

**Psychological and functional disorder co-morbidities in idiopathic
urinary retention:**

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Abstract

Aims:

Urinary retention occurring in young women is often poorly understood and a cause may not be found in a majority of cases despite an extensive search for urological and neurological causes. Different psychological co-morbidities and functional neurological symptom disorders (FNDs) have been reported in women with idiopathic urinary retention, however these have been poorly explored.

Methods: At the International Consultation on Incontinence Research Society (ICI-RS) meeting in 2019, a panel of clinicians generated a proposal to explore the relationship between psychological co-morbidities, functional disorders and urinary retention in women with idiopathic chronic urinary retention.

Results: Psychological co-morbidities such as depression and anxiety, and functional disorders such as fibromyalgia, irritable bowel syndrome and FNDs eg. leg weakness, have been reported in women with idiopathic urinary retention, however these co-morbidities have been assessed using non-standardised assessments. Individuals react differently to physical and emotional stressors and experimental models have demonstrated a relationship between the stress response and developing urinary retention.

Trauma, particularly sexual trauma, may be a shared risk factor for developing psychological co-morbidities and urinary retention. Children with voiding postponement often suffer from psychological co-morbidities and behavioral disturbances such as Oppositional Defiant Disorder, however there is no evidence to suggest that this progresses to voiding dysfunction/ urinary retention in adulthood. “Psychogenic urinary retention” has been described in the urology and psychiatry literature in the past, and anecdotal cases of successful voiding following psychotherapy have been reported, though the true pathophysiology of this entity is uncertain.

Conclusion: In a cohort of women with chronic idiopathic urinary retention, it is possible that functional disorder co-morbidities may be contributing to the pathogenesis of urinary retention. Idiopathic urinary retention may be viewed in terms of a disorder of “bladder-brain interaction”, and further research is needed to explore possible causal associations with functional disorder co-morbidities.

Introduction

Urinary retention occurring in young women is poorly understood. The urological assessment is useful in clinical phenotyping, to establish whether urinary retention is due to detrusor underactivity and/or bladder outlet obstruction (BOO) (1). There are several causes for urinary retention, however an aetiology may not be found despite an extensive urological and neurological assessment (2) (3). In women with idiopathic chronic urinary retention, outcomes following treatment with sacral neuromodulation are mixed, however women with evidence of a functional BOO, specially with evidence for a primary disorder of external urethral sphincter relaxation through urethral pressure profilometry and/or urethral sphincter EMG, have shown a more favourable response to treatment (4) (5).

A number of studies have suggested the co-occurrence of different psychological and functional disorders in women with idiopathic chronic urinary retention (6) (7) (4) (8) (9) (10). From the available evidence, the commonest are affective disorders such as depression and anxiety, and functional disorders such as fibromyalgia, irritable bowel syndrome functional neurological symptom disorders (FNDs) such as limb weakness

and non-epileptic attacks (9) (10). Historically, urological and psychological management have not been joined-up, and therefore the co-existence of urinary retention and psychological/ functional disorder co-morbidities has been poorly acknowledged and researched. The aim of this paper is to highlight gaps in the understanding of these co-morbidities, and to explore the nature of their relationship with urinary retention.

Methods

At the International Consultation on Incontinence Research Society (ICI-RS) held in Bristol, United Kingdom in 2019, a panel of clinicians participated in a discussion on psychological co-morbidities and functional disorders reported in women with idiopathic chronic urinary retention. The panellists reviewed the different co-morbidities reported in the literature, how these were assessed, risk factors for developing these co-morbidities and outcomes following treatments. The panel also explored possible causal associations between these co-morbidities and urinary retention. From the discussions at the meeting and subsequent e-mail iterations, the panel proposed priority areas for further research.

Psychological co-morbidities

The two main classification systems of mental and behavioural disorders are the International Classification of Diseases ICD-11 (soon to be ICD-11) published by the World Health Organisation which has a chapter on mental and behavioural disorders, and the Diagnostic and Statistical Manual (DSM-5) published by the American Psychiatric Association (DSM, 2013). Whilst the DSM is the most widely-used diagnostic system in the United States, the ICD is used more widely in Europe and other regions of the world. Mental, psychological and behavioural disorders reported in women with idiopathic urinary retention are collectively known as “*psychological co-morbidities*” in this paper.

