Daytime urinary frequency in children

Jenny Walker, A M K Rickwood

Nine children had received antibiotic treatment without benefit. Spontaneous resolution of symptoms occurred over three to 12 weeks.

Comment

Though only one other example of this condition seems to have been recorded,¹ it has otherwise probably gone unreported rather than unnoticed. It has no evident cause. No known metabolic disorder accounts for the symptomatology, and a form of cystitis or urethritis is improbable in the absence of pyuria. Though cytomegalovirus has been reported to cause symptoms of lower urinary tract infection without pyuria,² our patients had no other manifestations of this infection. Young girls may develop urinary frequency, with secondary enuresis, due to threadworm infection, but symptoms are relieved only by anti-helminthic treatment.³ Daytime urinary frequency has also been described in children who are emotionally disturbed⁴ but this was not the case in our patients. Though some organic precipitating factor (possibly viral) cannot be excluded, extreme daytime frequency, unaccompanied by nocturia, suggests a behavioural phenomenon. Treatment with detrusor antispasmodics (propantheline, oxybutynin, etc) would not be expected to help as these drugs are used in the management of detrusor instability, when the symptoms are urgency and incontinence rather than frequency. Failure of such treatment in an individual patient does not exclude the possibility of detrusor instability, but Byard and Koff reported to the 56th annual meeting of the American Academy of Pediatrics (1987) that antispasmodics had no effect in children with this condition.

We write principally to draw attention to the syndrome as an easily recognisable, self limiting condition that requires no investigation beyond exclusion of urinary infection or management other than reassurance.

- 1 Sensirivattana R, Watana D, Sornmani W, Chomdej S, Vajrapongse R. Diagnostic study of urinary frequency in children. *Urology* 1987;30:50-2.
- 2 Davies JG, Taylor CM, White RHR, George RH, Purdham DR. Cytomegalovirus infection associated with lower urinary tract symptoms. *Br Med J* 1979;ii:1120.
- 3 Sachdev YV, Howards SS. Enterobius vermicularis infestation and secondary enuresis. *J Urol* 1975;113:143-4.
- 4 Asnes RS, Mones RL. Pollakiuria. *Pediatrics* 1973;52:615-7.

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Though the various functional and organic micturition disorders in children are generally well recognised, there is one fairly uncommon yet quite characteristic feature that seems to have escaped description. We describe this as the daytime frequency syndrome of childhood.

Patients

Over four years we saw 17 patients with this condition compared with 253 patients with functional nocturnal and diurnal enuresis seen during the same period. Most (11) were boys, and their ages ranged from 2·10 to 7·2 years (mean 4·2 years).

All had been fully toilet trained and had had a normal pattern of micturition but had subsequently developed extreme, unremitting, daytime frequency at intervals varying from five to 20 minutes. There was no polydipsia, and voided volumes were small. Observation of these children in the outpatient department and, in one case, on the ward, indicated that parents were not exaggerating the history. Equally striking was that nocturia was either wholly absent (six cases), occurred only for the first few days (four cases), or took place at intervals (once or twice a night) quite disproportionate to the daytime frequency (seven cases). Two children complained of dysuria for the first few days. None became incontinent by day, but five developed secondary nocturnal enuresis. Bowel habit remained normal. In four cases the disorder followed an upper respiratory tract infection, while in the remainder there were no evident precipitating factors.

These children showed no particular similarities of personality and came from varied social backgrounds. Physical examination (including thorough neurological examination) yielded unremarkable results in all cases, urine specimens were free of bacteria, cells, and protein and had a normal pH, and ultrasound examination showed normal upper renal tracts and bladders without thickening of the wall or residual urine.

Training of surgical registrars: a regional audit

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During the protracted and uncertain course of the surgical registrar's training his ability will be assessed many times, but only rarely does the trainee have an opportunity to comment on the quality of training offered by a particular post or an individual consultant. Such comments, if critical, often go unregistered, with no attempt made to improve any cited deficiency. This audit was performed to review the beneficial aspects and deficiencies of training posts in the Mersey region.

Methods and results

After the consultants' consent had been obtained 25 registrars who had passed the fellowship exam were sent a questionnaire to be completed retrospectively after a specified three month period.

Each registrar was asked to supply details of his post, the specialist interest of the unit, and the date of passing the fellowship exam. Operative training was assessed by the number of specified major elective and emergency operations performed or assisted at during the previous three months. The specified operations included major gastrointestinal, hepatobiliary, endocrine, and vascular procedures.

A subjective assessment of the training in managing patients and research was made, and an overall impression of the post was obtained by asking whether the registrar would recommend his post to a colleague. The questionnaire was sent to 25 registrars, of whom 18 (72%) replied. Experience since passing the fellowship exam ranged from one to six years with a median of three years. Sixteen registrars were in general surgical posts, and two were working in vascular surgery units with little general surgical input. The results for these two specialist posts were not included. The table shows the replies to questions on operative training.

