

THE ROLE OF AMBULATORY URODYNAMIC INVESTIGATION IN PATIENTS WITH URINARY INCONTINENCE (CAN IT BECOME A STANDARD CLINICAL INVESTIGATION?)

Hypothesis / aims of study

Few studies in the literature have used ambulatory urodynamic evaluation to assess women with urinary incontinence (1). Some recent studies, comparing the results of ambulatory and conventional urodynamic observations, usually have no patient selection criteria omitting the cases with frequency, urgency and mixed symptoms without significant urinary incontinence. Although it is well recognized that ambulatory urodynamics is an extremely sensitive method for detecting involuntary detrusor activity during physiological filling phase (2), there is still no consensus for recommendations concerning clinical indications and technique of this method. Any developed technique which may prevent the subsequent misdiagnoses will prevent the unnecessary surgeries, even minimally invasive ones. From this point of view, we aimed to identify an acceptable clinical experience to emphasize the importance of ambulatory urodynamic observations prior to final decision of antiincontinence surgery especially in urinary incontinence cases, whose conventional urodynamics failed to show any confirming data related with their lower urinary tract symptoms (LUTS).

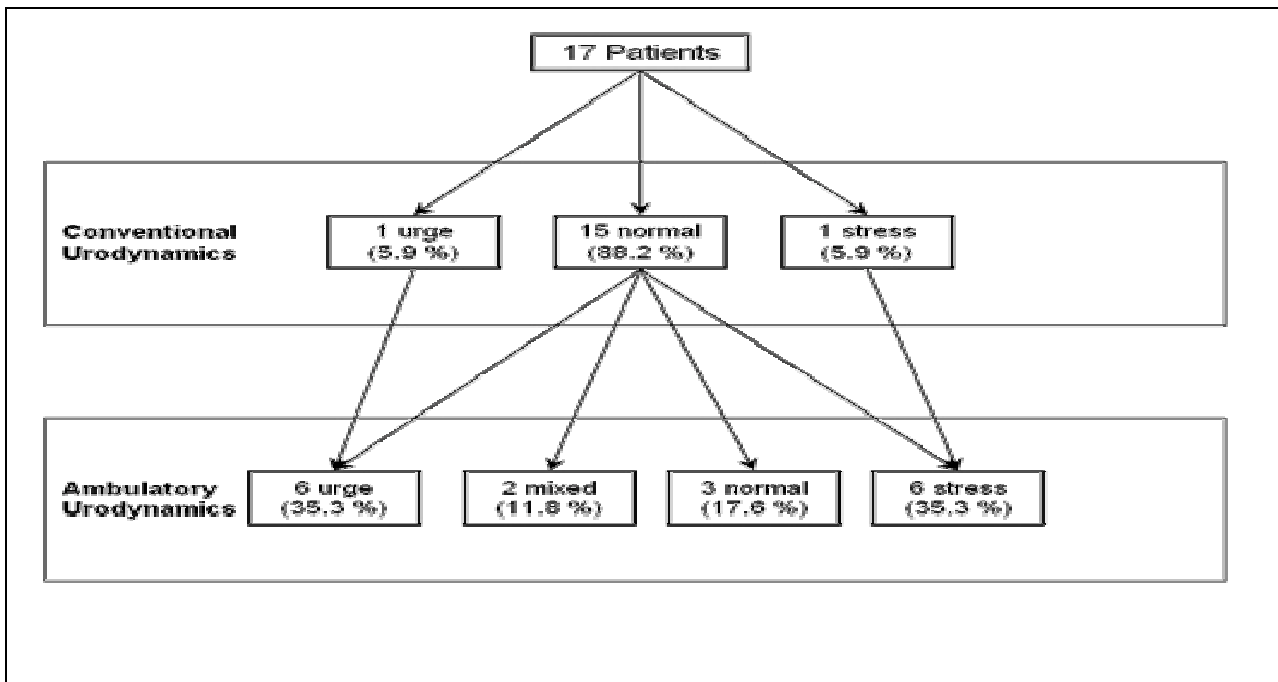
Study design, materials and methods

A cohort of patients who were attended more than once to our hospital as a tertiary referral site for further investigation between June 2005 and February 2006 due to their persisting urinary incontinence symptom, were prospectively evaluated. In other words, patient selection criteria, delivered from routine clinic algorithm of differential diagnosis of patients with urinary incontinence. After fulfilling a voiding diary at least one day and the forms; Urogenital distress Inventory 6 and Incontinence Impact Questionnaire by themselves, an initial evaluation plan was performed, including a careful history, detailed physical examination, pelvic organ prolapse assessment with cough stress test and Q-tip test, urine culture and residue volume measurement. The patients, referred to urodynamic laboratory also for conventional urodynamics as they were considered complex incontinence cases. Conventional urodynamic examination was done according to International Continence Society (ICS) guidelines. Patients without any form of neurological disease and urinary infection, with positive pad test and post void residual volume less than 50cc, were recruited to the study (n=17). In none of them, we were able to provide an accurate diagnosis. After providing informed consent from all patients, ambulatory monitoring in the clinical setting was performed with duration of 1-5 hours. The results of ambulatory urodynamic observations had been compared with the patient's LUTS, clinical findings, previous and final therapeutic approaches and as well as the conventional urodynamic results.

Results

17 women (aged 36-70 years) with a mean parity of 3.53 (1-6) were studied. According to LUTS of the patients, incontinence types of the study group was; 5.9% urge incontinence, 17.6 % stress incontinence, 76.5 % mixed incontinence. The percentage of patients with previous incontinence surgery was 17.6% (n=3). Ambulatory urodynamic investigation of patients (n= 15) with normal conventional urodynamic results, showed urge incontinence 35.3 % (n= 6), mixed incontinence 11.8% (n= 2), and stress incontinence 35.3% (n= 6) respectively (Fig.1). Only in 3 patients (17.6%), incontinence could not be observed during ambulatory urodynamic monitoring. Confirmation of conventional urodynamic results could be done by ambulatory monitoring in only 2 of 17 patients (stress incontinence n= 1, urge incontinence n=1). Overactive bladder scores derived from UDI were higher in the patients whose ambulatory urodynamic findings were urge incontinence, compared to stress incontinence (44 vs. 33 respectively). None of the women, who had shown mixed incontinence or urge incontinence during ambulatory monitoring even with pelvic organ prolapse, underwent surgery for stress incontinence.

Figure1: Conventional and Ambulatory Urodynamic Outputs



Interpretation of results

Clinical use of multipurpose ambulatory system with multiple recording buttons enabled us to record user defined events simultaneously during urodynamic monitoring at clinical settings. This close follow up and guidance of patients, lead us to obtain highly sensitive and different ambulatory urodynamic observations in the patients who had normal conventional urodynamic results. More accurate identification of complex cases with severe symptoms of incontinence apparently eliminated the unnecessary surgery decisions as it is well known that detrusor over activity whether pre-existing or de novo, reduces the post operative patient satisfaction even in cases with successfully performed antiincontinence surgery. Although this study has a small sample size to show statistical significance, it presents an acceptable clinical observation to promote hypothesis synthesis to be checked by well designed clinical trials.

Concluding message

Ambulatory urodynamic investigations will gain wide spread clinical acceptance in near future. It needs to be refined with further studies including large series to set the standards of its clinical indication and details of implementation methodology.

References:

1. British Journal of Obstetrics and Gynecology ,Vol107,pp.316-319, 2000
2. The Journal of Urology, Vol166, pp.2253- 2258, 2001

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study was approved by the Institutional ethics committee of Ankara School of Medicine and followed the Declaration of Helsinki Informed consent was obtained from the patients.