Functional neurological symptom disorders

FNDs are characterised by the presence of altered voluntary motor or sensory function which are incompatible with recognized neurological or medical conditions. These include limb weakness, sensory disturbances, nonepileptic attacks and memory impairment, which cannot be explained by a neurological or other medical condition, and can cause a significant degree of distress warranting medical evaluation. The term “conversion disorder” is retained under DSM-5, however psychological stressors may not be readily identifiable in all cases (14). Individuals with FNDs do not

falsify physical or psychological signs and therefore this condition is different from factitious disorders or malingering. Functional neurological symptom disorders have a reported incidence of 4 to 12 per 100000 population per year and a prevalence of 50 per 100000 population based on a community registry (11) (12) (13) and more prevalent in females(11).

Assessment

In recent years, a number of screening questionnaires have become available to screen for different co-morbidities. Many of these are self-reported and therefore can be completed by the patient. When assessing psychological co-morbidities in the medical setting, it is common to screen first for affective disorders (mood disorders), particularly depression and anxiety. Screening tools will usually have cut-off scores, suggesting a threshold score for 'caseness' and also an indication of severity of anxiety or depression. Other psychological co-morbidities should however be screened as well. In the United Kingdom, the Improving Access to Psychological Therapies (IAPT) programme has transformed treatment of psychological disorders and provides evidence based treatments for people with anxiety and depression, implementing National Institute of Clinical Excellence (NICE) guidelines. The brief screening tools approved by IAPT

for case identification are listed in Table 1. A broadband questionnaire recommended for children is the Child Behavior Checklist (Achenbach..). A formal assessment of mental health difficulties includes a semi-structured clinical interview carried out by a qualified mental health professional, accompanied by mental health and physical examination and psychological testing. Structured interview schedules have been developed with the goal of improving diagnostic reliability. FNDs can be screened using a preliminary questionnaire however has limited sensitivity and specificity except for diagnosing “blackouts” (15).

Prevalence of co-morbidities in women with urinary retention

The burden of psychological/ functional co-morbidities amongst women with idiopathic urinary retention is difficult to estimate , however from the evidence available prevalence of affective symptoms appears to be greater amongst OAB patients compared to urinary retention (9). The few studies that have evaluated psychological co-morbidities in women with idiopathic urinary retention (Table X) have focused predominantly on affective disorders, and the use of different screening questionnaires precludes comparison between studies. These studies suggest the occurrence of

different co-morbidities, namely depression requiring hospitalisation, “hysteria”, depression, risk of somatisation, definitive somatoform disorder and unspecified psychiatric disorders (6) (7) (4) (8). Using the Patient Health Questionnaire, somatization (n = 22) and depression (n = 15) were the commonest co-morbidities identified in a cohort of women with urinary retention assessed at the time of undergoing sacral neuromodulation (4). In a retrospective study of 53 women across different centres in Belgium undergoing sacral neuromodulation, 38 women were in urinary retention and “hysteria” (n=2) and depression (n=6) were reported (6). The prevalence of other behavioural disorders such as phobias and PTSD which are likely to have a relationship with LUT functions is unknown.

The prevalence of functional disorders is likely to be high, however these are under-recognised, partly due to the absence of a sufficiently robust screening tool (15). In a cohort of 61 women with urinary retention where a primary disorder of urethral sphincter relaxation (sometimes referred to as Fowler’s syndrome) was demonstrated, 24% had medically unexplained/“functional” symptoms which included loss of consciousness, limb weakness, sensory disturbance and memory impairment.

XXX Furthermore, almost a third (31%) had psychological co-morbidities

such as anxiety/depression or obsessive compulsive symptoms (10).

Nearly 50% of women suffered from unexplained chronic abdomino-pelvic, back, leg or widespread pain (10) and use of opiate medications, which may interfere with LUT functions and cause urinary retention, was found to be common (2). table X, outlines the reported c

Vulnerability to developing psychological co-morbidities

In pelvic disorders with a substantial functional component, such as bladder pain syndrome, chronic pelvic pain syndrome and overactive bladder (OAB) it is hypothesised that an imbalance between resilience and vulnerability could lead to a sensitized defence reaction and alarm falsification in reaction to multiple cumulative threats. These threats could either be physical, such as an infection, or emotional such as childhood adversity or emotional or sexual abuse (16). The balance between vulnerability and resilience is explained by a 3-hit concept of genetic predisposition, early-life environment and later-life environment (17). Therefore, stress in early life can influence brain plasticity with lasting effects, and epigenetic factors in combination with genetic predisposition can influence vulnerability or resilience to stress (18). For example, personality traits might predispose to vulnerability to functional urological

symptoms. “Neuroticism”, a personality trait associated with a bias towards negative emotions, is associated with OAB (19). The importance of vulnerability was underscored by a large population-based study where urinary incontinence was significantly associated with psychological problems with feelings of vulnerability (20). To conclude, there is a difference to how people react to different kind of physical and emotional stressors.

