

Background: Congenital atlantoaxial dislocation (CAAD) develops asymptotically for a long time. The main manifestations are pain and limitation of movement. Standard of care for CAAD - fusion C1-C2. What can lead to implant failure and redislocation.

Research question: analysis of postoperative complications of C1-C2 fusion.

Design: Case report

Methods: first patient with Atlas assimilation (AO) & hypoplasia of the C1 left posterior arch, second c os odontoides (OO) with the kyphotic deformity at the level of the clivus–axis angle.

Results: Case 1. ♀ 6 yo. Complaints on deformation CVJ. since 3 years old. Survey: X-ray CAAD with scoliosis. CT - AO, hypoplasia of the C1 arch, lateral angular atlantoaxial dislocation (LAAAD). Procedure: elimination of rotational deformation and LAAAD, screws fusion C1-C2, bone grafts.

After surgery, a good position screw. After 6 months redislocation and implant failure. 2 operation fusion C0-C2. After 3 months: CT - there is no fixation instability and LAAAD.

Case 2. ♀ 8 yo. Complaints on deformation CVJ, olimitation of head rotation. At the age of 7 acute torticollis (Grisel Syndrome). Survey X-ray CAAD. MRI basilar kyphosis, clivus–axis angle 99°, spinal stenosis at C2 level up to 0.45 cm. CT - OO, anterior dislocation C1. Procedure: elimination AAD, reduction of anterior dislocation C1, screws cervical fusion C1-C2, bone grafts. After surgery, clivus–axis angle 138°, spinal stenosis at C2 level up to 1 cm. After 3 months LAAAD and implant failure. 2 operation fixation C1-C3. Fusion C1-2 between right facet joint. Control investigation good position screw

Discussion: The formation of LAAAD occurred due to a violation of the biomechanics of the CVJ transition, which is associated with the determination of the asymmetric axial load of the skull bones for detection. The lack of formation of a natural biomechanical axis on the CJV leads to destabilization of the structure and requires an individual approach.