Hyperextension Teardrop Fracture
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History
17 year old unrestrained driver who lost control of the vehicle and struck a tree.

Diagnosis
Hyperextension Teardrop Fracture

Additional Clinical
Multiple additional injuries including pneumothorax and bronchial disruption.

Discussion
Hyperextension teardrop (HET) fracture is related to avulsion of the anterior longitudinal ligament at the anterior-inferior corner of the vertebral body. In older patients, HET fracture typically involves C2 related to osteopenia and a relatively more rigid lower cervical spine (spondylosis); pericervical swelling and neurologic sequelae are usually not present. In younger patients, avulsion usually occurs in the lower cervical spine; greater force is required to produce this injury in non-osteopenic vertebrae and consequently there is extensive soft tissue swelling and usually central cord injury. HET fracture is characterized by a triangular fragment avulsed from the anterior inferior corner of the vertebral body. The vertical dimension of the fragment is equal to or greater than the horizontal dimension; this differentiates from hyperextension dislocation injury. HET fractures are stable in flexion (because of intact PLL, posterior ligamentous complex and facets) but unstable in extension. HET fractures are easily diagnosed by conventional radiography but CT is often needed to evaluate for other injuries and MR is needed to assess ligamentous integrity, disc herniation, extra-axial hemorrhage and cord injury.

Findings
CT-Triangular fracture involving the anterior-inferior corner of the C5 vertebral body; the vertical component of the triangular fragment is longer than the horizontal component. Alignment of the cervical spine is normal. Precervical soft tissue swelling is obscured by the subcutaneous emphysema.
MR-Sagittal T2 and FS T1 images confirm the C5 fracture and demonstrate precervical edema and hemorrhage and intact ligaments.

Reference
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