Relationship between stress and urinary retention- biological models

Chronic stress response can lead to changes in visceral organs. Studies in mice have shown that mild social stress led to OAB behaviour(21) while prolonged exposure to stress resulted in an increase in intermicturition interval and voided volume, which are indicative of bladder underactivity. These functional changes were accompanied by increased collagen deposition and bladder wall remodeling (22). Bladder dysfunction therefore progresses from overactivity to underactivity as the intensity and duration of social stress increases, at least in experimental animal models (23). Functional changes of voiding dysfunction may persist even after removal of the stressor (24).

In male rats exposed to social stress, corticotropin releasing factor (CRF) receptor expression was upregulated in the Barrington's nucleus (25). In the hypothalamic–pituitary–adrenal (HPA) axis, CRF, a neuropeptide secreted by the paraventricular nucleus of the hypothalamus, is involved in the stress response by stimulating the pituitary release of ACTH which has inhibitory effects on the micturition pathway (26). In humans, urinary retention has been reported to occur following social stressors such as the loss of a loved one or a recent divorce (27), and social stress-induced voiding dysfunction seen in animal models could provide a biological explanation for this observation.

Sexual Trauma- shared risk factor for developing psychological comorbidities and urinary retention?

Victims of rape or sexual abuse are prone to develop post-traumatic stress disorder (PTSD) and other psychological disorders as anxiety, depression and psychosis (28) (29) (30). The symptoms can occur immediately or with delayed onset. Additionally, occurrence of these disorders is more likely to be associated with a reduction in quality of life, increase in morbid obesity, marital instability, high use of medical care and somatic symptoms such as gastrointestinal symptoms and recurrent headache (31).

Moreover, patients who were sexually abused in childhood may also present with genitourinary symptoms. Zhao et al. recently reported an association between bullying and childhood lower urinary tract (LUT) symptoms. This is also true for adults who have experienced sexual abuse, where storage symptoms such as nocturia, urinary frequency and urgency have been reported (32). The prevalence of voiding difficulties/ urinary retention amongst victims of sexual abuse has been poorly explored and Williams et al. (33) has reported a case of episodic urinary retention in a woman who experienced recurrent sexual trauma. Other pelvic symptoms reported by individuals who have experienced abuse include pelvic pain (34), dyspareunia and symptoms of prolapse (35) (36).

Voiding postponement in childhood –a precursor to developing urinary retention in adults?

Voiding postponement (VP) is defined as a habitual postponement of micturition by using holding maneuvers (37) and synonyms include 'micturition deferral', 'volitional delaying of voiding' and 'willful infrequent voiding' (38) (39). Typical symptoms are low micturition frequency, feeling of urgency and possibly incontinence from a full bladder. Concomitantly,

children with VP often suffer from psychological co-morbidities or behavioral disturbances such as Oppositional Defiant Disorder (ODD). VP can manifest in four different ways: 1. sporadically, as a useful coping mechanism when voiding is not possible or inappropriate; 2. as a habitual symptom without daytime urinary incontinence (DUI) or nocturnal enuresis (NE); 3. in association with NE only, and finally, 4. combined with DUI or DUI and NE, i.e. VP incontinence (40).

Voiding postponement can develop as a learned behavior, leading to short-term positive effects of not needing to void in a specific social situation, however can persist despite negative consequences such as incontinence. This habit is often maintained for convenience, because of the fear of missing out (e.g. in play), due to unhygienic toilets in school, as a component of ODD. Some children develop VP without precursors, however the sequence from OAB, to VP, due to increased activation of pelvic floor muscles, to dysfunctional voiding and finally to underactive bladder is possible. Typical signs of VP are abnormal uroflow curves (plateau, staccato, intermittent), non-relaxed pelvic floor EMG activity, increased postvoid residual urine, increased maximal voided volumes,

constipation, UTI's, dysfunctional family dynamics, lower quality of life and externalization of behavioural disorders.

