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JOURNAL ARTICLE

Fibroblast androgen receptors in patients with genitourinary anomalies

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The etiology of certain disorders of sexual differentiation is unclear. The authors have examined the hypothesis that hypospadias and other disorders compatible with a defect in androgen action, such as cryptorchidism, micropenis, chordee/penile torsion, and ectopic testis, might be explained by androgen receptor abnormalities. Therefore, 25 subjects were studied who were selected only because they had one of these developmental defects, together with a predominantly male phenotype, and no readily ascertainable explanation for the defect. Four of these subjects had mixed gonadal dysgenesis with multiple genito-urinary anomalies. They were included for comparative purposes, since there is no evidence for androgen resistance in this disorder. Patients with testicular regression syndrome (gross testosterone deficiency), impaired testosterone biosynthesis (relative testosterone deficiency), 5 alpha-reductase deficiency (altered T/DHT ratio), and a family history or endocrine profile suggestive of androgen resistance, were all excluded from evaluation. Androgen receptor content (RO) and binding affinity (Kd) were measured in 26 genital or pubic skin fibroblast strains cultured from 25 affected patients using a dispersed, whole cell assay at 22 C. There was no difference in the mean androgen receptor content (approximately 10,000 sites/cell) or binding affinity (approximately 1 nM) between the patients' fibroblasts and those from 26 fibroblast strains established from 26 normal males. Moreover, there were no differences in the nuclear uptake of [3H]dihydro-testosterone into dispersed, intact fibroblasts incubated at 37 C when 11 patient and seven normal male fibroblast strains were compared.(ABSTRACT TRUNCATED AT 250 WORDS)