A Further Case of Hajdu-Cheney Syndrome Having a Novel Mutation in the *NOTCH2* Gene

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Hajdu-Cheney syndrome (HCS) is a very rare, autosomal dominant syndrome characterized by acroosteolysis of distal phalanges, generalized osteoporosis often leading to multiple fractures, craniofacial and dental abnormalities, and proportionate short stature. It was first described by Hajdu and Kauntze (1948) and Cheney (1965). In 2011, several groups identified mutations in the *NOTCH2* gene, located on chromosome 1 which was responsible for HCS. Most cases of HCS are sporadic, but rare familial forms with autosomal dominant mode of inheritance have been described. We describe here a 35-year-old male patient who had a novel mutation in exon 34 of the *NOTCH2* gene. The patient exhibited typical facial features including hypertelorism, bushy eyebrows, long philtrum, micrognatia, dental anomalies, low-set ears, full cheeks, short neck, and short fingers. X-ray studies showed Wormian bones in the skull, acro-osteolysis of distal phalanges, and short, bowed long bones. On echocardiography, minimal mitral and aortic regurgitation were observed. Odiological examination revealed a conductive hearing loss. Regarding clinical findings, he was considered to have Hajdu-Cheney syndrome. Molecular analysis showed a heterozygous truncating c.6616 G>T (p.E2206X) mutation in the last exon of the *NOTCH2* gene. This Hajdu-Cheney case with a novel mutation is the first case whose molecular diagnosis was performed in Turkey and may help to establish phenotype-genotype correlation in the syndrome.

Key words: Hajdu-Cheney, NOTCH2, acroosteolysis

Prevalence and Molecular Characteristics of Y Chromosome Microdeletions in Infertile Males: A Single-Center Study

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In a number of infertile males, small deletions of specific genes located at Y chromosome are associated with spermatogenic failure. The aim of this study was to analyze the prevalence and clinicopathologic findings in patients with Y microdeletions. We retrospectively evaluated the records of 1069 Turkish infertile males referred to our molecular laboratory for Y microdeletion analysis between the period of 2010 and 2014. Polymerase chain reaction assay was used to detect Y chromosome microdeletions including SRY, sY95, AZFa, AZFb, and AZFc. Y chromosome microdeletions were found in 47 (4%) of the 1069 primary infertile males. Among 47 males with Y microdeletions, AZFc region microdeletions were found in 24 (51%), both AZFb and AZFc regions microdeletions in 7 (14.8%), sY95 microdeletion in 2 (4%), AZFb microdeletion in 1 (1%), and sY95, AZFa, AZFb and AZFc microdeletions in 1 (1%). The contribution of Y microdeletions to male infertility has been reported to be about 10%. The prevalence of Y chromosome microdeletions was found to be lower in our study. It has been considered that this may be due to the respectively higher contribution of autosomal recessive conditions to male infertility in our population which has higher frequency of consanguineous marriages. Similar to the previous studies, the AZFc region was the most frequently involved region in microdeletion process in this study. Knowing the involved region/regions in men with Y microdeletions is essential for genetic counseling and it helps decision-making for assisted reproductive techniques.

Key words: Y microdeletion, primary infertility