ODONTOID SYNCHONDROSIS FRACTURE- CASE REPORT ON THE SUCCESSFUL MANAGEMENT OF A RARE INJURY

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Introduction: Traumatic cervical spine injuries are rare in children, with an estimated prevalence of 7.5 cases per 100000 individuals. The Axis(c2) however is the most commonly injured vertebra in children younger than 8 years old

Discussion: We report a case of odontoid synchondrosis fracture in a 5-year-old girl who was involved in a motor vehicle accident. The child was a front seat passenger, not wearing a seatbelt and was thrown out of the car upon collision. She was intubated for airway protection after a drop in her GCS. An urgent CT brain and cervical was performed which revealed a severe traumatic brain injury with diffuse axonal injury and an odontoid fracture. She was admitted to the ICU and was successfully extubated on day 3 post trauma. Neurology examination post extubation revealed no deficit. The fracture was reduced in the operation theatre by applying a sandbag behind the neck and carefully hyperextending the neck to correct the anterior angulation under image intensifier guidance before applying the halovest. Fracture reduction maintained at her 1st month followup. Halovest was removed after 10 weeks due to a pinsite infection. Xray's revealed a united fracture. Latest followup at 4 months post trauma revealed a well united fracture with good neck range of motion.

Conclusion: In young children, the axis is divided by synchondroses between the dens, body and neural arches. The cartilaginous plate between the dens and body of c2 is an area of potential weakness that does not ossify until a child is 5 to 7 years old. The weak synchondrosis, in combination with the relatively large size of a child's head, which can act as a pendulum in high speed trauma, makes the odontoid synchondrosis prone to injury. Most of these fractures however can be treated with reduction and external orthosis to excellent fusion rates