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Early puberty in boys with myelomeningocele. Risk factors for early puberty

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Background

Children with myelomeningocele (MMC) run an increased risk of developing early or precocious puberty (E/PP). In a previous study on girls with MMC we found increased intracranial pressure during the perinatal period to be strongly associated with E/PP. We also found the incidence of E/PP among girls to be as high as at least 52%. In a number of studies PP in boys also has been reported, but most studies have been based on selected groups of children. The aims of the present study was to investigate the incidence of E/PP in boys with MMC treated at a regional habilitation centre, and to identify possible risk factors associated with the development of early or precocious puberty. In addition we analyzed the clinical course of pubertal development.

Materials and methods

The study population comprised all boys born between 1970 and 1992 admitted to the Folke Bernadottehemmet at least at one occasion (n = 59). The medical records were examined and those who had reached 10.2 years (n = 47) were evaluated regarding pubertal status, growth charts, perinatal problems and medical problems and problems regarding other areas of function.

Results

Of the 47 boys who had reached the age of 10.2 years or above, 43 boys were possible to evaluate regarding onset of puberty. Nine of these boys had had an early puberty and one a precocious puberty. Thus the incidence of E/PP in this group is at least 21% (10/47). The boys with E/PP had significantly higher incidence of both increased intracranial pressure during the perinatal period and early and severe symptoms of brainstem dysfunction. In 18 boys, sufficient data for complete analysis of both growth spurt and Tanner stages were obtained. Analysis showed that in 14 boys out of 18 the growth spurt was the first sign of puberty.

Conclusion

We found an increased incidence of E/PP in the boys with MMC. Early puberty was significantly associated with high intracranial pressure during perinatal period. In addition, we found that pubertal development seemed to be accelerated in many boys with an early growth spurt.