TÍTULO: THE NATURAL HISTORY OF ASYMPTOMATIC CHIARI MALFORMATION TYPE 1 AND 1.5 IN CHILDREN

INTRODUCCIÓN/OBJETIVOS: By definition, a Chiari malformation type 1 is an ectopia of the cerebellar tonsils at least 5mm below the foramen magnum; when it also comprises the obex of the fourth ventricle, its named Chiari 1.5. The natural history of these malformations in a pediatric age, when asymptomatic, is undefined.

MATERIAL Y MÉTODOS: We have reviewed the medical files of the last 2 years of the pediatric neurosurgery outpatient clinic and identified the non-surgical Chiari malformations. Patients under 18 years-old, with a diagnosis of Chiari malformation type 1 or 1.5, unoperated, and with a minimal follow up of 2 years were included for analysis.

RESULTADOS: 15 patients were analyzed, aged from 1 to 10 years old (average of 5.3 years on diagnosis). 2/3 were female. All were asymptomatic and remained so during follow up. The indications to perform the diagnostic imaging were: traumatic brain injury (n=2), global developmental delay (n=2), cerebral palsy (n=1), early puberty (n=1), short stature (n=2), ocular ptosis (n=1), sleep apnea (n=1), epilepsy (n=1), headaches (n=3) and refractory hiccups (n=1). On average, every child performed 3.2 MRIs of the cranio-vertebral junction during the follow up period. The initial tonsillar descent averaged 12.5mm (7.9-18.7mm). Six malformations were classified as Chiari 1.5 and 9 as Chiari type 1. One patient had cervical syringomyelia. The median clinical-radiological follow up was 5.2 years. In 7 patients, including 4 with Chiari 1.5, the cerebellar tonsils significantly ascended over time (3.5-10.1mm); in 1 child they got worse. The tonsils' ascension matched a change in height percentile in 4 out of 7 patients. The syringomyelia cavity reduced in size over time.

CONCLUSIONES: In this case series, the natural history of asymptomatic Chiari 1 and 1.5 malformation in a pediatric setting was benign with no symptoms neither syringomyelia development and with significant tonsils ascension over time in 47% of children.