A Novel Heterozygous Pathogenic Variant in PORCN Gene Causing Focal Dermal Hypoplasia with Short Stature: Case Report and Literature Review

Di Wu[1], Xuyun Hu[1], Xiaoqiao Li[1], Liya Wei[1], Chang Su[1], Jiajia Chen[1], Miao Qin[1], Chunxiu Gong[1]*, Yiping Shen[2,3,4]*

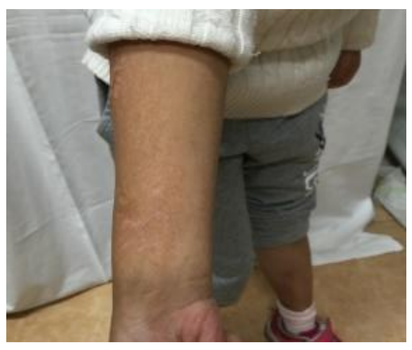
[1]Department of Endocrinology, Genetics and Metablism, Beijing Children's Hospital, Capital Medical University, National Center for Children's Health, Beijing, China, 100045

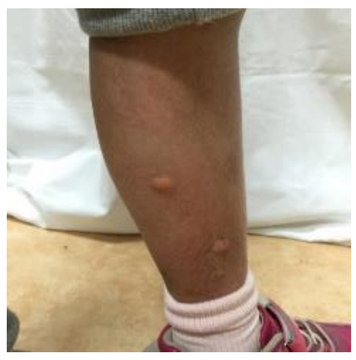
[2]Genetic and Metabolic Center Laboratory, Maternal and Child Health Hospital of Guanxi Zhuang Autonomous Region, Nanning, Guangxi, China

[3]Shanghai Children's Medical Center, Shanghai Jiao Tong University School of Medicine, Shanghai, China

[4]Division of Genetics and Genomics, Boston Children's Hospital, Harvard Medical School, Boston, MA, United States

Objective To explore the clinical features and the genetic cause of a multiple malformation patient with short stature. **Methods** The clinical data was collected in Beijing Children's Hospital in November 2017. The disease-causing variant was identified using exome sequencing and confirmed with Sanger sequencing. Related literature was searched from Wanfang and Pubmed databases using the key word of "PORCN gene" to identify the clinical features and gene mutation. **Results** The patient is a 10-year-old girl, she was referred to hospital because of short stature. She presented multiple deformities such as patchy skin hypoplasia, syndactyly and right ear malformation. In exon 2 of *PORCN* gene, genetic sequencing revealed a de novo heterozygous variant c.49_80delTGTCTCCTGCCTACTGCCCAGCAGGGCCTTGA (p.C17fs*84). The variant is novel and classified as pathogenic. The patient was diagnosed with focal dermal hypoplasia (FDH). **Conclusion** FDH is a multi-system affected birth defect. In addition to typical skin damage and bone malformation, it can also cause short stature.





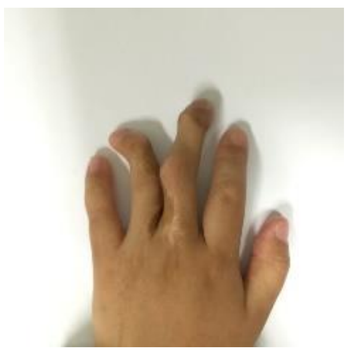


Figure 1 Right ear malformation

Figure 2 Blaschko linear pigmentation and depigmentation along the arms

Figure 3 Fat hernia of leg

Figure 4 Left middle finger and ring finger syndactyly after operation