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Compound Heterozygous Mutations in the *SRD5A2* Gene Exon 4 in a Male Pseudohermaphrodite Patient of Chinese Origin

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The goal of this study was to perform 5-α-reductase type 2 gene (SRD5A2) analysis in a male pseudohermaphrodite (MPH) patient with normal testosterone (T) production and normal androgen receptor (AR) gene coding sequences. A patient of Chinese origin with ambiguous genitalia at 14 months, a 46,XY karyotype, and normal T secretion under human chorionic gonadotropin (hCG) stimulation underwent a gonadectomy at 20 months. Exons 1–8 of the AR gene and exons 1–5 of the SRD5A2 gene were sequenced from peripheral blood DNA. AR gene coding sequences were normal. SRD5A2 gene analysis revealed 2 consecutive mutations in exon 4, each located in a different allele: 1) a T nucleotide deletion, which predicts a frameshift mutation from codon 219, and 2) a missense mutation at codon 227, where the substitution of guanine (CGA) by adenine (CAA) predicts a glutamine replacement of arginine (R227Q). Testes located in the inguinal canal showed a normal morphology for age. The patient was a compound heterozygote for SRD5A2 mutations, carrying 2 mutations in exon 4. The patient showed an R227Q mutation that has been described in an Asian population and MPH patients, along with a novel frameshift mutation, Tdel219. Testis morphology showed that, during early infancy, the 5-α-reductase enzyme deficiency may not have affected interstitial or tubular development.

Key words: 5-α-Reductase enzyme deficiency, 5-α-reductase type 2 gene mutations, male pseudohermaphroditism