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THE ROLE OF HOMEFLOWMETRY IN THE EVALUATION OF REFRACTORY ENURESIS

Aims of Study

This study describes our experience using homeflowmetry (HFM) in boys with refractory enuresis. Though uroflowmetry is the least invasive of all urodynamic methods to reveal voiding disorders such as small functional bladder capacity (FBC) and bladder outlet obstruction in the pediatric patients.[1-3] The small voided volumes at clinic, not infrequently encountered, may make interpretation of bladder outlet obstruction in uroflowmetry impossible. Recording frequency-volume chart for two weekends provided reliable data of FBC. However, there was a marked dropout rate (40%) of recording a 4-day frequency flow chart in women with motor urge incontinence.[4] We propose that recording uroflowmetry at home for one weekend may avoid the above drawbacks and provide multiple tracings for a reliable interpretation of uroflowmetry and a reasonable estimation of FBC.

Methods

Between 2000 and 2001, 34 boys (mean 8.4 years) with refractory enuresis were asked to perform HFM for one weekend. Boys with primary monosymptomatic nocturnal enuresis and polysymptomatic enuresis were classified as MNE (N=17) and PSE (N=17) groups, respectively. The largest voided volume is defined as FBC. Small FBC is arbitrarily defined as voided volume <50% expected bladder capacity, as calculated by formula: (Age in years + 2) X 30 ml. Normal and obstructive HFM are defined as a normal FBC associated with normal and obstructive curves, respectively. Videourodynamic studies were done in 6 and 9 children of MNE and PSE groups, respectively.

Results

For the same child, a bell-shape uroflowmetry at a small voided volume may demonstrate an obstructive pattern at a larger volume; and vice versa (Figure). FBC and % expected bladder capacity in MNE group was lesser than that of PSE group (115±66 ml and 39.6±23.4% vs. 168±64 ml and 55.6±15.6%, $p<0.01$). Small FBC was more frequently noted in MNE than PSE groups (70.6 % vs. 35.3 %, $p<0.01$). However, obstructive HFM was not infrequently encountered in both MNE and PSE groups (11.8% vs. 35.3 %, $p>0.1$). Videourodynamic studies disclosed bladder outlet obstruction and detrusor overactivity in 0 (0%) and 0 (0%); 4 (50 %) and 5 (62.5%); 5 (100%) and 1 (20%) patients with normal HFM, small FBC and obstructive HFM, respectively.

Conclusions

Homeflowmetry is a reliable tool in evaluating boys with refractory enuresis. In homeflowmetry, small FBC and obstructive HFM imply abnormal voiding function.

Reference:

1. Br. J. Urol., 1984,56: 474-477.
2. Eur. Urol. 1999, 35: 57-60.
3. Br. J. Urol., 1998, 81:1-16.
4. Urology, 2001, 58: 188-191