A Case of Congenital Generalized Lipodystrophy Type 2 with Novel BSCL2 Gene Mutation

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Congenital generalized lipodystrophy (CGL) is a rare autosomal recessive disorder characterized by generalized absence of adipose tissue, extreme insulin resistance, hypertriglyceridemia, hepatomegaly, hepatic steatosis, and early onset of diabetes. Herein, we described a case with CGL2 due to novel homozygous BSCL2 gene mutation.

Three years-seven months old girl presented with a general lack of subcutaneous fat, prominent muscular hypertrophy, hollow cheeks, triangular face, acanthosis nigricans in fold areas, especially in the neck-bilateral axilla, hypertrichosis in arms-legs, abdominal swelling due to hepatomegaly, which are characteristic physical findings of CGL. Her parents were first-degree cousins.

In laboratory: Glucose 75 mg/dL (70-105), C-peptide 6.8 ng/mL (0.9-4.3), insulin 47.4 µIU/mL (1.9-23), total cholesterol 132 mg/dL (<200), and triglyceride 134 mg/dL (<200). Hypertriglyceridemia was firstly detected at 5 years of age with metformin therapy. Despite taking metformin treatment, the patient’s insulin levels increased steadily, and serum AST levels were also elevated. At the age of nine, grade 2 hepatic steatosis was detected by ultrasonography.

During follow-up, her HbA1c level has increased to 6.5% at the age of eleven years and three months. The fasting and 2-hour post-OGTT glucose-insulin levels of the patient were 158.3 µIU/mL and 209 mg/dL-95.8 µIU/mL, respectively. Insulin detemir was started in addition to metformin treatment because of old 1-month old. Karyotype analysis results were 46,XY and SRY(+). The female case with 46,XX has been diagnosed with CGL due to salt-wasting crises and ambiguous genitalia in the newborn period. Results of CGL strip assays were c.89C>T (P30L) (N/M), c.329-336del (del8bp E3) (N/M), c.290-13A>C (I2Splice) (M/M) in both cases. In MLPA analysis, heterozygous increase in CYP21A1P-1 (-113 SNP) and CYP21A1P-3 (del8nt) mutation regions, heterozygous loss in CYP21A2-1wt (-113 SNP) and CYP21A2-3 wt (del8nt) regions, and homozygous mutations in CYP21A2-3 wt (I2G-C), CYP21A2-3 wt (I2G-A) regions were detected. It was thought that the cases have received an allele with heterozygous mutation in c.290-13A>C > G (I2 Splice) region from one parent and a gene converted allele from the other. Mutation analysis was planned for parents.

The cases were presented here in order to emphasize the importance of MLPA analysis when diagnosing CGL.

Heterozygous p.D61G Mutation in a Patient with Noonan Syndrome

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Noonan syndrome is an autosomal dominant disease resulting from mutations in the ras-associated mitogen activating protein kinase pathway involved in signal transduction associated with cell proliferation, differentiation, life, and metabolism.

A girl from non-consanguineous family was referred to pediatric endocrine department because of short stature. The 15-year-old girl was born with weight 2300 g by caesarean section and was followed due to pulmonary valve stenosis and mitral insufficiency in the pediatric cardiology department; she underwent cardiac surgery during the infant period. On physical examination height was 131.6 cm (<15 p), height SDS -4.73, weight 28.7 kg (<3 p), weight SDS -5.31, target height -150.65, and target height SDS was 1.95. Physical examination also revealed dysmorphic facial appearance with webbed neck, hypertelorism, epicanthus,