

HYDRODISTENTION OF THE BLADDER FOR THE TREATMENT OF PAINFUL BLADDER SYNDROME/INTERSTITIAL CYSTITIS (PBS/IC)

Hypothesis / aims of study

The purpose of this study is to determine whether a transvaginal trigonal nerve block immediately preceding cystoscopy with hydrodistention yields an additional therapeutic benefit compared to cystoscopy with hydrodistention alone for the treatment of painful bladder syndrome/interstitial cystitis (PBS/IC).

Study design, materials and methods

A retrospective chart review was performed at a single-center comprised of three surgeons board-certified in Female Pelvic Medicine and Reconstructive Surgery. Performance of a trigonal nerve block prior to hydrodistention is at the discretion of the surgeon. Trigonal block is performed by injecting 0.25% bupivacaine with 1.0% Xylocaine into the anterior vagina under the trigone. This was done under cystoscopic guidance to visualize elevation of the trigone from the injection. Patients were identified using the CPT code 52260 for cystoscopy with hydrodistention. Patients with procedures between January 1, 2008 and December 31, 2013 were included. Pain scoring was performed using a standard 0-10 numeric scale. The primary outcome compared change in pain score from the baseline to one month post-operative. Patients were excluded if they did not follow up postoperatively or if pain scores were omitted. Statistical analyses included paired and unpaired t-test for continuous variables and Chi-square for categorical variables.

Results

183 patients underwent hydrodistention of the bladder. Of these, 77 were excluded. Of the 106 patients remaining, 48 received a trigonal nerve block and 58 did not. Demographic data including age and BMI did not differ between groups. Baseline pain scores did not differ between the block and no block groups (4.5 vs. 5.1; $p = 0.334$). There was no difference in pain scores at one month postoperatively with trigonal nerve block compared to no block (1.6 vs. 2.6; $p = 0.078$). Both groups had a significant improvement in pain scores ($p < 0.0001$). There was no difference in the primary outcome of change in pain score from baseline between the two groups (-2.9 vs. -2.6; $p = 0.694$). Trigonal block was associated with longer distention times (4.3 min vs. 2.4 min; $p < 0.0001$). As distention time was dichotomized into 2 minutes and >5 minutes based on surgeon preference, a separate comparison of distention time was assessed. Patients receiving >5 minute distention were more likely to have a trigonal block (86.8% vs. 36.8%; $p < 0.0001$) and had a lower baseline pain score (3.6 vs. 5.5; $p = 0.008$). While both groups had a significant improvement in pain score ($p < 0.0001$), there was no difference in change in pain score from baseline (-2.2 vs. -3.0; $p = 0.061$).

Interpretation of results

Hydrodistention was shown to yield a statistically significant improvement in postoperative pain scores. This improvement was irrespective of trigonal nerve block or distention times. However, an opportunity for bias exists as the decision to perform a trigonal block as well as determine the distention time was dependent on the surgeon.

Concluding message

Hydrodistention of the bladder was shown to decrease pain postoperatively regardless of trigonal nerve block or time of distention. Given the surgeon bias in this study, a randomized-controlled trial is necessary to determine the benefits of length of hydrodistention or performance of a block.

Table 1- Trigonal Nerve Block versus No Block

		Block (n=48)	No Block (n=58)	p-value
Age		46.7	43.5	0.396
BMI (kg/m ²)		26.6	30.9	0.240
H/O Recurrent UTI		7 (14.9%)	11 (19.0%)	0.550
Surgeon				<0.0001
	A	33	0	
	B	25	33	
	C	0	15	
Distention Time (min)		4.3	2.4	<0.0001
Preop Pain Score		4.5	5.1	0.334
PACU Pain Score		2.3	1.4	0.187
Postop Pain Score		1.6	2.6	0.078*
Change from Baseline		-2.9**	-2.6**	0.694
PACU Narcotic Use		24 (41.3%)	14 (29.1%)	0.237
Postop Urgency		23 (39.7%)	19 (39.6%)	0.994
Postop Frequency		24 (41.3%)	21 (43.8%)	0.806
Repeat Distention		6 (10.3%)	2 (4.2%)	0.231
Further Treatment		38 (65.5%)	32 (66.7%)	0.901
Specific Treatments				0.896
	Medication	26	22	

	Physical Therapy	3	1	
	Combination	8	8	
	Other	2	1	
	None	17	16	

* Trends, not statistically significant

** Within group change p<0.0001

Table 2- >5-minute versus 2-minute Distention

		>5 minutes (n=38)	2 minutes (n=68)	p-value
Age		42.7	46.7	0.303
BMI (kg/m ²)		26.9	28.9	0.591
H/O Recurrent UTI		5 (13.2%)	13 (19.1%)	0.433
Surgeon				<0.0001
	A	33	0	
	B	0	58	
	C	5	10	
Trigonal Nerve Block		33 (86.8%)	25 (36.8%)	<0.0001
Preop Pain Score		3.6	5.5	0.008*
PACU Pain Score		2.6	1.5	0.127
Postop Pain Score		1.3	2.4	0.061*
Change from Baseline		-2.2**	-3.0**	0.329
PACU Narcotic Use		14 (36.8%)	44 (64.7%)	0.060
Postop Urgency		13 (34.2%)	29 (42.6%)	0.394*
Postop Frequency		12 (31.6%)	33 (48.5%)	0.090*
Repeat Distention		5 (13.2%)	3 (4.6%)	0.102*
Further Treatment		21 (55.3%)	49 (72.1%)	0.080*
Specific Treatments				0.067*
	Medication	11	37	
	Physical Therapy	3	1	
	Combination	6	10	
	Other	2	1	
	None	15	18	

* Trends, not statistically significant

** Within group change p<0.0001

Disclosures

Funding: None **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Christiana Care Institutional Review Board **Helsinki:** Yes **Informed Consent:** No