

Attention Deficit Hyperactivity Disorder in Pediatric Patients with Pheochromocytoma and Paraganglioma.

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Abstract

The aim of the study is to evaluate if there is an association between attention deficit hyperactivity disorder (ADHD) and the diagnosis of pheochromocytoma/paraganglioma (PHEO/PGL) in pediatric patients. A case series study of 43 patients under the age of 18 with PHEO/PGL tumors who were evaluated at the National Institute of Health between January 2006 and May 2014 is reported. Prior diagnosis of ADHD and treatment course with stimulant medications was recorded. Patient symptoms, catecholamine and metanephrine levels, tumor characteristics, and genetic analyses for syndromes associated with PHEO/PGL were evaluated. A chi-squared test was used to assess the prevalence of ADHD in the PHEO/PGL patients compared to the general population. Nine out of 43 (21%) of patients diagnosed with PHEO/PGL had been diagnosed with ADHD prior to tumor identification. Four of the 9 patients had been treated with amphetamine, dextroamphetamine, and/or methylphenidate, potentially exacerbating an adrenergic crisis. In addition, 4 patients exhibited hypertension at the initial diagnosis of their PHEO/PGL. Three patients had resolution of their ADHD symptoms after successful surgical removal of PHEO/PGL. Our study found a prevalence of ADHD in 21% of our PHEO/PGL patients, significantly higher than 7.2% seen in the general pediatric population. Symptoms of anxiety and difficulty in concentration in these patients may have been related to their underlying PHEO/PGL and were not recognized as part of the constellation of symptoms in a child with PHEO/PGL. In pediatric patients with hypertension and ADHD symptomatology, an evaluation to rule out PHEO/PGL is warranted prior to treatment with stimulant medications.