P-45

Interaction of Fetal Cardiology and Molecular Biology : About three cases of GATA4 deletion in fetuses with conotruncal malformations.

Guimiot F.(3), Aboura A. (2), Delezoide A.- L. (3), Chitrit Y.(4),Azancot A.(1),
(1) Fetal and Perinatal cardiology Unit, Robert Debré hospital, Paris, France
(2) Cytogenetic Laboratory, Robert Debré hospital, Paris, France
(3) Developmental Biology Department, Robert Debré hospital, Paris, France
(4) Obstetric and Gynecology Department, Robert Debré hospital, Paris, France

We report three prenatally diagnosed cases of GATA4 deletion associated with conotruncal cardiac malformations. The first case is a fetus 20 weeks of gestation (Wks) with a complete and balanced atrioventricular canal. The second and third cases are fetuses aged 23 and 26 Wks with respectively a regular form of Tetralogy of Fallot (TOF) and a Truncus
arteriosus type I. Classical and molecular cytogenetics studies on amniotic cells showed an interstial deletion of the 8p23.1 region (RP11-235I5 to RP11-589N15) encompassing the GATA4 gene locus, without modification of the telomeric region in the first two cases. The third case had been diagnosed in 1998, when molecular cytogenetic was not sufficiently developed to characterize the chromosomic rearrangement. Moreover, parents had refused further genetic studies. Conventional cytogenetic had, however found an inv dup del 8p with a GATA4 deletion. The first case was due to maternal transmission. The mother had the same deletion and she underwent surgery in childhood for a conotruncal malformation (interrupted aortic arch and malaligned ventricular septal defect) with good result. However, at 6 years of age, she presented severe mental retardation. Noboby in the familly had the deletion. In the second case the parents decided to terminate pregnancy and the diagnosis of Truncus arteriosus I was confirmed at autopsy. The third case TOF was repaired with no sequelae but the girl is very severely retarded. The chromosomic rearrangements in the second and third cases were de novo. The relevance of our cases, to our best knowledge, is the association between GATA4 deletion and conotruncal cardiac
malformations, which is not been described in this pathology. Furthermore, we report the first case of maternal transmission (usually de novo or more rarely paternal transmission) of GATA4 deletion.We conclude that a multicenter study may be contributive to evaluate the prevalence of GATA4 deletion in conotruncal malformations diagnosed prenatally and therefore decide to perform or not on a routine basis the search for this deletion jointly with the deletion of 22.q11.1.