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THE USEFULNESS OF ICE-WATER TEST IN THE PATIENTS WITH BPE ASSOCIATED WITH OVERACTIVE BLADDER

Hypothesis / aims of study

Overactive bladder is caused by central or spinal neurogenic disorder and commonly associated with BPE. Subclinical brain lesions are also revealed by MRI screening in the elderly males with irritative bladder symptoms and no episode of cerebrovascular accident or neurogenic deficits[1]. This report indicated that improved imaging of CNS in the future will reveal neurogenic lesion in the patient with overactive bladder without demonstrated neurogenic lesion. Therefore it is very important to differentiate between bladder outlet obstruction and detrusor overactivity in the patients with BPE associated with overactive bladder. The pressure/flow study is known as an accurate test to differentiate two groups. However, the pressure/flow study is so sophisticated and need expensive equipment and well trained person and not commonly available. We performed the pressure/flow study and ice-water test which is traditionally used to diagnose the neurogenic bladder in the patients with BPE associated with overactive bladder and compared the results.

Study design, materials and methods

The pressure/flow study was performed in 36 patients with BPE associated with overactive bladdere who had more than 40cc of prostate on transrectal ultrasonography and urge incontinence with frequency and/or, nocturia, weak stream, painful urination and no clinical neurogenic deficit. After pressure/flow study the ice-water test was performed by instilling 4℃ sterilized water through a catheter at 200ml/min with supine position. The volume instilled was about 30% of bladder capacity. If PdetQmax -2Qmax. > 40, the patient was bladder outlet obstruction with overactive bladder. If PdetQmax -2Qmax.< 20 the patient was detrusor overactivity If there was efflux of water around the catheter during or after water instillation the ice-water test was positive.

Results

Thirty two patients out of 36 BPE with overactive bladder was negative on the ice-water test. All of 32 patients who had negative ice-water test were bladder outlet obstruction on the pressure/flow study. Two of 4 patients who had positive ice-water test were bladder outlet obstruction with overactive bladder and the other two patients were detrusor overactivity on pressur/flow study(Table1).

Table 1. Results of the ice-water test and pressure/flow study in 36 patients

Pressure/flow study	ice-water test	
	positive	negative
BOO with OAB	2	32
Detrusor Overactivity	2	0
	4	32

Interpretation of results

This results show that ice-water test is needed to differentiate between detrusor overactivity and bladder outlet obstruction with overactive bladder in the patients BPE associated with overactive bladder. If the ice-water test is positive the pressure/flow study is needed to differentiate between bladder outlet obstruction with overactive bladder and detrusor overactivity. If the patient is positive on the ice-water test and bladder outlet obstruction associated with overactive bladder on the pressure/flow study the brain CT or MRI is needed to detect the subclinical brain lesion. In that case there would be two possibility:The subclinical brain lesion would be detected or not detected by brain CT or MRI. Even though not detected, it may be detected by a newly developed imaging modality in the future. Moreover, the ice-water positive bladder outlet obstruction with overactive bladder can explain the unpredictable effect of TURP.

Concluding message

The ice-water test is a safe and easy screening method to improve diagnostic precision in the patients with BPE associated with overactive bladder.

References

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**