

PP28

Successful surgical treatment of odontoid fracture with atlanto-axial subluxation in a child

Silvana Tumbiolo¹, Marika Tutino¹, Tiziana Costanzo¹, Francesco Gioia², Ettore Fiumara¹

¹ U.O. Neurochirurgia, Azienda Ospedaliera, Ospedali Riuniti Villa Sofia Cervello, Palermo, Italy

² U.O. Radiologia, Azienda Ospedaliera, Ospedali Riuniti Villa Sofia Cervello, Palermo, Italy

Introduction: Injuries to the upper cervical spine in young patients are rare. The great part of these is treated with external immobilization. We report a child that presented a rostral type III odontoid fracture associated with atlanto-axial subluxation.

Methods: A 12 year old boy had a head and neck injury in a bike accident.

On admission to Hospital he presented severe neck pain. CT scan showed a fracture of the base of odontoid process with posterior dislocation of atlas-odontoid process respect to C2 body and bilateral atlanto-axial subluxation.

A manual reduction was made. MRI showed the reduction of the dislocation with transverse ligament intact.

The following day the patient underwent surgery with single-screw anterior odontoid fixation.

The postoperative course was uneventful. CT scan showed a correct position of the screw and a good alignment of odontoid fracture and of the C1-C2 articular facets.

The patient was discharged wearing a SOMI brace for two months.

Result: At one year follow-up the patient was asymptomatic. A dynamic cervical spine x-ray was normal.

Conclusion: Traumatic lesions of upper cervical spine in young patient are rare and odontoid fractures account for about 30%. Displaced type II fractures and rostral type III fractures are at high risk for non-union. In these cases surgical stabilization using anterior or posterior approach can be considered. Odontoid screw fixation ensures a rigid internal stabilization with preservation of motion at the atlantoaxial articulation.

In our case the severe dislocation of odontoid process fractured was considered dangerous and at high risk for non-union with only immobilization. The presence of bilateral atlantoaxial subluxation could indicate a posterior fixation. But we choiced the anterior odontoid screw reserving a posterior fixation if C1-C2 dislocation was also present postoperatively. But at one year follow-up the result was good and no other surgery was need.