Atlanto-occipital Dislocation
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History
12 year old male restrained back seat passenger in a car hit by a snowplow.

Diagnosis
Atlanto-occipital Dislocation

Discussion
Atlanto-occipital dissociation refers to a complex spectrum of abnormalities at the craniocervical junction ranging from minor ligamentous injuries to subluxation to dislocation. Integrity of the craniocervical junction is largely related to ligaments and the paired atlanto-occipital joints. Anteriorly, a dense ligamentous structure extends from the axis to the ventral clivus; fibers extending from the axis to the tubercle of C1 are referred to as the atlanto-axial ligament and fibers extending from the tubercle of C1 to the clivus are referred to as the anterior atlanto-occipital membrane. The vertical components of the cruciform ligament extend from the posterior body of C2 to the dorsal clivus. The posterior longitudinal ligament continues cephalad as the tectorial membrane. The ligamenta flava join laminae of adjacent vertebral arches. The interspinous ligaments expand to form the ligamentum nuchae which inserts along the posterior foramen magnum and external occipital condyle. The atlanto-occipital joints are synovial socket-type joints; the sockets are shallow in infancy and deepen with age. Various radiographic measurements (Powers ratio, "X"-line, basion-axial interval and basion-dental interval) have limited application in pediatric imaging because of the variable degrees of ossification. CT provides the best assessment of the atlanto-occipital joint structure and avulsion injuries; MRI offers the best assessment of ligamentous injury to the craniocervical junction.

Findings
CT Brain-Hemorrhage at foramen magnum.
CT Cervical Spine-Bilateral atlanto-occipital dissociation.
MR-Sagittal T1, T2, IR and FS T1 and axial T1 and T2 shows

Reference
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