Clinical and Histologic Findings in ACTA1-Related Nemaline Myopathy: Case Series and Review of the Literature.

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Abstract

BACKGROUND: Nemaline myopathy is a rare congenital disease of skeletal muscle characterized by muscle weakness and hypotonia, as well as the diagnostic presence of nemaline rods in skeletal muscle fibers. Nemaline myopathy is genetically and phenotypically heterogeneous and, so far, mutations in 11 different genes have been associated with this disease. Dominant mutations in ACTA1 are the second most frequent genetic cause of nemaline myopathy and can lead to a variety of clinical and histologic phenotypes.

PATIENTS AND METHODS: We present a series of ACTA1-related cases from a Brazilian cohort of 23 patients with nemaline myopathy, diagnosed after Sanger sequencing the entire coding region of ACTA1, and review the literature on ACTA1-related nemaline myopathy.

RESULTS: The study confirmed ACTA1 mutations in four patients, including one with intranuclear rods, one with large intracytoplasmic aggregates, and two with nemaline intracytoplasmic rods. A repeat muscle biopsy in one patient did not show histological progression.

CONCLUSION: Despite the recognized phenotypic variability in ACTA1-related nemaline myopathy, clinical and histological presentations appear to correlate with the position of the mutation, which confirms emerging genotype/phenotype correlations and better predict the prognosis of affected patients.

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KEYWORDS: ACTA1; Nemaline myopathy; congenital myopathy; muscle biopsy


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