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Case report

Intrauterine growth retardation, duodenal and extrahepatic biliary atresia, hypoplastic pancreas and other intestinal anomalies: Further evidence of the Martínez-Frías syndrome

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Abstract

We describe a patient born to consanguineous parents, who presented with an MCA pattern characterized by low birth weight, duodenal atresia, extrahepatic biliary atresia, hypoplastic pancreas and intestinal malrotation. The infant died 60 days after birth. Chromosomes at 550–600 band levels were normal for a female (46,XX). This patient confirmed the autosomal recessive disorder previously described by our group. The pathogenesis of this syndrome is most probably of blastogenetic origin mainly affecting midline developmental duodenal biliary pancreatic junction.

Keywords: Duodenal atresia; Extrahepatic biliary atresia; Hypoplastic pancreas; Intestinal malrotation

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1. Introduction

In 1992, our group [1] described two sibs with a lethal multiple congenital anomalies (MCA) pattern, from a consanguineous gypsy couple. The clinical pattern included low birth weight, tracheoesophageal fistula (TEF), duodenal atresia, extrahepatic biliary atresia, hypoplastic pancreas and hypospadias. In the same study, three more cases identified through a computerized search in the ECEMC (Spanish Collaborative Study of Congenital Malformations) database were described, and we considered that they could have a milder expression of the same MCA pattern. The authors postulated it to be a new autosomal recessive syndrome, affecting the midline.

Following the publication of Martínez-Frías et al. [1], three Letters to the Editor [2–4] presented cases with a similar combination of anomalies, supporting the previous suggestion that this condition is a new distinct syndrome.

Here we present a new case of a patient with the same constellation of congenital defects. The patient belongs to the Spanish gypsy population, and thus a high risk for this syndrome among members of this ethnic group is suggested. Additionally, we review the existing evidence in order to better delineate the Martínez-Frías syndrome.

2. Clinical report

The propositus, a female, was the product of the first pregnancy of a healthy and consanguineous gypsy couple. At the time of delivery the mother was 19 years old and the father 25 years old. The pregnancy was uneventful but, in the ultrasound study performed at 22 weeks of gestation, a double-bubble indicating the existence of duodenal atresia, polyhydramnios, and growth retardation were detected. The child was born at 38 weeks of gestation by cesarean section because of the polyhydramnios. Her weight was 1470 g (50th centile for 31 weeks of gestation), birth length, 44.0 cm (50th centile for 32 weeks of gestation), and OFC, 31.2 cm (50th centile for 33 weeks of gestation). A few hours after birth, she showed severe hyperglycemia which persisted even after treatment with insulin, and acholia after starting oral feeding. She also showed hyperbilirubinemia (15 mg/dl total bilirubin) and elevated gamma-glutamyltranspeptidase (430 IU/l). On the second day of life, a laparotomy study confirmed a type C duodenal atresia, hypoplastic pancreas and intestinal malrotation identified by digestive transit exploration. Gallbladder and extrahepatic biliary ducts were not observed. Technetium scintigraphy confirmed the absence of extrahepatic biliary ducts. Duodenostomy and malrotation correction were performed. A liver biopsy showed advanced cholestasis. Chromosome study with 550–600 band resolution level was normal (46,XX). The infant's evolution became progressively worse and she died at 60 days. An autopsy was not performed because the parents did not permit it.

3. Discussion

As far as we know, reports of only five families, including the one presented here, have been published out of a total of eight individuals whose clinical pattern is compatible with the diagnosis of Martínez-Frías syndrome [1–4]. In our original study [1], three more patients were identified through a computerized search of the ECEMC database, and the authors suggested that they could have a milder expression of the same MCA pattern.