Detrusor Contraction Strength in Male Patients before and after Various Grades of Desobstruction

Introduction and Objective: A normal detrusor tends to compensate for the (slowly increasing) grade of bladder outlet obstruction (BOO) in male when BPH develops as is known from earlier publications. How the detrusor voiding contraction or contractility 'responds' to *des*obstruction has never been studied.
Materials and Methods: Urodynamic data of 148 symptomatic male patients that underwent desobstruction with contact laser prostatectomy (n=49), electrovaporisation prostatectomy (n=46) or 'classical' TURP (n=53) in various randomised prospective studies, with a standard post-treatment UDI after 6 months. We included patients with *in*complete or 'partial' desobstruction gave a unique opportunity to study the relation between the grade of desobstruction and the detrusor voiding contraction in a human *in vivo* model.
Results: Modal group reduction of BOO in all patients was 2 (Schafer) classes. Bladder outlet obstruction index (BOOI) reduced from 57 (± 26) to 7 (± 22) (paired t-test p: .000) and urethral resistance factor (URA) diminished from 39 (± 17) cmH_2O to 16 (± 9) cmH_2O (p: .000). Average WF_{max} was on average unchanged: 12.5 Wm^2 before and 11.8 Wm^2 after treatment (p: .145), and significantly correlated (r^2 .419 with p: .000). Interpretation of results: in this group of patients W_{max} was almost identical before and after desobstruction, and without any relation with the grade desobstruction. Void% was improved in most patients (82%) after desobstuction. Patients with a negative delta void% showed a decline of W_{max}. Most of these patients had little (-1 class) or no (0 or +1 class) desobstruction.
Conclusion: What this study adds is that there is on average little change of detrusor voiding contraction ± 6 months after all 'grades of desobstruction'. Improved voiding efficacy is related to the grade of desobstruction and to maintenance of detrusor voiding contraction 'strength'. Urodynamic voiding efficiency improved in the majority of patients most consistently when BOO reduction was ≥2 (Schafer) grades. This study also indicates that incomplete or partial desobstruction of BPH-BOO may be associated with decline of detrusor contraction power and increase of PVR in a proportion of patients.