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A case of suspected prenatal Joubert syndrome

García Velert MB, Prieto Huecas L, Piera Jordán CA, Tordera Terrades C, Signes Pons C, Soler Pascual MJ, Mínguez Plasencia J, Clemente Pérez P
Marina Salud, Dénia (Alicante), Spain

Objective

Joubert syndrome is a congenital disorder caused by an alteration in the proteins of the primary cilia, affecting the central nervous system and other organs such as kidneys, retina, liver, among others. More than 30 genes have been identified and its prevalence is estimated at 1 in 80,000-100,000 live newborns. In most cases it is inherited autosomal recessive, and less frequently X-linked recessive. This disease causes a neurodevelopmental disorder, in addition to others depending on the mutation involved. Its diagnosis is suspected by clinical manifestations (hypotonia, abnormal neonatal respiratory pattern, delayed psychomotor development and ocular apraxia), although there may also be retinal dystrophy, ocular colobomas, renal disease, occipital encephalocele, hepatic fibrosis, polydactyly, oral hamartomas and endocrine abnormalities. Magnetic resonance imaging (MRI) plays a fundamental role in its diagnosis, especially because of the frequent presence of the "molar sign" corresponding to elongated and prominent superior cerebellar peduncles. It is now understood as a multiorgan disorder and, therefore, it is described as a spectrum of Joubert's syndrome.

Methods

A three-time pregnant (G3 P2) carrier of heterozygous 2q13 deletion, consanguinity between parents and with an affected son in homozygosis NPHP1-2q13 with oculomotor apraxia, Cogan syndrome and juvenile nephronophthisis. The patient refused at all times the performance of an invasive diagnostic technique (genetic amniocentesis). In the second trimester ultrasound a slight hypoplasia of the cerebellar vermis and a communication of the IV ventricle with the cisterna magna were detected. To complete the study, a neurosonography was performed in week 21, with a diagnosis of megacysterna magna. In week 31, due to the persistent suspicion of cerebellar vermis hypoplasia, fetal MRI was requested, which described cerebellar vermis hypoplasia, thickening of the superior cerebellar peduncles and an elevation of the fastigial point ("molar sign"), concluding that it was a mesencephalic and vermian anomaly concordant with the alterations associated with Joubert's syndromes and those related to it.

Results

Obstetric controls were performed every 4 weeks until term, with adequate fetal growth despite the described alterations. The patient was admitted in week 40^{+1} due to active labor phase. Gestation finished by vaginal delivery with a grade I tear. The baby was born with an APGAR score of 9/10/10 and a weight of 3800g, with no motor alterations observed in the immediate postpartum period. Genetic study confirmed homozygous 2q13 deletion. At 4 months of age she developed oculomotor apraxia with lateralization of gaze and axial hypotonia.

Conclusion

Genetic counseling should be performed due to the probability of recurrence as it is a hereditary disease. It is advisable, in cases with a history of affected children, to perform invasive diagnostic techniques (amniocentesis, chorionic villus biopsy) for the detection of chromosomal and/or genetic alterations in the fetus in order to be able to inform about the prognosis and subsequent controls.