456

Takahashi J[1], Niimi A[1], Nomiya A[2], Akiyama Y[1], Igawa Y[1], Homma Y[1]
1. *The University of Tokyo,* ***2.*** *Mitsui Memorial Hospital*

PREDICTIVE FACTOR FOR CONTRACTED BLADDER AS AN END STAGE HUNNER TYPE INTERSTITIAL CYSTITIS

Hypothesis / aims of study

Contracted bladder is occasionally seen during long-term observation of patients with Hunner type interstitial cystitis (HIC). (1,2) Although those patients with long disease duration seemed to have higher chance of having bladder contracture, the factors which reduces bladder capacity remains unknown. Our aim was to review the incidence of contracted bladder in HIC patients and to identify the risk factors.

Study design, materials and methods

Retrospective review of HIC patients' records over 7 years, 2009-2016, was carried out. We defined contracted bladder as either 'maximum bladder capacity less than 300ml at hydrodistension under general or spinal anaesthesia' or 'existence of bilateral hydronephrosis'. All the patients underwent hydrodistention at 80cm H2O to measure bladder capacity, followed by transuretheral resection and/or coagulation (TUC) of Hunner's lesion. Patients' characteristics including symptom severity (O'Leary and Sants' symptom index and problem index (OSSI and OSPI), FVC, VAS) and maximum bladder capacity during hydrodistension were investigated. Logistic regression was used to investigate the association of these factors with the incidence of contracted bladder.

Results

A total of 136 patients were reviewed. Overall, 48 patients had bladder contracture during observation. The average numbers of hydrodistension performed was 2.23 times. All the patients were Hunner type IC. The maximum bladder capacity at hydrodistension gradually decreased as the number of repeated hydrodistension increased. (Table 1)
24H urinary frequency was increased as the bladder capacity decrease (pre-treatment vs contracted bladder; 21.0 vs 25.1), whereas pain, OSSI and OSPI were improved once bladder contracture was established. (VAS 7.6 vs 3.9; OSSI 15.4 vs 12.8; OSPI 13.5 vs 10.4) It is to be noted that 6 cases of sever contracted bladder showed disappearance of bladder pain.
In the univariate analyses, gender, VAS score, numbers of hydrodistention, and bladder capacity at the first hydrodistention were significantly related to onset of contracted bladder, while age, OSSI, and OSPI were not significant. (Table 2)
In the multivariate logistic model showed that the bladder capacity at the 3rd time hydrodistention was the risk factors for onset of contracted bladder of HIC (Odds ratio;26.2). (Table 3)

Interpretation of results

We demonstrate the risk factor of the contracted bladder in HIC is the reduced bladder capacity at the third time hydrodistention. Intrafascicular fibrosis of the bladder is one of the well-known histopathological finding of IC and it can be presumed that chronic inflammation may have caused bladder fibrosis and thus bladder contracture.

Concluding message

This study revealed that the reduced bladder capacity at the 3rd time hydrodistention may be a possible predictor of contracted bladder in Hunner type IC. Patient with reduced bladder capacity should be carefully observed and informed for the future risk of contracted bladder.

Table 1. Patient demographics

	Mean (SD) (n=135)
Age	66.04 (10.42)
Gender male: female (%male)	18 : 117 (13.2%) *
OSSI	14.83 (3.71)
OSPI	12.85 (3.15)
VAS	6.90 (2.35)
24H urinary frequency	19.23 (7.46)
No. of hydodistention	2.23 (1.51)
Bladder capacity at 1st hydrodistention (n=135)	480.9 (166.2)
Bladder capacity at 2nd hydrodistention (n=69)	434.8 (172.3)
Bladder capacity at 3rd hydrodistention (n=41)	387.8 (142.2)
Bladder capacity at 4th hydrodistention (n=19)	380.0 (197.9)
Bladder capacity at 5th hydrodistention (n=10)	345.0 (175.5)
Bladder capacity at 6th hydrodistention (n=6)	333.3 (98.3)
Bladder capacity at 7th hydrodistention (n=3)	333.3 (144.3)
Bladder capacity at 8th hydrodistention (n=1)	400.0
Contracted Bladder	46 (34.1%) *

* number of patients (%)

Table 2. Univariate analysis of patient characteristics, self-assessment questionnaire and operational findings associated with the onset of contracted bladder of Hunner type IC

variables		Contracted Bladder (-) (n=89)	Contracted Bladder (+) (n=46)	p
Age				0.12
	>65	31	18	
	≦65	58	28	
sex				0.018
	M	9	9	
	F	80	37	
OSSI				0.065
	>15	49	28	
	≦15	40	18	
OSPI				0.13
	>13	51	33	
	≦13	37	13	
VAS				0.048
	>7	38	30	
	≦7	33	13	
24H urinary frequency				<0.0001
	>20	32	28	
	≦20	57	18	
Bladder capacity at the first hydrodistention				<0.0001
	>480ml	56	13	
	≦480ml	30	31	
Bladder capacity at the second hydrodistention				0.0011
	>387ml	24	7	
	≦387ml	14	24	
Bladder capacity at the third hydrodistention				<0.0001
	>380ml	16	4	
	≦380ml	3	17	

Table 3.Multivariate analysis of factors associated with the onset of contracted bladder

variables	Odds Ratio	95% CI	p
Bladder capacity at 3rd time hydrodistention <380	26.2	2.55-813.0	0.0045

References

1. F Parivar, RA Bradbrook et al. Interstiticalcystitis. B J Urol.1986
2. J rossberger, M Fall, O Jonsson, R peeker et al. Long-term results of reconstructive surgery in patients with bladder pain syndrome/interstitial cystitis:subtyping is imperative. J Urol. 2007

Disclosures

Funding: none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** The University of Tokyo Hospital Ethical Committee **Helsinki:** Yes **Informed Consent:** Yes