Decreased Height Velocity in Children and Adolescent Boys Before the Diagnosis of Crohn's Disease

To assess the prodromal growth patterns of Crohn's disease patients, sequential growth data and height and weight velocities were studied in 50 white children and prepubescent adolescents (31 boys, 19 girls) with Crohn's disease. Height and weight velocities of the patients were compared by calculating the SD score (*z* score). Inclusion criteria were at least four separate height recordings between the age of 4 years and the onset of symptoms attributable to Crohn's disease, premorbid height ≥ fifth percentile, Tanner stage no greater than II, and absence of other chronic medical conditions. A decrease in height velocity was defined as a sustained decline of 25% from the premorbid height velocity or to the third percentile for height velocity.

Three distinct patterns of linear growth emerged in this patient population. Forty-six percent (23 patients) had a decrease in height velocity between 4 and 72 months (median, 12 months) before the onset of symptoms attributable to Crohn's disease. Forty-two percent (21 patients) had a decrease in height velocity after symptoms had developed but before Crohn's disease had been diagnosed. Twelve percent (six patients) sustained a normal height velocity until Crohn's disease was diagnosed. There were no differences in the site of gastrointestinal involvement and symptoms between the patients who showed a decrease in height velocity and those who did not. Although the majority of patients with growth failure demonstrated poor weight gain, a subset (22%) had decreased linear growth while maintaining a normal weight velocity. Of the six patients with normal linear growth, five continued to maintain normal weight gain.

Kanof ME, Lake AM, Bayless TM. *Gastroenterology* 1988;95: 1523-1527.

Editor's comment—*This interesting study reports on the pattern of growth of patients with Crohn's disease before presentation of symptoms and diagnosis. It illustrates a pattern of nutritional dwarfing in which cessation of body weight progression usually precedes height deceleration. It also shows that a body weight/height deficit is not always present in patients with Crohn's disease. Nutritional dwarfing has been reported in patients who are overweight for their height; the best example, studied by Dietz and Hartung (*Am J Dis Child *1985;139:704-708), is obese children given hypocaloric diets who fail to grow in height. Trowbridge and co-workers reported that this occurs in other malnourished populations as well (*Am J Clin Nutr *1987;46:411-418). My colleagues and I have observed similar patterns of growth in children with atypical eating disorders leading to nutritional dwarfing who have no body weight/height deficits, but show a lack of weight progression (*Semin Adolesc Med *1987;3:255-266). Nutritional alterations other than caloric or protein deficits may account for nutritional dwarfing without deceleration in weight velocity. For example, low blood zinc levels might precede both the onset of the symptoms and the diagnosis of inflammatory bowel disease (Lifshitz F, Nishi Y. In: Anast C, DeLuca H [eds]:* Pediatric Diseases Related to Calcium. *Elsevier, 1980). Unfortunately, this study did not address the possible etiopathogenesis of the different growth patterns among these patients.*

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