A challenging case of traumatic atlantooccipital dislocation in a child

Garvayo M, Barges-Coll J

Department of Neurosurgery and Spine Surgery Unit, Lausanne University Hospital, Lausanne, Switzerland

Aim: The aims of this article are twofold. First, to describe and review the diagnosis and management of atlantooccipital dislocation (AOD) in a 9-year old child. And second to review the ligamentous anatomy of the craniocervical junction (CCJ) and its role in AOD.

Materials and methods: Retrospective review of the medical record and radiological images was performed.

Results: We present a case in which the radiological criteria on the CT scan were not clear for AOD given that the dislocation was reduced at the time of imaging. High clinical suspicion of AOD was present and complementary MRI permitted the confirmation of the diagnosis with disruption of the transverse ligament and tectorial membrane. Surgery with Oc-C1-C2 fixation was performed with posterior transarticular C1-C2 screws and C0-C1-C2 joint opening and bone grafting. Neurological outcome was excellent with no neurological deficits at 6 months after the injury.

Discussion: AOD is a rare injury with a high rate or morbidity and mortality. Delayed or missed diagnosis has been proved to the be the most important predictor for mortality. CCI interval is the most reliable measurement for AOD. MRI is essential to identify the ligamentous injury and confirm the diagnosis in which radiological criteria on CT scan remain ambiguous. Occipito-cervical fusion is the standard of care and it has been proved to be a safe and effective treatment.

Conclusion: Traumatic atlantooccipital dislocation in children is more common than in adults. Its timely diagnosis and treatment are crucial in order to avoid detrimental consequences. High clinical suspicion should be present in all high velocity traumas in children and AOD should be systematically searched. MRI is a useful tool to contribute to the diagnosis of AOD.

M. Garvayo garvayomarta@gmail.com