

(A Health Awareness Initiative)

NEURO NEWSLINE

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CRANIOVERTEBRAL (CV) JUNCTION ANOMALY

Craniovertebral (CV) junction anomaly is a congenital or acquired abnormality that involves the occipital bone of the cranium, the foramen magnum (where the brainstem transforms or continues as the spinal cord) and the first two cervical vertebrae. These disorders develop due to fusion of any of these structures, or due to underdevelopment or misalignment of the bony components. They can cause compression of the lower part of the brainstem, the cranial nerves, and the uppermost part of the spinal cord in the neck region. This will eventually lead to paralysis of the limbs, numbness, difficulty in walking and bladder incontinence.

The classification mainly includes Atlantoaxial dislocation/ subluxation (AAD), Basilar invagination (BI), Platybasia, Klippel-Feil anomaly and Chiari malformations. Some of the acquired diseases like Rheumatoid arthritis, Paget disease and bone tumours like chordomas can lead to craniovertebral junction abnormalities. Injuries can lead to what is called as a traumatic

Atlantoaxial or an Atlanto occipital dislocation.

SYMPTOMS & SIGNS

Neck pain with headache, sometimes neck pain spreading to the arms may be one of the common features of this disease. This can be progressive depending on the grade of compression of the spinal cord and nerves. There can be

have giddiness, 'drop attacks' and visual disturbances.

DIAGNOSIS & TREATMENT

MRI & CT scan of the craniovertebral junction is extremely important to arrive at a diagnosis. We also advocate the use of MR-A (angiogram) and dynamic CSF flow studies in cases who are symptomatic and in cases where we are planning



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weakness of the upper and lower limbs, difficulty in appreciating sensation to touch, pain and temperature, inability to walk steadily and also varying degrees of bowel and bladder dysfunction. Some patients do have deformities of the neck (torticollis) with limitation of the range of movements of the neck. Patients who have compression of the brainstem & cranial nerves or syringomyelia (bulbia) can have difficulty in swallowing, nasal regurgitation and hoarseness of voice. Some do

surgery. Dynamic X Rays are always useful in these cases relating to the CV junction. Patients who are symptomatic with neurological deficits or deformities undergo decompressive surgeries and stabilisation with titanium implants. Following surgery, they will need immobilisation with cervical collar for a period of 3 months. Early and prompt identification of the anomaly and adequate treatment offers an excellent prognosis!



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