

Chiari Malformation in Adults

The fundamental cause of this condition is that the cerebellum is too big for the posterior fossa and is pushed down through the foramen magnum.

The three main effects of these are

1. Impairment/blockage of normal cerebrospinal flow (CSF) flow around the brain and spinal cord.
2. The downward pressure on the brain stem and cerebellum with stretching of the lower cranial nerves.
3. Damage to the spinal cord due to the development of CSF cysts in the spinal-cord, called a “syrinx” (pronounced “SirRinks”) which compress the sensory and motor pathways in the spinal-cord. This condition is called syringomyelia.

Directing cranial nerve such as the trigeminal to get your pain and retro-orbital pain

These effects cause the following symptoms

Symptoms

1. Raised CSF pressure effects: A headache and neck pain that begins in the back of the neck and radiates forward and is triggered by coughing, sneezing, straining and lifting. Reduced cognitive function with depression and memory loss.
2. Cranial nerve stretching effects on:
 - The trigeminal (5th) nerve giving retro-orbital and jaw pain.
 - The acoustic (8th) nerve giving hearing loss and tinnitus.
 - The acoustic (9 & 10th) nerve giving swallowing difficulty
3. Spinal cord impairment (syringomyelia) leads to numbness and tingling in shoulders, arms, hands, legs and imbalance/dizziness

Investigation

An MRI to demonstrating an anatomical abnormality and a Cine MRI CSF flow study showing poor CSF.

In the presence of anatomical and function abnormality and the opinion of an experienced team then the diagnosis can be made with reasonable certainty.

Treatment

In the presence of anatomical and function abnormality and the opinion of an experienced team then the diagnosis can be made with reasonable certainty.

The back of the bony posterior cranial fossa and the first cervical spine ring is removed to allow more space for the cerebellum to pass posteriorly rather than down through the tight hole of the foramen magnum.

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