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FURTHER INSIGHT INTO DETRUSOR AFTER-CONTRACTION

Aims of study

Detrusor after-contraction (DA-C), or the presence of an increase in detrusor pressure after cessation of flow at the end of micturition, is a common cystometric event, yet its significance is not clearly understood and, for this reason, not defined in the report of the ICS standardisation (1). Even the most recent manuals of Urodynamics describe the phenomenon without providing an interpretation (2). A number of explanations have been proposed for this type of post-micturition events, including being a manifestation of detrusor instability (3-5) or the post-micturition dribble syndrome (6).

Aims of this study was to retrospectively review the prevalence of DA-C in patients who consecutively underwent a pressure-flow (PQ) study in our urodynamics laboratory and the correlation with both LUTS and the urodynamic diagnosis.

Methods

From January 1999 to February 2000, 297 patients (130 males, 167 females, mean age 59 years) underwent a complete urodynamic evaluation, including a pressure-flow study. We retrospectively searched for the presence of a DA-C in the tracings of these studies, in order to calculate the prevalence of the phenomenon in the population of patients referred to our Urodynamics laboratory and to look for possible correlations with a number of lower urinary tract symptoms (LUTS) and with the presence of detrusor instability.

For the purpose of this study we defined DA-C as a sudden increase in detrusor pressure –regardless of the entity of the increase- after cessation of the voiding detrusor contraction and in the absence of flow.

Results

A DA-C was found in the trace of 166 of 297 pressure-flow studies (55.9 %). The prevalence was 46 % in males and 54 % in females.

The patients involved in the study presented a variety of LUTS. The symptoms of possible interest and their correlation with the presence of DA-C are summarised in table 1.

| Symptoms | Prevalence of DA-C |
|-----------------------------------|--------------------|
| Urgency (N = 204) | 121 (73 %) |
| Urge Incontinence (N = 170) | 103 (61 %) |
| Post-micturition dribble (N= 179) | 97 (54 %) |

Table 1. Correlation between prevalence of DA-C and LUTS of interest in 297 P-Q studies.

The prevalence was high in patients presenting urgency and urge incontinence, but not in patients with post-micturition dribble

Detrusor instability (DI) was found in 189 of 297 PQ studies. The prevalence of DA-C in these 189 patients with DI was 69.3 % 55 more patients presented urgency and or urge incontinence, without evidence of DI at cystometry These patients were diagnosed as having “sensory urgency” The prevalence of DA-C in this sub-group of patients was 17.5 %. Therefore a DA-C was found in 87 % of patients with DI or sensory urgency. On the other end, among the patients showing DA-C, only 27.1 % did not have urgency, 38 % did not have urge incontinence, and 30.7 % did not have detrusor instability (Tab 2)

| CONDITION | YES No. of Pts (%) | NO No. of Pts (%) |
|--------------------------|-----------------------|----------------------|
| Urgency | 121 (72.9) | 45 (27.1) |
| Urge incontinence | 103 (62) | 63 (38) |
| Detrusor Instability | 115 (69.3) | 51 (30.7) |
| Post-micturition dribble | 96 (57.8) | 70 (42.2) |

Table 2. Symptoms of overactive bladder and diagnoses of DI in 166 pts with DA-C

Conclusions

The results of the present retrospective study confirm that the presence of detrusor after-contraction is a common finding in patients undergoing P-Q studies (56 %) This post-micturition event was positively correlated with urgency and urge incontinence and with the diagnosis of detrusor instability and sensory urgency A positive correlation was not found for post-micturition dribble

It's the authors' belief that in order to be able to interpret the presence of DA-C as a manifestation of detrusor instability, further prospective studies should be undertaken

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