The prevalence of ODD is 2-5%. Typical symptoms are a persistent angry and irritable mood, argumentative, defiant behavior and vindictiveness. The treatment consists of counselling, parent training, cognitive-behavioral therapy and school-based interventions. There is usually no indication for medication. The mainstay of treatment of VP is timed voiding (7 times/day) with a continuous documentation using charts and positive reinforcement. Timer watches (or mobile phones) can be useful adjuncts to serve as reminders to void regularly. In refractory cases, outpatient training programs have been shown to be efficient.

Voiding postponement affects 13.7% of adolescents (41) and occurs more likely if bladder control had been delayed or if daytime urinary incontinence, has been present in childhood. No studies have assessed the natural history of VP in boys and girls through adolescence to adulthood.

Discussion

“Psychogenic urinary retention”- terminology from a bygone era?

Urology literature

Neuro-urology textbooks of more than 3 decades ago defined the umbrella term “psychogenic urinary dysfunction” (PUD) to cover not only urinary retention, but also any difficulty in voiding, paruresis and even overactive bladder (OAB) based on a diagnosis of exclusion of all urologic, gynecologic, and neurologic causes (42) {Siroky, 1988 #1744}. Manifest psychological features accompanying the LUTD were required to meet the definition of PUD GG., 1988 #1743} {Siroky, 1988 #1744} and PUD was considered to be a psychosomatic disorder affecting the lower urinary tract function GG., 1988 #1743} {Siroky, 1988 #1744}. Nowadays, using the term PUD is unhelpful as it represents a heterogeneous group of patients with functional bladder disorders covering the spectrum from OAB to bladder emptying problems. Moreover, investigations have become better refined to recognize a biological basis for disease. For example, some women with urinary retention may demonstrate a characteristic pattern of activity in urethral sphincter electromyography, and functional MRI studies suggest that brain responses to bladder filling are abnormal, which correlated with maximum urethral closure pressure (43).

Very few studies have evaluated the changes in psychological co-morbidities following urological interventions for urinary retention. Only

affective symptoms have been studied and in a cohort of patients undergoing SNM, significant improvements in voiding symptoms and quality of life for idiopathic urinary retention was not accompanied with improvements in depression/anxiety symptoms according to the HADS symptom score, in contrast to patient with OAB where improvements were seen in patients with successful outcomes (5). In an Italian registry study, most of the treatment failures belonged to a group with psychological disorders such as hysteria, depression and hypochondria, suggesting a worse outcome in this group (7).

Psychiatry literature

In the past, a psychological cause for urinary retention was considered acceptable, and **table 2** traces this history through previous versions of DSM. This older literature documented a variety of predisposing and precipitating factors including major stressful life-events (44). A full review of the history of how psychological factors were understood to play a role in the aetiology of urinary retention is complicated by changes in diagnostic criteria and labelling, e.g. 'psychogenic urinary retention', 'hysteria', 'somatisation', conversion disorder, medically unexplained symptoms.

Reports of “successful treatment” of urinary retention by psychotherapy can in fact be found in the historical literature on ‘Psychogenic urinary retention’ (Table 3). In most cases, a history of conflict or trauma was reported and authors claimed that psychotherapy was found to be effective in relieving retention, as well as improving other areas e.g. family and/or marital relationships.

Modern day classifications in urology and psychiatry practice however fail to mention psychogenic urinary retention. The true pathophysiology of this entity is uncertain and the availability of advanced urological and neurological diagnostic tests in the modern day (ICIRS 2017) have helped to uncover a biological cause for urinary retention in a substantial number of patients who, in the past, would have been labelled to have “idiopathic urinary retention” (ICIRS 2017).

Co-existence of idiopathic urinary retention and functional disorders- shared association?

Despite the advances in diagnostic testing, the cause for urinary retention is found in only 40% of women (2). The search for putative organic mechanisms continues, however the higher prevalence of functional

disorders in women with idiopathic urinary retention compared to the general population is unlikely to be co-incidental. A number of functional symptoms are known to co-exist with other LUT disorders such as OAB, and Bladder Pain Syndrome (46) (47), as well as affective symptoms (45). Moreover, functional symptoms are known to co-exist with disorders of other visceral organs such as irritable bowel syndrome (48).

