

Interesting case report ECARUCA (2016-10)

2p21 Deletions in hypotonia-cystinuria syndrome

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Abstract:

The significant role of the SLC3A1 gene in the aetiology of cystinuria is meanwhile well established and more than 130 point mutations have been reported. With the reports on genomic deletions including at least both SLC3A1 and the neighboured PREPL gene the spectrum of cystinuria mutations and of clinical symptoms could recently be enlarged: patients homozygous for these deletions suffer from a general neonatal hypotonia and growth retardation in addition to cystinuria. The hypotonia in these hypotoniacystinuria (HCS) patients has been attributed to the total loss of the PREPL protein. Here we report on the clinical course and molecular findings in a HCS patient compound heterozygote for a new deletion in 2p21 and a previously reported deletion, both identified by molecular karyotyping. The diagnostic workup in this patient illustrates the need for a careful clinical examination in context with powerful molecular genetic tools in patients with unusual phenotypes. The identification of unique genomic alterations and their interpretation serves as a prerequisite for the individual counselling of patients and their families. In diagnostic strategies to identify the molecular basis of both cystinuria and hypotonia 2p21 deletions should be considered as the molecular basis of the phenotype.

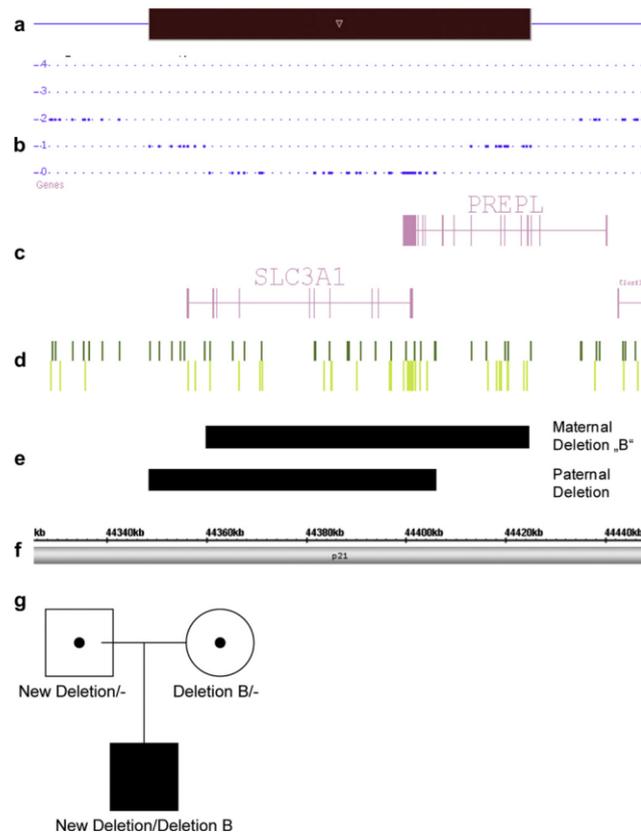


Fig. 1. Local GenomeWideSNP_6 array signal distribution pattern and segmentation result in our patient with two different 2p21 deletions. a) Schematic presentation of the copy number segments. b) Illustration of the copy number state. c) Affected genes and their genomic structures. d) Distribution of markers of the SNP_6 Array. e) Illustration of the two deletion alleles in our patient. f) Physical position and chromosomal band at 2p21. g) Pedigree of the family.



Fig. 2. Phenotype of the patient at the age of 3.5 years. Note the pale skin and the long face with mild bitemporal narrowing and frontal bossing.