Exploring the Association between Legg-Calvé-Perthes Disease and Attention Deficit Hyperactivity Disorder in Children.

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Abstract

BACKGROUND:
Legg-Calvé-Perthes disease (LCPD) is an idiopathic hip osteonecrosis prevalent in children < age 15 years. The etiology remains incompletely understood, partly because of multiple potential environmental risk factors and partly because of lack of genetic markers. It has been hypothesized that hyperactivity may induce mechanical stress and/or vascular damage at a fragile joint.

OBJECTIVES:
To assess children with LCPD for markers of attention deficit hyperactivity disorder (ADHD) relative to their unaffected comparably aged siblings to exclude the contribution of hyperactive behavior versus environmental and/or genetic factors in LCPD.

METHODS:
All children followed in the Pediatric Orthopedic Clinic, and their comparably aged siblings were recruited. ADHD was assessed using the TOVA computerized test and DSM-IV criteria. Quality of life and sleep disorders as ancillary tests were assessed using the Child Health Questionnaire (Parent Form 50), Pediatric Outcomes Data Collection Instrument, and Pediatric Daytime Sleepiness Scale.

RESULTS:
Sixteen children with LCPD (age 9.1 ± 3.3, 75% males) were compared with their closest-aged siblings (age 9.3 ± 2.6, 30% males). Mean TOVA scores of children with LCPD (-3.79 ± 2.6) and of their non-LCPD siblings (-3.6 ± 4.04) were lower relative to the general population (0 ± 1.8, P < 0.0001). Both group means were in the ADHD range (≤ -1.8) implying that 73% of this LCPD cohort and 53% of their non-LCPD siblings performed in the ADHD range, relative to 3.6% incidence expected in the general population (P < 0.0001). Other test results were similar in both groups.

CONCLUSIONS:
Our findings in a small cohort of children with LCPD and their comparably aged siblings do not support an association between LCPD and ADHD. ADHD markers were equally high in the LCPD children and siblings.