Early orchiopexy: prepubertal intratubular germ cell neoplasia and fertility outcome

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OBJECTIVES: To investigate the prepubertal prevalence of intratubular germ cell neoplasia of the unclassified type (ITGCNU) and its significance as a predictor of testicular cancer and to evaluate the effect of early orchiopexy (at younger than 2 years of age) on subsequent fertility of patients with bilateral cryptorchidism. METHODS: Testicular biopsies (n = 660) from 440 prepubertal patients with cryptorchidism who underwent orchiopexy between January 1, 1970 and December 31, 1979 were evaluated for ITGCNU using placental-like alkaline phosphatase (PLAP) antibody. The clinical outcome in 15 patients with PLAP-positive germ cells was evaluated in 1997. In addition, the effect of age at surgery on the fertility of patients with bilateral cryptorchidism was assessed by clinical follow-up until 1997 and was correlated with the histologic data at orchiopexy. RESULTS: PLAP-positive germ cells morphologically identical with adult ITGCNU were found in the biopsies of 22 patients (5%). After more than two decades, none of the 15 patients with successful follow-up developed testicular cancer. The fertility outcome in the patients with bilateral cryptorchidism correlated with the number of spermatogonia at orchiopexy (P = 0.018), but correlated inversely with age at orchiopexy (P = 0.021). CONCLUSIONS: PLAP-positive germ cells in prepubertal testicular biopsy specimens are not necessarily precursors of testicular cancer after orchiopexy. In addition, our data support the idea that early orchiopexy may be beneficial in preventing infertility.