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URETHRAL DYSFUNCTION IN MEN OPERATED FOR UNDESCENDED TESTIS OR DISTAL HYPOSPADIA. RESULTS OF THE PILOT STUDY

Aims of the study.

Male urogenital abnormalities reported in a variety of animal species following prenatal or neonatal exposure to diethylstilbestrol (DES) are qualitatively comparable to those reported in DES-exposed men (e.g. cryptorchidism, hypospadias and reduced serum testosterone concentration). Urethral dyssynergia has recently been added to the list of adverse effects observed in the rats and mice exposed developmentally to DES (Streng et al. unpublished data). This was seen as altered urethral EMG, increased bladder pressure and decreased flow rate. Little is known about the lower urinary tract symptoms of DES-exposed men but an increased risk of cryptorchidism has been associated with elevated maternal estrogen concentrations and decreased fetal androgen (Moller, 1999). This suggests that hormonal imbalance may also be involved in the etiopathogenesis of the human nontraumatic urethral dyssynergia. To test this hypothesis, men who had been operated for the maldescended testes or hypospadias in childhood were urodynamically characterized. Men undergone appendectomy or operation for correction of indirect inguinal hernia in childhood served as controls.

Methods:

The cases were gathered from the patient registers of two university hospitals. A questionnaire about urinary symptoms was sent to all men operated in childhood between years 1963-1973 for undescended testis or distal hypospadias and to as many men operated for appendicitis or indirect inguinal hernia. Men from hypospadias and control groups had higher symptom scores. Men with most symptoms from all groups were taken to clinical study. These men underwent following examinations: free uroflowmetry, voiding cystometry, ice water test, static urethral pressure measurement, transrectal ultrasound examination of the prostate and measurement of serum PSA, testosterone, 17 β -estradiol and LH. Static urethral pressure was measured using Brown-Wichman method. Infusion rate was 3ml/min and withdrawal rate 1.0mm/s. The measurement was repeated 3 times. The pressure area (dotted area in Fig.1) was analyzed with Analytical Imaging Station Ver 3.0 (Imaging research Inc, Ontario, Canada). The values are shown in pixels with standard area.

Results:

Results of the study were available in addition to 8 controls for 7 and 13 men operated for undescended testis and hypospadias, respectively. In the undescended testis, hypospadias and control groups the mean prostate volume was 18.6 (range 3.8-27.4), 18.6 (1.2-36.5) and 23.7 (15.8-29.3), the mean androgen/estrogen ratio 137 (44-267), 165 (70-270) and 217 (162), mean Q max 15.2 (26.3-10.3), 21.1 (41.6-7.3) and 27.7 (46.4-12.5) and the pressure area of the proximal prostatic urethra 0.160 (SD 0.1), 0.156 (SD 0.14) and 0.095 pixels (SD 0.6), respectively. There were more abnormal findings in voiding cystometry in undescended testis and hypospadias groups compared to control.

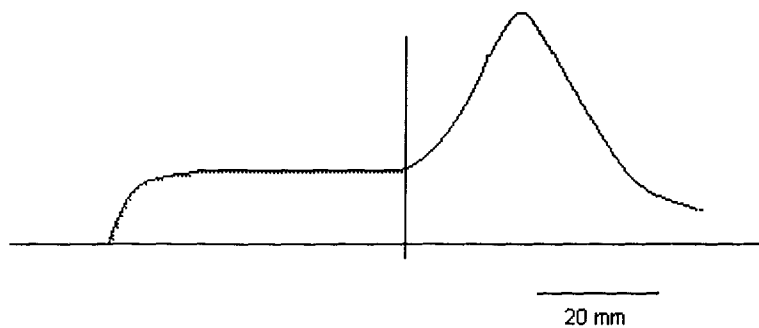
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Conclusion

There was a trend for increased of the pressure area of the proximal urethra in the undescended testis and hypospadias patients in comparison to controls suggesting dysfunction of the proximal urethra among these men. This is supported also by lower mean Qmax in these groups. Lower androgen/estrogen ratio associated with a smaller prostate volume in these groups suggested, further, that androgen/estrogen balance may have an impact on function of proximal urethra in men

Fig 1. Schematic illustration of male urethral pressure profile. The dotted area shows pressure area of the proximal urethra.



Reference

Moller H Epidemiology of cryptorchidism and hypospadias. Epidemiology vol. 10: 4, 1999.