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Temporary Urinary Incontinence in the Acute Psychiatric Patient Without Delirium or Dementia

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In a prospective study of the 295 admissions in one year to an acute psychiatric ward, 14 subjects without delirium or dementia were found to have developed temporary urinary incontinence. When compared with matched controls ($n=56$) the incontinent patients were found to be suffering from psychosis ($P<0.0002$) and to have a history of childhood enuresis ($P<0.01$). Compared with psychotic controls ($n=22$), the incontinent patients were older ($P<0.05$), they had been exposed to a greater variety of treatments ($P<0.01$), and they had received more thioridazine ($P<0.04$).

It is not a rare clinical observation that psychiatric patients without delirium or dementia may exhibit episodes of urinary incontinence during the acute stage of their condition. The symptom has a good prognosis. Clinicians tend to explain this temporary disorder of micturition in terms of disturbed and disinhibited behaviour, stupor, psychotic disorientation, aggression or psychodynamic regression. Although of some relevance, it is unlikely that these factors are more important than variables such as central neurotransmitter dysfunction (Ambrosini, 1984), medication (Van Patten *et al*, 1973; Nurnberg & Ambrosini, 1979) and medical history.

This paper reports a study designed to identify the clinical characteristics of acute psychiatric patients not affected by delirium or dementia who develop temporary urinary incontinence during the acute phase of their illness.

Method

This prospective study was carried out in a 30-bed general admission ward in Fulbourn Hospital, Cambridge, with a catchment population of about 125 000. There were 295 admissions during the period covered by the study (1 January 1984–31 December 1984).

Patients who met the following entry criteria were selected for the incontinent sample:

1. At least three episodes (diurnal or nocturnal) of urinary incontinence, defined as 'involuntary loss of urine constituting a social or hygienic problem' (Isaacs & Walkey, 1964)
2. The three episodes to have occurred within a period of no more than 48 hours
3. Absence of acute confusional state or dementia (ICD9)

A control sample of 56 patients was selected from the total cohort ($n=295$). As soon as a patient met the criteria for urinary incontinence, four other patients were chosen as his/her controls from amongst fellow patients, according to the following criteria:

1. No clinical evidence of acute confusional state or dementia
2. Admission date no more than one week before or after that of the incontinent patient

If more than the needed number met the criteria, the four control patients were selected randomly.

A specially designed data sheet was completed for both the incontinent patient and his/her four controls. The form collected data on five areas: general, medical history, psychopathology, ICD9 diagnosis (as made by the consultant in charge), and treatment. Statistical analysis of the data was carried out by means of the Unistat Software Package for CPN.

Results

Fourteen patients (4.74%) met the inclusion criteria for urinary incontinence. There was no difference in age, sex, presence of urinary disease, parity, orthostatic hypotension or previous history of adult incontinence between the experimental group and the control group of 56 patients (Table I). However, the incontinent sample showed a higher proportion of patients with a history of childhood enuresis ($P<0.01$: Table I) and a higher proportion suffering from psychotic illness ($P<0.0002$: Table II).

There were 22 psychotic patients amongst the 56 controls, and this psychotic sub-group was compared with the incontinent set. No differences were found between the two groups in terms of family history of psychiatric illness, number of previous episodes (Point biserial correlation coefficient, $rpb=0.0012$; NS), duration of present episode ($rpb=0.0091$; NS), distribution of diagnoses (Table II), or symptomatology (Table III). However, the incontinent patients were significantly older ($rpb=0.28$; $t=1.75$; $P<0.05$) and had received a greater variety of treatment

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TABLE I
Age, sex and medical history of 14 temporarily incontinent patients compared with 56 control patients

	Incontinent (n=14)	*Controls (n=56)*	χ^2
Age (mean ± S.D.)	51 ± 9	42 ± 14.2	NS
Sex	8M/6F	37M/19F	NS
Urinary disease	3	2	NS
Diabetes mellitus	1	0	NS
Heart disease	2	3	NS
Abdominal surgery	2	3	NS
Cerebrovascular accident	2	2	NS
Parity (mean ± S.D.)	1 ± 1.2([1])	1.5 ± 1.3([2])	NS (*t*)
Childhood enuresis	5	4	5.8*
Previous incontinence	2	1	NS

*$P < 0.01$.
[1]6 incontinent women had had children.
[2]14 of the female controls had had children.

TABLE II
ICD9 diagnosis of 14 temporarily incontinent patients compared with those of control patients

ICD9 diagnosis and code	*Incontinent (n=14)*	*Controls*	χ^2
Psychotic disorders	*14*	*22*	*14.18***
Paranoid schizophrenia (295.3)	2	5	NS
Manic–depressive (manic phase) (296.2)	5	8	NS
Manic–depressive (depressive phase) (296.3)	6	9	NS
Alcoholic hallucinosis (291.3)	1	0	NS
Non-psychotic disorders	*0*	*34*	
Personality disorder (301.5/301.7)	0	11	
Hysteria (300.1)	0	1	
Neurotic depression (300.4)	0	12	
Phobic state (300.2)	0	4	
Other conditions[1]	0	6	

**$P < 0.002$.
[1]Alcoholism ($n = 3$); chronic pain ($n = 2$); abnormal grief reaction ($n = 1$).

($P < 0.01$: Table IV). More of them had received thioridazine ($P < 0.04$: Table V) and the dosages prescribed tended to be larger ($t = 2.155$; just short of $P < 0.05$).

