities, they are often referred to as complicated mTBI and are more likely to have an unfavorable outcome.

■ SKULL FRACTURE, EXTRA-AXIAL HEMATOMA, CONTUSION, AND AXONAL INJURY

Skull Fracture A blow to the skull that exceeds the elastic tolerance of the bone causes a fracture. Intracranial lesions accompany roughly two-thirds of skull fractures, and the presence of a fracture increases many-fold the chances of an underlying subdural or epidural hematoma. Consequently, fractures are primarily markers of