Hyperextension Injuries Thoracic Spine
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10/29/2010

History
3 year old restrained passenger involved in motor vehicle accident.

Diagnosis
Hyperextension Injuries Thoracic Spine

Additional Clinical
Minimal prepontine extraaxial hemorrhage on CT of the brain. Extensive abdominal visceral injuries including splenic laceration, left renal laceration, mesenteric hematoma, and right adrenal hematoma with extensive hemoperitoneum.

Discussion
The thoracic spine is fairly resilient to injury owing to stabilization by the shoulder girdle and rib cage. Most thoracic injuries are related to hyperflexion giving rise to compression fractures and hyperflexion-dislocation injuries. Hyperextension injuries in the thoracic region are very uncommon and not usually even mentioned in the various classification schemes. Hyperextension injuries are usually due to falls with the patient’s back landing across a narrow structure such as a fence or a tree limb. The upper thoracic spine may have a slight lordosis and predispose to hyperextension injuries which may be potentiated in children because of the increased ligamentous and joint capsular laxity, decreased muscle mass and overall flexibility.

Findings
CT-Anterior-inferior corner fracture of T2 with the height of the fragment greater than the width and transverse splitting of the posterior elements of T3 extending anteriorly beneath the superior endplate of the vertebral body.
MR-Sagittal T2 and IR MR images show significant craniocervical junction injury (precervical hemorrhage and edema, disruption of the anterior longitudinal and apical ligaments, central cervicomедullary edema, and posterior interspinous and paraspinal edema; subluxation of the atlanto-occipital joints not shown) and hyperextension teardrop fracture of T2 and hyperextension distraction injury of T3. The anterior longitudinal ligament is functionally disrupted by the teardrop fracture, the posterior longitudinal ligament is buckled but intact, and the posterior ligamentous complex is likely disrupted at T2-T3. Cervicothoracic epidural hematoma is seen anteriorly.

Reference
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