Discussion

The entry threshold for urinary incontinence used in this study was sufficiently high not to allow into the sample patients with occasional urinary loss. None of the 14 incontinent patients were suffering from delirium or dementia (each patient was examined by at least two consultant psychiatrists). Three were found to be disorientated during the acute stage of their condition (two depressive and one manic); there was no evidence of organic aetiology, however, and the symptom cleared up after treatment. On discharge all subjects had recovered from both the psychiatric episode and the urinary incontinence.

The first conclusion of clinical value is that psychotic patients are more prone to developing temporary urinary incontinence than non-psychotic

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TABLE III

Clinical features of 14 incontinent patients (all psychotic) compared with those of 22 psychotic control patients

	Incontinent (n = 14)	*Psychotic controls (n = 22)*	χ^2
Disorientation	3	0	NS
Hallucinations	4	2	NS
Delusions	9	9	NS
Depression	8	9	NS
Retardation	4	3	NS
Suicidal ideation	8	6	NS
Agitation	6	7	NS
Stupor	2	1	NS
Disinhibition	3	5	NS
Hyperactivity	6	9	NS
Acting out	4	3	NS
Drowsiness	6	8	NS
Duration of illness (days)[1]	27 ± 6.1	28 ± 11.3	NS (*t*)
No. of past episodes[1]	2.36 ± 2.2	2.20 ± 2.71	NS (*t*)

[1]Mean ± S.D.

TABLE IV

Mean dosage of ECT (number of treatments) and drugs (dose in milligrams) for 14 incontinent patients (all psychotic) compared with 22 psychotic controls. TTS (Total Treatment Score) is the sum of the patient's individual treatment scores (1 point for each drug or ECT)

	Incontinent (n = 14)	*Psychotic controls (n = 22)*	*t*
Chlorpromazine	1650 (SD = 1222)	1500 (SD = 828)	NS
Thioridazine	690 (SD = 292)	337 (SD = 159)	NS
Haloperidol	114 (SD = 13)	80 (SD = 70)	NS
Tricyclic A-D	375 (SD = 129)	325 (SD = 172)	NS
Phenelzine	150 (SD = 25)	97 (SD = 53)	NS
ECT	4 (SD = 1.4)	3 (SD = 1)	NS
Lithium	3400 (SD = 309)	3000 (SD = 489)	NS
Benzodiazepines	64 (SD = 32)	48 (SD = 24)	NS
TTS	2.71 (SD = 0.91)	1.77 (SD = 0.86)	3.092*

*$P < 0.01$.

patients; the second is that the type of psychosis does not seem to be a relevant factor; the third is that accumulation of treatments (irrespective of their nature) seems to be related to the appearance of urinary incontinence. However, the conclusion that there is a cause-effect relationship between an accumulation of treatments and incontinence, although tempting, cannot be drawn from our data. The alternative hypothesis is that such an accumulation simply reflects the severity of the psychotic illness and that the latter is ultimately responsible for the micturition disorder. It must be remarked,

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TABLE V

Past and current treatment of 14 incontinent patients (all psychotic) compared with that of 22 psychotic controls: figures indicate number of patients receiving each treatment

Treatment	*Incontinent (n=14)*	*Psychotic controls (n=22)*	χ^2
Chlorpromazine	6	5	NS
Thioridazine	6	2	3.85*
Haloperidol	5	8	NS
Tricyclic A-D	3	7	NS
Phenelzine	3	2	NS
ECT	2	3	NS
Lithium	6	7	NS
Benzodiazepines	7	5	NS

*$P<0.04$.

however, that no difference was found between the incontinent group and the control sample in terms of family history of psychiatric illness ($\chi^2=1.40$; NS), number of previous episodes ($rpb=0.00129$; NS), duration of current admission ($rpb=0.00919$; NS) or symptomatology.

Thioridazine had been prescribed more often to the incontinent sample ($P<0.04$). An association between this neuroleptic and an increased incidence of urinary incontinence in psychiatric patients has been reported anecdotally (Ananth *et al*, 1971; Renshaw, 1971; Crittenden, 1972) but no prospective study of this association seems to have been published.

It has recently been suggested that the central control of micturition depends upon a noradrenergic–dopaminergic balance, with dopamine agonists increasing control and antagonists increasing the likelihood of incontinence in predisposed individuals (Ambrosini, 1984). Why thioridazine should have a more marked effect than other neuroleptics is unclear.

Developmental delays in the acquisition of control of micturition have been mentioned as a major vulnerability factor; it is therefore of some interest that the present study found that a significantly higher number of incontinent patients had been enuretic during childhood. Orthostatic hypotension has also been mentioned as a concomitant symptom of urinary incontinence but our study showed no difference in this regard between the incontinent and the control groups.

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References

AMBROSINI, P. J. (1984) A pharmacological paradigm for urinary incontinence and enuresis. *Journal of Clinical Psychopharmacology*, **4**, 247–253.

ANANTH, J. V., BAN, T. A. & LEHMANN, H. E. (1971) Urinary incontinence associated with thioridazine administration. *Canadian Medical Association Journal*, **104**, 326–328.

CRITTENDEN, F. M. (1972) Thioridazine incontinence. *Journal of the American Medical Association*, **219**, 217.

ISAACS, B. & WALKEY, D. A. (1964) A survey of incontinence in elderly hospital patients. *Gerontologia Clinica*, **6**, 367–75.

NURNBERG, H. G. & AMBROSINI, P. J. (1979) Urinary incontinence in patients receiving neuroleptics. *Journal of Clinical Psychology*, **40**, 271–274.

RENSHAW, D. C. (1971) Thioridazine and incontinence. *Journal of the American Medical Association*, **218**, 738.

VAN PATTEN, T., MALKIN, M. D. & WEISS, M. S. (1973) Phenothiazine-induced stress incontinence. *Journal of Urology*, **109**, 625–626.

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