Hangman's Fracture
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History
16 year old involved in motor vehicle accident.

Diagnosis
Traumatic spondylolysis of C2 (Effendi type I)

Discussion
Traumatic spondylolysis of the axis is typically caused by motor vehicle accidents or "clothes line" injury. The fracture most often involves the pars interarticularis, but may also involve the junction of the body and articular mass, the facets, or the lamina; while bilateral the fractures are not necessarily symmetric.

Traumatic spondylolysis is classified by the degree of separation of the fracture fragments and the C2-C3 disc space. In Effendi type I, the fractures are nondisplaced and the disc space is normal; hyperextension and axial loading is the mechanism. The anterior fracture fragment is displaced and there is distortion of the disc space in Effendi type II; the mechanism is hyperextension and axial loading with subsequent flexion. Effendi type III injuries are characterized by anterior displacement and tilting of the anterior fragment with C2-C3 interfacetal dislocation; the mechanism is initial hyperflexion with rebound hyperextension.

Traumatic spondylolysis is unusual in infants and toddlers. Congenital spondylolysis is rare. Neurologic deficit tends to be minor in type I and II fractures because of the relatively large bony canal at C2 (autodecompression) but cord injury is more common with type III.

Findings

Reference
Harris JH and Mirvis SE. The Radiology of Acute Cervical Spine Trauma. 3rd Ed (1996).
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