Vertical Odontoid Fracture
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History
13 year old male involved in a motor vehicle collision with intracranial hemorrhage and skull base fracture.

Diagnosis
Vertical Odontoid Fracture

Discussion
Classification scheme of odontoid fractures by Anderson and D’Alonzo recognizes 3 types: Type 1 involves the apex, Type 2 involves the base of the dens or synchondrosis and Type 3 involves the superior aspect of the body of the axis. Type 2 are most common. The occurrence of type 1 is controversial. The vertical fracture of the dens may represent the "fourth type". The mechanism of injury for dens fractures is related to a combination of hyperextension, hyperflexion and rotation. Pure vertical fractures of the dens may be related to axial loading on the anterior lip of the foramen magnum giving rise to vertical shear stress and a chisel type fracture. The incidence of this type of injury is unknown.

Findings
CR-Mild precervical soft tissue swelling. No cervical spine fracture or malalignment. Note a linear temporal bone fracture.
CT-Nondisplaced vertical fracture of the dens.

Reference
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