Basilar invagination treatment

- Anterior transarticular crossing screw fixation for reducible atlantoaxial dislocation with basilar invagination: a radiological feasibility study
- Pediatric Halo Use: Indications, Application, and Potential Complications
- Surgical Treatment of Basilar Invagination without Evident Atlantoaxial Instability (Type B) - A Systematic Review
- Atlantoaxial instability in Chiari formation- an analysis based on static and dynamic head imaging in 35 patients
- Basilar Invagination Diagnosis, Classification, and Radiology: WFNS Spine Committee Recommendations
- Surgical Strategy Analysis of Chiari Malformation With or Without Type II Basilar Invagination According to the Morphological Types of the Atlanto-Occipital Joint: A Retrospective Study of 212 Patients
- Mapping, classification, and surgical strategy for vertebral artery variation in posterior atlantoaxial joint release, distraction, and fusion surgery for basilar invagination and atlantoaxial instability
- The head position and cervical alignment in patients with Chiari malformation: A retrospective case-control study

Patients with minimal symptoms can be treated with non-operative modalities such as physical therapy, non-steriodal anti-inflammatory medication, or a cervical collar.

Surgery

see Atlantoaxial fusion.

Transoral approach

see Transoral approach for Basilar invagination

Case series

Sinha et al., managed 27 children by rigid variety of occiput/C1-C2-C3 internal fixation of various craniovertebral junction pathologies. All patients were subjected to thin cuts of computed tomography with 3D reconstruction for selecting appropriate rigid construct. Eight children had occiput-C2, 3 had occiput-C2-C3, and 16 had C1-C2 hardware constuct. One patient of C1-C2-plate fixation had section of C2 nerve root ganglia. Basilar invagination with atlantoaxial dislocation was reduced by new distraction/compression techniques.

Improvement in clinical features and correction of deformity with solid hardware construct were seen in all patients. Follow-up period ranged from 5-72 months. One patient was lost to follow-up, and one case died of compression of vertebral artery at C1 lateral mass. Patients of myelopathy had recovery rate of 90.9%. Hardware failure was seen in one patient, and wound infection was observed in two

cases.

Rigid variety of occiput/C1-C2 internal fixation is a safe and effective method in the management of variety of craniovertebral pathologies in pediatric population. This new technique of reduction of basilar invagination with atlantoaxilal dislocation from posterior approach may alleviate the need of high morbity associated with surgical procedure like transoral odontoidectomy in younger patients [1].

Videos

Interfacet distraction for type B - basilar invagination assisted by a novel sliding-traction head holder: 2-Dimensional Operative Video [2]

1)
Sinha S, Jagetia A, Bhausaheb AR, Butte MV, Jain R. Rigid variety occiput/C1-C2-C3 internal fixation in pediatric population. Childs Nerv Syst. 2014 Feb;30(2):257-69. doi: 10.1007/s00381-013-2232-3. Epub 2013 Jul 31. PubMed PMID: 23900630.
2)
Jian Q, Hou Z, Fan T. Interfacet distraction for type B - basilar invagination assisted by a novel sliding-traction head holder: 2-Dimensional Operative Video. World Neurosurg. 2023 Feb 1:S1878-8750(23)00049-9. doi: 10.1016/j.wneu.2023.01.033. Epub ahead of print. PMID: 36736772.