It is tempting to speculate that in some patients urinary retention may reflect a disorder of bladder-brain interaction. Patients with functional motor weakness experience an unintentional involuntary loss of function manifesting as limb weakness and it remains speculative whether a loss of visceral organ functions may also occur, for example a loss of LUT functions which manifests as urinary retention. It is noteworthy that amongst patients with functional movement disorders, urinary retention is the commonest LUT dysfunction experienced in functional dystonias (50). LUT functions are controlled centrally by an elaborate neuronal network distributed across different cortical regions, and bladder storage and emptying are learned behaviours (49). The ventromedial prefrontal cortex (PFC) is a key limbic structure that plays an important role in LUT control (53), as it is involved in decision making in an emotional and social context

(54). The same region is also implicated as a relay centre between emotional regulation and complex body function control. Abnormalities in this region have been demonstrated in functional brain imaging studies of patients with functional disorders, suggesting that these patients might have an abnormal affective representation of self-relevant information encoded in this region (51) (52). Whether alterations in medial PFC activity may serve as a common biological abnormality for FNDs and urinary retention due to a central failure to initiate detrusor contractions (55) requires to be further explored.

There are a number of gaps in our understanding of idiopathic urinary retention in women, and with the availability of advanced urological and neurological diagnostic tools for investigating the cause for urinary retention, as well as an enhanced understanding of behavioural disorders and FNDs, further research is needed to explore possible causal associations. Multicentric cross-sectional and longitudinal studies of women with idiopathic urinary retention undergoing a comprehensive assessment of psychological and functional co-morbidities are needed to answer the following research questions:

1. What is the prevalence of different psychological co-morbidities and FNDs in women with idiopathic urinary retention. How does this differ from other idiopathic LUT disorders such as OAB?
2. What is the temporal profile of developing psychological co-morbidities and FNDs in the context of developing urinary retention?
3. Which is the optimal set of tools that should be used to screen for psychological co-morbidities amongst women in Urinary retention?
4. What are the factors that protect women with urinary retention from developing psychological disorders? Conversely, are there factors that protect women psychological disorders from developing urinary retention?
5. What is the relationship between chronic stress response and developing urinary retention in humans?
6. Is voiding postponement in the context of oppositional defiance disorder in childhood a risk factor for developing urinary retention in later life?
7. Can physical or sexual abuse trigger a stress response culminating in urinary retention?

8. Can urinary retention be a manifestation of an FND in women with pre-existing FNDs?
9. In women with idiopathic urinary retention undergoing sacral neuromodulation-
 - Do the outcomes differ in women who have psychological and functional co-morbidities?
 - Do psychological and functional co-morbidities improve in women with successful urological outcomes?
10. In women with idiopathic urinary retention who are undergoing behavioural therapies for co-existing psychological and functional co-morbidities, do any therapies help ameliorate voiding dysfunction?

Conclusion

It is possible that biological end organ changes and functional nervous system changes may co-exist in women with chronic idiopathic urinary retention. Viewing urinary retention in terms of a disorder of bladder-brain interaction, a possible causal association between urinary retention and functional disorder co-morbidities needs to be further explored.

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Tables

Table 1. Commonly-used screening tools for psychological / psychiatric morbidity in adults (adapted from The Improving Access to Psychological therapies (IAPT) Manual. The National Collaborating Centre for Mental Health. First published June 2018.)

Measures / questionnaire	Domains covered	Items
PHQ-9 (Kroenke et al, 2001)	Depression	9 items.
GAD-7 (Spitzer et al, 2006)	Anxiety	7 items.
Social Phobia Inventory (SPIN) (Connor et al, 2000)	Social phobia	17 items.

Impact of Events Scale-Revised (IES- R) (Weiss, 2007)	PTSD	22 items
Agoraphobia-Mobility Inventory (Chambless, 1985)	Agoraphobia	Qualitative (places avoided)
Obsessive- Compulsive Inventory (OCI) (Foa et al, 1998)	OCD	42 items.
Panic Disorder Severity Scale (PDSS) (Shear et al, 1997)	Panic disorder	7 items.
Patient Health Questionnaire	Physical symptoms	15 items.

