

LONG TERM OUTCOME IN MEN AFTER TREATMENT FOR INFRAVESICAL OBSTRUCTION AS A CHILD DIFFERS ACCORDING TO CLINICAL PRESENTATION.

Hypothesis / aims of study

Infravesical obstruction in boys may come to light by different clinical presentation. Usually severe obstruction reveals prenatally or at young age. The more subtle forms of obstruction may go unnoticed for longer time, and present with other symptoms. Hypothetically, severe infravesical obstruction is a complete different condition compared with mild obstruction, the first associated with severe bladder dysfunction and renal impairment. The aim of this study was to compare long term outcomes with respect to lower urinary tract symptoms (LUTS), incontinence (UI) and urinary tract infections (UTI) in young men treated for infravesical obstruction as a child, and making a distinction between different clinical presentations. We supposed that children presenting with hydronephrosis had the most severe form of infravesical obstruction.

Study design, materials and methods

All cystoscopic procedures were retrieved through the hospital surgical registration database and checked for patients who underwent transurethral treatment for infravesical obstruction between January 1987 and December 1996. Clinically, obstruction was suspected in boys with weak stream, straining, or abnormal findings at ultrasound or uroflowmetry. We included patients who were 18 years or older at the time of study and who had endoscopic resection of an infravesical obstruction as a child. Initial presentation was retrieved from the hospital database. Exclusion criteria were: syndromal disorders, neurogenic bladder disorder or a congenital anomaly of the penis, e.g. hypospadias or epispadias.

The following measurements were done: International Prostate Symptom Score (IPSS), the developmental version of the International Consultation on Incontinence Modular Questionnaire on Urinary Incontinence (ICIQ-UI). Two more questions were added on urinary tract infections (UTI's). Patient were subdivided in three groups: presenting with hydronephrosis (group 1), with UTI (group 2), and presenting with urge incontinence (UI) or LUTS (group 3).

Results

Of 444 patients who underwent transurethral treatment for infravesical obstruction, 139 were traceable, 133 consented to participate, 92 men [median age 21.9 years; IQR:19.6-25.6] returned the questionnaires and 77 performed uroflowmetry. Of the included patients: 11 (12%) initially presented with hydronephrosis (group 1), 30 (33%) with UTI (group 2) and 51 (55%) with UUI/LUTS (group 3). Forty-three patients underwent endoscopic valve resection (EVR), 33 EVR in combination with endoscopic incision of another infravesical obstruction (mohrman ring, meatal stenosis, obstructing bladder neck, urethral stricture, syringocele) and 16 treatment of infravesical obstruction, no EVR. Median age at initial treatment was 7.6 years [IQR:0.4-10.8]; median age at follow-up was 21.9 [IQR 19.6-25.6] years. Patients in group 1 and 2 were significantly younger than those in group 3 (median age 0.9 [IQR 0.3-1.3], respectively 1.0 [IQR 0.2-7.9] and 9.4 [IQR 7.6-11.8] ($p < 0.001$)).

Patients in group 1 and 3 more often had moderate symptoms, 20% respectively 18.4%, than patients in group 2 (10.7%), ($p = 0.16$), table 1. Patients in group 2, mostly at young age, scored mainly *no* or *mild* symptoms at time of follow-up (92.9%). Only two out of 28 (7.1%) patients presenting with an UTI reported moderate symptoms on the IPSS; these patients had repeated endoscopic treatment in the past. In group 1, two (20%) patients reported recent UTI's, compared with one (3.8%) in group 2 and no patient in group 3, ($p = 0.49$).

Clinical presentation	N (%) of total of 87			P-value
	Hydronephrosis	UTI	LUTS/UI	
IPSS				
No (0)	2 (20.0)	3 (10.7)	6 (12.2)	0.37
Mild (1-7)	6 (60.0)	23 (82.1)	34 (69.4)	
Moderate (8-19)	2 (20.0)	2 (10.7)	9 (18.4)	
ICIQ-UI				
Urgency incontinence				
Never	8 (80.0)	24 (85.7)	33 (67.3)	0.40
< 1/3 of time	2 (20.0)	4 (14.3)	14 (28.6)	
> 1/3 of time	0 (0.0)	0 (0.0)	2 (4.1)	
Stress incontinence				
Never	10 (100.0)	27 (96.4)	43 (87.7)	0.30
< 1/3 of time	0 (0.0)	1 (3.6)	6 (12.2)	
> 1/3 of time	0 (0.0)	0 (0.0)	0 (0.0)	
Incontinence e.c.i.				
Never	10 (100.0)	28 (100.0)	46 (93.9)	0.25
< 1/3 of time	0 (0.0)	0 (0.0)	3 (6.1)	
> 1/3 of time	0 (0.0)	0 (0.0)	0 (0.0)	
Post micturition incontinence				
Never	7 (70.0)	19 (68.8)	27 (55.1)	0.75
< 1/3 of time	3 (30.0)	8 (28.6)	16 (32.6)	
> 1/3 of time	0 (0.0)	1 (3.8)	6 (12.2)	

Interpretation of results

In this study most boys presented in infancy or in childhood with UTI, UI or LUTS instead of hydronephrosis. Therefore it is likely that they represent the mild end of the PUV spectrum.

We did not find differences in LUTS, UI or UTI's between patients with different clinical presentation. This means that we could not confirm the hypothesis that boys with hydronephrosis have a more severe form of bladder dysfunction on the long term. This might be due to the small number of boys who initially presented with hydronephrosis. Another possible explanation is that boys with LUTS and UI (and late diagnosis) have more severe bladder dysfunction due to long standing obstruction. Another possibility is that the underlying problem in boys with LUTS/UI is more than a subtle anatomical obstruction alone, i.e. dysfunctional voiding or idiopathic overactive bladder.

The fact that we found fewer patients with UI than expected in boys at the severe end of the spectrum [1] may be explained by the relatively high number of patients with mild valve disease. This may illustrate that endoscopic valve resection has been effective or that these patients had a relative mild form of obstruction. An unexpectedly high number of patients reported PMI at follow-up; this may be caused by a post micturition detrusor contraction in a predisposed overactive bladder. We do not have urodynamic studies of these patients to support this theory.

Concluding message

In patients with infravesical obstruction, diagnosis was at younger age in case hydronephrosis or UTI was the presenting symptom. We could not find a difference in long term outcome with respect to lower urinary tracts symptoms, incontinence or urinary tract infections between different clinical presentations.

References

1. Hennus PM, van der Heijden GJ, Bosch JL, de Jong TP, de Kort LM. (2012) A systematic review on renal and bladder dysfunction after endoscopic treatment of infravesical obstruction in boys. PLoS One 7: e44663.

Disclosures

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