

Looking For Chiari Clues Prenatally

In an interesting study from Italy, researchers looked for clues as to how Chiari develops by going all the way back to prenatal imaging. Specifically, the group reviewed the imaging records of 4 major hospitals which combined had 7000 prenatal MRIs. From these, they identified 925 cases where post-natal MR imaging also existed. Out of the post-natal group, they found 7 cases where the cerebellar tonsils were herniated, although it should be noted that these cases were not necessarily symptomatic.

For the seven cases with tonsillar herniation, the researchers then analyzed their prenatal images. They looked at morphometric measures, such as posterior fossa area/volume, clivus length, and several bony angles, that are often altered in Chiari patients. They compared the measurements of the seven with a control group they created from those who didn't have tonsillar herniation as infants. The average prenatal imaging age was 24 weeks and the average postnatal imaging age 15 months.

While they did find several significant differences between the two prenatal groups, perhaps most interestingly none of the 7 cases showed tonsillar herniation before birth. This means that the herniations developed during infancy. It is also interesting to note that in comparing the infants with tonsillar herniation to a control group, clivus length was the only significant measurement that was different.

It is impossible to draw any conclusions from such a small sample, but it would be fascinating to follow up with the seven cases identified to see how their anatomy evolves over time and see if they ever develop Chiari type symptoms.

Source: Onset of Chiari type 1 malformation: insights from a small series of intrauterine MR imaging cases.

Palumbo G, Arrigoni F, Peruzzo D, Parazzini C, D'Errico I, Agazzi GM, Pinelli L, Triulzi F, Righini A. *Neuroradiology*. 2023 Jun 17. doi: 10.1007/s00234-023-03183-0. Online ahead of print. PMID: 37329352

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