Training in patient management was considered to be good by nine registrars (56%), adequate by four

	Without help		Under supervision		Assisted at	
	Elective	Emergency	Elective	Emergency	Elective	Emergency
Median	13	11	3	0	3	0
Range	1-40	2-26	0-20	0-2	0-13	0-6

(25%), and inadequate by three (18%). Two stated that free discussion about management of patients was not encouraged, and one individual replied that this was tolerated but not encouraged.

Twelve registrars (75%) were actively encouraged to perform research, but fewer than half of these were supervised. One registrar considered the research opportunities of his post to be good.

Seven (44%) said that they would have recommended their post to a colleague and eight (50%) had some reservations. One individual did not consider his post suitable for registrar training. The most frequent criticism was that too little time was allocated for pursuing a research interest.

Comment

Effective audit depends on a three part cycle of reviewing and setting standards, comparing these standards with observed practice, and implementing appropriate change.¹ In the Mersey region there is no organised training programme or consensus on standards of training with which to compare the results

of this audit. It is therefore impossible to comment on their acceptability.

On average, in this region, a registrar performs one major elective operation every week, but supervised training occurs only once each month. With the current surplus of highly experienced registrars it is not surprising that some consultants leave their juniors to perform major elective procedures without close supervision. One supervised operation each month is, however, probably inadequate training for most registrars. Supervision by consultants of emergency surgery is uncommon in the region.

At present the published record of a candidate's research experience and a higher degree are the two most important factors in obtaining promotion. While these yardsticks of ability continue to be applied the trainer must provide encouragement, ideas, advice, and free time for research so that his registrar may impress the next interview panel with his academic achievements. Only then will he be allowed to display his clinical skills at a higher level. Only one general surgical post in the Mersey region was considered to provide good opportunities and training in research.

Many registrars seemed satisfied with the quality of the training they had received. Most of the deficiencies cited could easily be corrected by more contact with a nominated supervising consultant and the allocation of free time for research.

1 Shaw CD. 4: Acceptability of audit. *Br Med J* 1980;280:1443-6.

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Effect of amiodarone on circulating antithyroid antibodies

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Long term treatment with amiodarone, a benzofuran antiarrhythmic drug that contains iodine, may cause hyperthyroidism and hypothyroidism induced by iodine.^{1,2} It has been suggested that amiodarone itself induces thyroid antibodies and that this may account for the high incidence of thyroid dysfunction in patients receiving this drug.^{3,4} We prospectively evaluated the development of thyroid autoantibodies in patients who were receiving long term amiodarone treatment.

Patients, methods, and results

Euthyroid patients were evaluated before, during, and after amiodarone treatment. Thirty one patients (21 men, 10 women; mean (SD) age 53 (15) years) lived in Pisa and Cagliari, Italy, regions fairly deficient in iodine, and 16 patients (11 men, five women; age 57 (14) years) lived in Worcester, Massachusetts, a region of iodine sufficiency. All patients were evaluated clinically and had tests of thyroid function, including serum concentrations of triiodothyronine and thyroxine by radioimmunoassay, thyroid stimulating hormone by sensitive immunoradiometric assay, and antimicrosomal and antithyroglobulin antibodies by passive haemagglutination with commercial kits (Fujizoki Pharmaceutical Ltd, Japan (Italy) and Ames Company, Miles Laboratory, Indiana (Worcester)).

Before receiving amiodarone 10 patients from Pisa and Cagliari and four patients from Worcester had non-toxic goitre.

The table shows the results of the antibody studies. Only two of the patients from Pisa and Cagliari, both euthyroid with non-toxic goitres, had detectable antithyroid antibodies before beginning treatment with amiodarone and continued to have detectable antibodies (antimicrosomal only) while receiving amiodarone. One additional patient had detectable antimicrosomal antibodies (1:400) on day 86 of treatment but was subsequently found to have a negative titre on day 144. Another patient, who had negative titres of antibodies and had received treatment with radioactive iodine for diffuse toxic goitre three years previously, developed hypothyroidism after 119 days of treatment. One other patient developed hyperthyroidism after 2.5 years of treatment with amiodarone. In this patient antibodies, obtained 15 times during and after treatment, were detectable (antimicrosomal 1:100) only twice after amiodarone was stopped. In 29 of the 31 patients thyroid dysfunction did not occur.

Four of the 16 patients from Worcester had detectable antimicrosomal antibodies before treatment with amiodarone. Two of the four patients who had detectable antimicrosomal antibodies (1:100) before amiodarone treatment had negative antibody titres on days 191 and 225 of treatment, respectively. Though two patients developed small non-toxic goitres while taking amiodarone, none developed thyroid dysfunction or antibodies.

Twenty patients from Pisa and Cagliari were evaluated one to 35 months after withdrawing amiodarone. Two patients had detectable antibodies during this time, one of whom is described above. The second patient had detectable antimicrosomal antibodies (1:100) 660 days after stopping amiodarone treatment but had no detectable antibodies on two subsequent occasions.