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50 Years Ago in *THE JOURNAL OF PEDIATRICS*

50 Years of Growth in the Assessment of Short Stature

Root AW, Bongiovanni AM, Eberlein WR. Diagnosis and management of growth retardation with special reference to the problem of hypopituitarism. J Pediatr 1971;78:737-53.

Concerns about growth and stature are common indications for referral to pediatric endocrinology. Root et al reviewed the evaluation of short stature, and many aspects of the growth evaluation hold true today. As was described 50 years ago, the assessment of growth aberrations requires accurate plotting of growth data to identify downward trends in growth percentiles. A thorough history and physical examination, and a bone age radiograph, also remain key aspects of the growth evaluation.

The authors described classic growth patterns, including genetic forms of short stature, such as familial short stature, constitutional delay of growth and development, and slow growth with delayed bone age, with or without deviation away from the growth curve, in children with chronic disease. They also described initial laboratory studies to identify causes of slowed growth and provided details about growth hormone (GH) stimulation testing. The gold standard for GH stimulation remains insulin-induced hypoglycemia; however, given the risks of severe hypoglycemia and the availability of alternative provocative agents, it is used less frequently than in the past. Once GH insufficiency is identified, screening for additional pituitary hormone deficiencies is necessary. An addition to the workup for GH insufficiency is MRI of the brain to identify anatomic causes.

The most significant development in treatment of short stature has been the pharmaceutical production of recombinant human GH, which began in 1985. Use of cadaver-derived GH was halted in 1985 after identification of transmission of Creutzfeldt-Jakob disease in patients who received cadaveric GH.[1] The widespread availability of recombinant human GH, free of the risk of disease transmission, has expanded GH treatment to groups beyond those with hypopituitarism.

The diagnostic evaluation of short stature has expanded significantly over the past 50 years with extensive genetic studies to identify syndromic and nonsyndromic causes of short stature. Testing and treatments will continue to advance with a better understanding of the genetics of growth. However, as recognized in 1971, a thorough examination and an assessment of the growth chart remain cornerstones of the growth evaluation.

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