

Chiari I Malformation and Magnetic Resonance Imaging (MRI)

Chiari I Malformation

Chiari Malformation is a condition in which the cerebellar tonsils protrude through the foramen magnum for more than 5mm (see Figure 1). This particular type of Chiari is congenital, but many patients are unaware of the presence until symptoms show in later years – typically 20-40 years of age.¹ Headaches, tingling of the limbs, swallowing troubles, and balance are a few of the symptoms presented with this condition.²



Figure 1. Odontoid is shown retroflexed, while tonsils are shown exiting the foramen magnum for 8mm, putting pressure on the spinal cord.³

Planning Chiari Treatment Using MRI

Chiari is seen more easily on MRI compared to other imaging modalities. By using MRI, a surgical plan can be made after scouting out exact location and extent of malformation.³ MRIs enable surgeons to map out their procedure, as well as compare before and after images. The tissue and spinal fluid are evaluated post operation to ensure patient's satisfactory quality of life will be regained. On the right, in Figure 2, a representation of a Chiari I Malformation before operation is shown. Figure 3 then shows what the patient will be left with after the surgical procedure has been performed. This in turn leads to symptoms diminishing almost completely for a majority of patients.

Before and After Operation

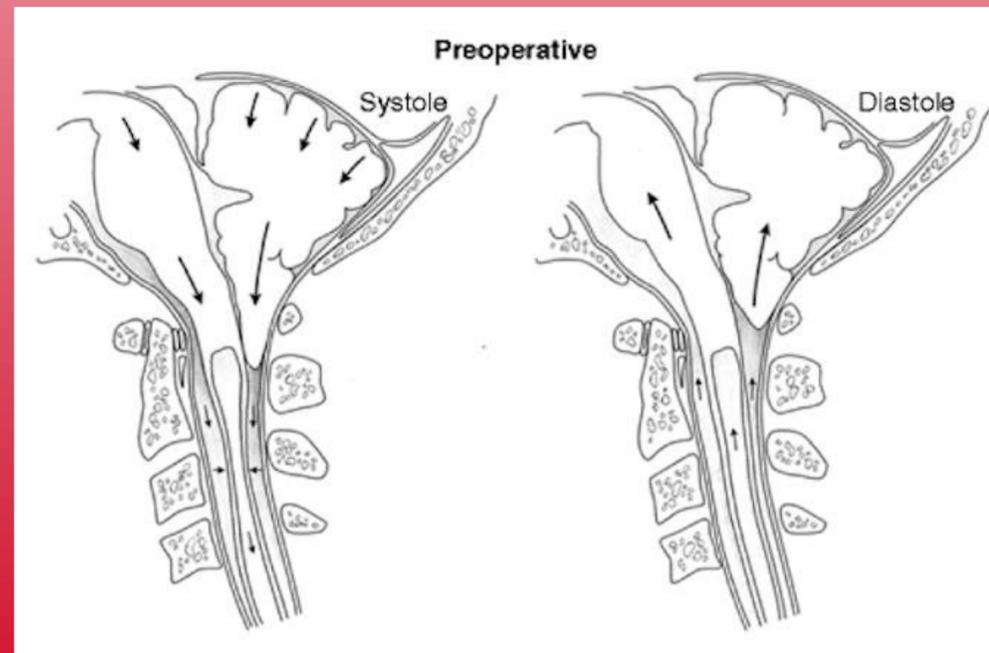


Figure 2.⁵

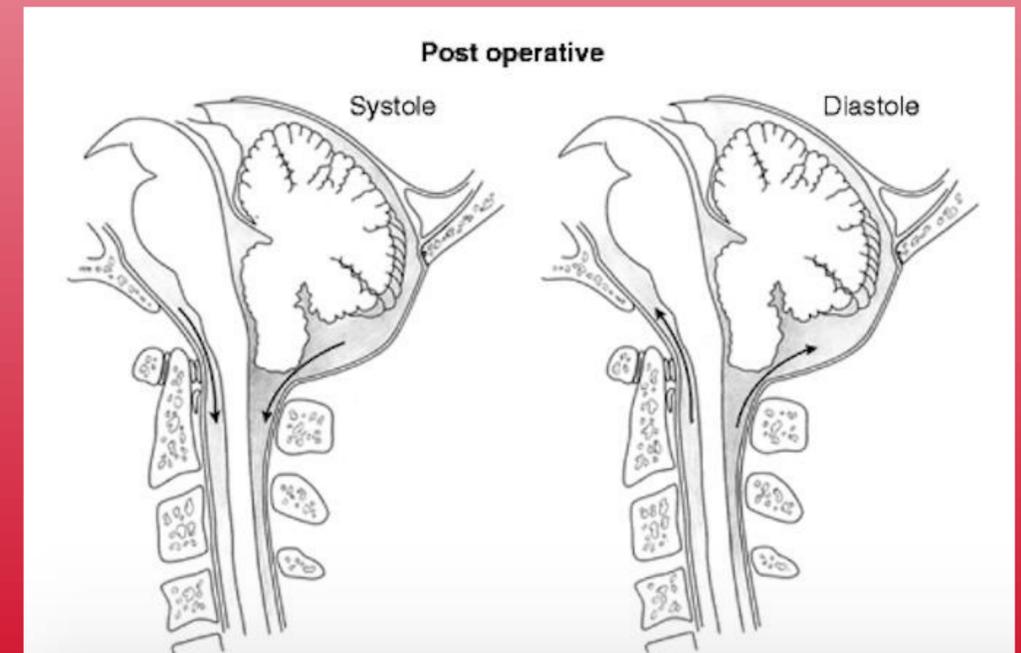


Figure 3.⁵

References

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