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Title (type in CAPITAL LETTERS, leave one blank line before the text) EVALUATION AND MANAGEMENT OF ADULT-ONSET NOCTURNAL ENURESIS

Aims of Study: Adult-onset nocturnal enuresis unassociated with daytime incontinence is uncommon and there is a paucity of information about its incidence, significance, evaluation and treatment. The aim of our study was to review our experience with adult-onset nocturnal enuresis based on a data base of over three thousand consecutive patients referred for evaluation of lower urinary tract symptoms

Methods: A data base of 3277 consecutive patients was searched for adult-onset nocturnal enuresis. Patients with daytime incontinence were excluded. Evaluation consisted of history, physical examination, American Urological Association Symptom Scores (AUASS) and voiding diary, uroflow estimation of post-void residual (PVR), video urodynamics studies (VUDS), cystoscopy and radiographic evaluation of the upper tracts were obtained.

Results: Eight out of 3277 patients (0.2%) had adult-onset nocturnal enuresis as one of their primary complaints. The average AUASS was 12.6 (3 to 25), the average maximum uroflow rate was 8.5 ml/sec (5 to 15 ml/sec) and the average PVR was 350.1 ml (50 to 489 ml). All the patients were men and were found to have severe prostatic or vesical neck obstruction. Sixty-three percent had bilateral or unilateral hydronephrosis, 38% had bladder diverticula, 50% had vesico-ureteral reflux (VUR), and 50% had low bladder compliance. Transurethral resection of prostate (TURP) was recommended to all patients, but only 5 agreed. The other 3 were managed by alpha adrenergic blocker and 2 with adjunctive self intermittent catheterization (SIC). All patients who underwent TURP and or SIC, had resolution of symptoms and hydronephrosis when present. Refer to Table 1 for evaluation, treatment and follow-up of each patient.

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Table 1

	age	AUASS	Qmax/PVR (ml)/(sec/ml)	Upper Tract Evaluation	Treatment	Hydronephrosis after TURP
SL	65	8	5./50	Not done	TURP	N/A
MP	80	3	14/1333	Unilateral VUR Unilateral hydronephrosis	TURP	resolved
KK	59	7	15/35	Unilateral VUR Bilateral hydronephrosis	TURP	resolved
FS	56	9	8/489	Unilateral hydronephrosis	cardura and SIC	N/A
JW	48		4.6/207	Bilateral VUR Bilateral hydronephrosis	TURP	resolved
RS	49	25	7/172	Unilateral VUR Bilateral hydronephrosis	cardura and SIC	resolved
DH	56	15	11/115	Benign cyst	None	N/A
MM	69		3/400	Not done	TURP	N/A

Conclusions: Adult-onset nocturnal enuresis is a serious symptom that usually heralds significant urethral obstruction and a high incidence of bladder diverticula, hydronephrosis and VUR. It demands full urologic investigation including VUDS including video urodynamics and aggressive therapy. Both pharmacological and surgical treatments of obstruction can alleviate symptoms and resolve hydronephrosis and VUR.

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