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ABSENT BLADDER SENSATION DURING CONVENTIONAL URODYNAMICS IS ASSOCIATED WITH BLADDER ACONTRACTILITY CONFIRMED BY AMBULATORY URODYNAMICS

Hypothesis / aims of study

In the quest to unravel detrusor underactivity, one specific question keeps rising – how can we differentiate detrusor underactivity from normal detrusor function through the assessment of voiding parameters? In addition, it will be useful to differentiate acontractility from reduced contractility in detrusor underactivity. An earlier study already showed differences between the urodynamic tools that are currently used to differentiate between both entities. Moreover, the ambulatory urodynamic study (ambulatory-UDS) appeared to be a more precise tool to define true bladder acontractility [1].

The purpose of this study is to evaluate if we can predict ambulatory-UDS derived bladder acontractility by using bladder sensation during conventional urodynamics in patients who are acontractile on a conventional urodynamic study (conventional-UDS).

Study design, materials and methods

In this cross-sectional study patients were included consecutively between December 2002 and March 2014. All included patients showed no detrusor contractions on conventional urodynamic study (conventional-UDS) and therefore were suspected of having bladder acontractility. After initial conventional-UDS, an ambulatory urodynamic study (ambulatory-UDS) was conducted successively in all patients during diagnostic workup. Results of the ambulatory-UDS were interpreted by a resident experienced in judging urodynamic measurements and one staff member specialised in incontinence and urodynamics from our centre. In this study 'true' bladder acontractility was defined as a bladder filling and micturition phase without detrusor pressure rise on ambulatory-UDS.

We evaluated the correlation between the presence of bladder sensation on conventional urodynamics and the presence of detrusor contractility on ambulatory-UDS.

Results

Seventy-five patients eligible for this study, consisting of 43 (57%) female patients with a mean age of 50 (SD 13.1) years, and 32 (43%) male patients with a mean age of 54 (SD 13.0) years.

After ambulatory-UDS only 17 (23%) of these 75 patients showed acontractility on both conventional- and ambulatory-UDS. The other 58 (77%) suspected acontractile patients did have contractions on ambulatory-UDS.

Evaluation of bladder sensation in suspected bladder acontractility

Of the subgroup of 17 patients who had ambulatory-UDS proven bladder acontractility only 5 (29%) patients had a filling sensation during initial conventional-UDS (*Table 1*). This was compared to 51 (88%) patients with bladder sensation during retrograde filling in the group presenting with contractions on ambulatory-UDS (chi-square test $p<0.001$). Spearman correlation showed a significant, moderate to strong correlation between the presence of both bladder sensation and bladder contractility ($\rho = -0.563$; df 1; $p<0.001$).

Interpretation of results

The results of this study show that the conventional-UDS derived conclusion of bladder acontractility is confirmed by ambulatory-UDS in only 23% of the cases, which is in concordance with previous literature [1]. Moreover, we showed a significant correlation between filling sensation on conventional urodynamics and the presence of bladder contractility on ambulatory-UDS. These results suggest that the assessment of bladder sensation during conventional-UDS can help in stratifying for true bladder acontractility without performing additional ambulatory-UDS.

Concluding message

Our results indicate that the assessment of bladder sensation during conventional-UDS gives valuable additional information to facilitate the discrimination of true bladder acontractility and reduced contractility without performing an ambulatory-UDS. In order to confirm the clinical significance of our findings a future study is needed to relate these results to treatment outcome .

Table 1. Diagnosis after Ambulatory-UDS compared to the presence of bladder sensation during conventional-UDS.

	Conclusion Ambulatory-UDS		
	Contractions present (%)	Bladder acontractility (%)	
Absence bladder sensation	7 (12)	12 (71)	**19**
Presence bladder sensation	51 (88)	5 (29)	**56**
Total No. pts	**58 (100)**	**17 (100)**	**75**

References

1. Van Koeveringe GA, Rahnama'I MS, Berghmans BC. The additional value of ambulatory urodynamic measurements compared with conventional urodynamic measurements. BJU int. 2010. Feb;105(4):508-13

Disclosures

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