(Physical symptoms) (PHQ-15) (Kroenke et al, 2002)	(somatic symptoms)	
Francis Irritable Bowel Scale (Francis et al, 1997)	IBS	5 items.
The Chalder Fatigue Scale (Celia & Chalder, 2010)	Chronic Fatigue Syndrome	11 items.
Work & Social Adjustment Scale (WASA) (Mundt et al, 2002)	Impairment in daily functioning	5 items

Table 2. “Urinary Retention” appearing in earlier versions of the Diagnostic and Statistical Manual (DSM)

	Somatization disorders	Conversion Disorders
DSM-I (APA,1952)	<p>‘Psychophysiologic Autonomic and Visceral Disorders’. Further categorised as ‘Somatisation reactions’.</p> <p>Example: ‘Psychophysiologic genitourinary reaction’.</p> <p>“... in which emotional factors play a causative role’.</p> <p>Urinary retention not specifically mentioned</p>	<p>‘Conversion reaction’.</p> <p>Urinary retention not specifically mentioned</p>
DSM-II (APA, 1968)	<p>Psychophysiologic genitourinary disorder</p>	<p>Hysterical neurosis, conversion type</p>

	<p>“... in which emotional factors play a causative role’.</p> <p>Urinary retention not specifically mentioned</p>	Urinary retention not specifically mentioned
<p>DSM-III-R (APA, 1987)</p>	<p>Somatisation Disorder.</p> <p>Symptom Groups include group of ‘Conversion or pseudoneurologic symptoms’.</p> <p>UR is specifically mentioned as an example of ‘conversion or pseudoneurologic symptoms’</p>	<p>Conversion Disorder (or hysterical neurosis, conversion type).</p> <p><i>Conversion disorder distinguished from conversion symptoms (part of another disorder e.g. somatisation disorder).</i></p> <p>Urinary retention not specifically mentioned.</p>
<p>DSM-IV-TR (APA, 2000)</p>	<p>‘Somatisation disorder’.</p> <p>UR is specifically mentioned as an example of a ‘pseudoneurological symptom’ .</p>	<p>‘Conversion disorder’.</p> <p>Urinary retention is specifically mentioned as an example of a</p>

		symptom of conversion disorder
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Table 3. Historical cases of urinary retention treated with therapies targeting presumed psychological mechanisms

Reference	Summary	Treatment + outcome
Williams and Johnson, 1956	Case report. Female. Urinary retention caused by 'emotional conflicts' after emotional and sexual abuse by the patient's Aunt and Uncle who had become her step-parents	Psychotherapy. Patient enabled to express anger. Outcome: successful
Chapman, 1959	Case study. Female. Childhood trauma. Patient	Psychotherapy. Patient became

	unassertive and exploited by family.	more confident and assertive. Outcome: successful.
Larson et al, 1963	Paper refers to 37 patients with Urinary retention. A single case study within this paper. Female. Urinary retention plus other symptoms. Diagnosis: schizo-affective disorder.	Psychotherapy. Patient enabled to express her hate and rage towards the therapist or other male physicians. Outcome: successful. Urinary retention ceased although some other symptoms remained.
Wahl & Golden, 1963	6 cases of Urinary retention (5 female, 1 male). Multiple	Psychotherapy and psychoeducation Outcome: successful.

	'repressed, genital sexual conflicts).	
Cooper, 1965	Case report. Female.	Treatment: psychological: reassurance, psychoeducation and the injection of carbachol followed on subsequent occasions by injection of sterile water was presented as an example of classical 'Pavlovian' conditioning. Outcome: successful. Patient free of Urinary retention at 4 months follow-up,

Barnard et al, 1966	Case report. Female.	Treatment: electrical stimulus to her legs plus a programme 'of verbal and non-verbal reinforcement' the elements of which appear to have been a form of assertiveness training. Outcome: successful. Patient free of Urinary retention and less dependent, less anxious and more assertive
Barrett, 1978	12 cases of Urinary retention. After screening 9/12 sent	Bladder training, inermittent self-catheterisation and,

	for psychiatric evaluation.	when indicated, additional 'psychiatric support'. Outcome: At discharge: 10 patients were voiding normally.
Montague & Jones, 1979	6 patients	Management and treatment included biofeedback, behaviour therapy, individual psychotherapy, group therapy, couples therapy, biofeedback-monitored relaxation training, introduction of 'imagery' during

		<p>periods of deep relaxation.</p> <p>Outcome: successful</p>
Bird, 1980	2 cases. Both female	<p>Analytical psychotherapy. Both patients enabled to express 'unacceptable aggressive rage'.</p> <p>Outcome: successful</p>
Wheeler et al, 1990	Of 68 females with Urinary retention, 15 were reported to have had a psychological	<p>Type of psychotherapy not reported.</p> <p>Outcomes: not reported</p>

	history and 12 patients underwent 'psychologic therapy'.	
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