

REVISIT BLADDER GLOMERULATIONS AFTER HYDRODISTENTION- ARE GLOMERULATIONS A PATHOGNOMONIC SIGN FOR INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME? A PROSPECTIVELY SYSTEMATIC STUDY

Hypothesis / aims of study

Glomerulations after cystoscopic hydrodistention (CHD) have been used in the diagnosis of interstitial cystitis/bladder pain syndrome (IC/BPS). However, the characteristic cystoscopic findings of patients with urological diseases other than IC/BPB have not been fully investigated yet. The aim of this study was to systematically evaluate the rate of glomerulations developed after CHD in patients with common urological diseases.

Study design, materials and methods

Patients with urological conditions requiring cystoscopy or transurethral procedures were prospectively enrolled in this study. All patients received CHD under general or spinal anesthesia before elective endoscopic operations. Patients with urinary tract infection, gross hematuria or bladder stones were excluded. The urinary bladder was distended with the intravesical pressure of 80 cmH₂O for 10 minutes and then evacuated slowly. Formation of petechia, glomerulations, splotch hemorrhage, mucosal fissure or ulceration were carefully inspected during the filling and drainage phase. The maximum anesthetic bladder capacity (MBC) was recorded. The ulcer lesion or grade of glomerulations (from 0 to 4) were determined by a single operator (HC Kuo) with a standard graphic chart (Fig. 1).

Results

A total of 120 patients (age 18-92 years) were enrolled in this prospective study including 66 men and 54 women. There were 20 patients with IC/BPS, 28 with benign prostatic hyperplasia and obstruction, 42 with upper urinary tract stones, 17 with stress urinary incontinence and hypersensitive bladder and 13 with other bladder and urethral lesions. All patients with IC/BPS had glomerulations after hydrodistention. However, glomerulations (mostly grade 1 and grade 2) were also noted in 3 (10.7%) BPH, 27 (64.3%) stone, 6 (33.3%) stress urinary incontinence, and 4 (33.3%) with other urinary tract lesions (Table 1). There was no significant difference in MBC among the patients with different urological diseases.

Interpretation of results

Glomerulations after CHD could be observed in patients with urological diseases other than IC/BPS with a prevalence rate ranged from 10.7% to 64.3%. Mild degree of urothelial dysfunction induced by inflammation might be involved in these subjects although the pathogeneses of each disease were different. Presence of glomerulations was demonstrated in all the IC/BPS patients suggesting the important role of urothelial dysfunction on IC/BPS. However, it is obviously not pathognomonic for IC/BPS.

Concluding message

The presence of glomerulations after CHD was not only found in patients with IC/BPS but also in those with other common urological diseases. Mild degree of chronic inflammation involving the urothelium might account for the development of glomerulations.

Fig. 1. The formation of ulcer, and grades of glomerulations after CHD

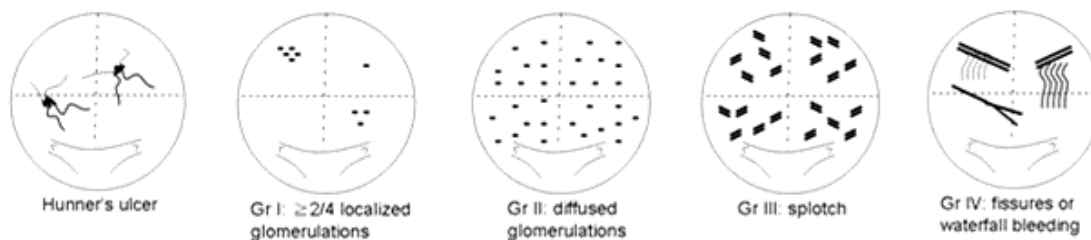


Table 1. The maximum bladder capacity and glomerulations grade in IC/BPS and other urological diseases

Diagnosis	N	Age (years)	MBC (mL)	Grade of glomerulations					Positive glomerulations rate
				G0	G1	G2	G3	G4	
IC/BPS	20	51.6±12.0	724±194	0	13	4	2	1	20 (100%)
BPH	28	74.1±10.2	554±180	25	2	1	0	0	3 (10.7%)
SUI & HSB	18	60.5±11.0	748±173	12	2	4	0	0	6 (33.3%)
Stone	42	54.4±13.1	685±160	15	19	8	0	0	27 (64.3%)
Other disease*	12	53.0±15.4	684±191	8	1	2	1	0	4 (33.3%)
Total	120	59.3±14.8	669±186	60	37	19	3	1	60 (50.0%)

BPH: benign prostate hyperplasia, IC/BPS: interstitial cystitis/ bladder pain syndrome, SUI & HSB: stress urinary incontinence and hypersensitive bladder.

*2 out of 4 with overactive bladder, one out of 4 with neurogenic voiding dysfunction and one with ureteral stricture had glomerulations.

Disclosures

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