Basilar invagination classification

- Surgical Treatment of Basilar Invagination without Evident Atlantoaxial Instability (Type B) - A Systematic Review
- Basilar Invagination Diagnosis, Classification, and Radiology: WFNS Spine Committee Recommendations
- Mapping, classification, and surgical strategy for vertebral artery variation in posterior atlantoaxial joint release, distraction, and fusion surgery for basilar invagination and atlantoaxial instability
- Craniovertebral Junction Anomalies: World Federation of Neurosurgical Societies Spine Committee Recommendations Overview
- Chiari Type 1 Malformation and Syringomyelia in Children: Classification and Treatment Options
- Characteristics and evaluation of C1 posterior arch variation for transpedicular screw placement between patients with and without basilar invagination
- A novel classification and management scheme for craniocervical junction disorders with ventral neural element compression
- Morphometric Analysis of Posterior Fossa and Foramen Magnum among Pediatric Age Group 6 to 16 Years

Basilar invagination is often associated with other conditions such as Chiari malformation, syringomyelia, and atlantoaxial instability.

There are different classification systems for basilar invagination, but the most commonly used one is the classification proposed by Chamberlain in 1939 [1]. According to this classification, there are four types of basilar invagination:

Basilar invagination (BI) without atlantoaxial dislocation

see Basilar invagination without atlantoaxial dislocation.

Type I: Basilar invagination with no associated malformation. In this type, the tip of the odontoid process (a bony projection from the axis vertebra) is above the Chamberlain's line (a line drawn from the posterior margin of the hard palate to the posterior rim of the foramen magnum).

Type II: Basilar invagination with associated Chiari malformation. In this type, the tip of the odontoid process is above the Chamberlain's line, and there is downward displacement of the cerebellar tonsils into the foramen magnum.

Type III: Basilar invagination with associated platybasia. In this type, the odontoid process is not elevated above the Chamberlain's line, but the clivus (the sloping surface of the occipital bone) is flattened.

Basilar invagination with associated atlantoaxial dislocation

Type IV: Basilar invagination with associated atlantoaxial dislocation. In this type, there is displacement of the atlas (C1) and axis (C2) vertebrae, which can cause compression of the spinal

cord and brainstem.

It is important to note that basilar invagination can have varying degrees of severity, and the treatment approach will depend on the type and severity of the condition.

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Chamberlain WE. Basilar Impression (Platybasia): A Bizarre Developmental Anomaly of the Occipital Bone and Upper Cervical Spine with Striking and Misleading Neurologic Manifestations. Yale J Biol Med. 1939 May;11(5):487-96. PMID: 21433841; PMCID: PMC2602259.