Sensory Disturbance of the Bladder Is an Important Determinant of Detrusor Overactivity in Severe BOO Patients

Introduction and Objectives: To identify correlation between detrusor overactivity (DO) on urodynamics and bladder outlet obstruction (BOO) and bladder sensation.
Material and Methods: We examined urodynamics (filling cystometry, pressure flow study, electromyogram of external urethral sphincter) of 61 patients with benign prostate hyperplasia. The average age of patients was 70. This group of patients had severe BOO because mean value of prostate volume was 75cc and median BOO Index (BOOI) was 68. DO was defined according to the ICS classification (2002) as involuntary detrusor contractions during cystometry. The patients were divided into two groups according to DO. (Group 1: DO(-), group 2: DO(+)) In addition, questionnaires of I-PSS score and OABSS score were filled at examination was performed.
Results: Among 61 patients, 31 patients (50.8%) presented DO. On univariate analysis, bladder compliance (43.8/22.9ml/cmH2O)($p < 0.001$), opening pressure (63.0/95.2 cmH2O)($p < 0.001$), PdetQmax (68.9/92.3 cmH2O)(p=0.005), Bladder Contractility Index (BCI) (101.8/121.7) (p=0.027) and BOO Index (BOOI) (55.8/80.6) (p=0.007) were statistically different between two groups, but OABSS scores and I-PSS scores, storage symptoms, voiding symptoms, and QOL index were not. ($p>0.05$) No statistical difference exists in age, prostate volume, PSA between two groups ($p>0.05$). As concerns bladder sensation, reduced sensation was more frequent in group 2, but there was no correlation between urgency score and DO, BOO. On multivariable analysis, bladder compliance (<20 ml/cmH2O) significantly associated with DO.
Conclusions: These results suggest that DO in patients with severe BOO was thought to correlate with sensory disturbance of the bladder following BOO, induced by extension, pressure overload and ischemia of detrusor.