

Intermittent self catheterization for patients with urinary incontinence or difficulty emptying the bladder

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SUMMARY. *Urinary incontinence, difficulty voiding and recurrent urinary tract infections are common in general practice. In patients with multiple sclerosis, spina bifida, intervertebral disc lesions, spinal injuries or tumours, the symptoms may be associated with a high residual volume of urine owing to a neuropathic bladder. Similar complaints may occur in elderly people or in women with gynaecological problems owing to atonic urinary retention. Provided that a significant residual volume of urine is found on abdominal examination, ultrasound, x-ray or catheterization, both groups of patients may be helped by intermittent self catheterization. Intermittent self catheterization is a safe and simple technique. By catheterizing themselves between four and six times daily patients can gain control over their bladders. Abandoning indwelling catheters or bulky external appliances does much for a patient's morale and self esteem. In addition, since the bladder is being drained effectively, urinary tract infections cease to be a problem and the kidneys are safeguarded. Severe disability is not a contraindication since patients in wheelchairs have mastered the technique despite paraplegia, an anaesthetic perineum, spinal deformity, intention tremor, mental handicap, old age or blindness. Patients should be referred to urologists for a trial of intermittent self catheterization. If unsuccessful or unacceptable it can be abandoned with no long term consequences. If it is effective the benefits may be considerable.*

Keywords: *urinary incontinence; catheterization; self care.*

Introduction

'Urinary incontinence is rarely fatal but may cause social death.'¹

INTERMITTENT self catheterization is a safe, simple technique which can transform the lives of people with urinary incontinence or difficulty voiding owing to a neuropathic or atonic bladder. However, many patients who might benefit may not be given the opportunity to try self catheterization either because their doctors are unfamiliar with the method² or because the patients are thought to be too disabled.³

In December 1989 we gave a questionnaire to 55 general practitioners attending postgraduate meetings. Twenty nine members of the group, including four lecturers in general practice, in-

dicated they did not know anything about intermittent self catheterization.

A discussion is therefore presented of the technique in the hope that general practitioners caring for patients with incontinence or voiding dysfunction associated with a neuropathic or atonic bladder may consider specialist referral for assessment for intermittent self catheterization.

Clinical studies

In 1972, Lapidés and colleagues showed that clean intermittent self catheterization was a safe and effective way of managing patients with a neuropathic or atonic bladder.⁴ Since then, the technique has been used in children with incontinence associated with spinal dysraphism, and also in adults. Early results were encouraging.⁵ Withycombe and colleagues studied 23 children aged between two and 16 years with a neuropathic bladder who were treated with intermittent catheterization over a three year period.⁶ The one boy in the study and three of the girls catheterized themselves while the other children were catheterized by a parent or helper at school. Over half of the children were no longer incontinent of urine, making them more socially acceptable and lightening the burden for their mothers. Although all the children had bacteriuria, only four had symptomatic urinary infections. In a later study of 49 children,⁷ upper tract dilatation and early renal failure improved once effective urinary drainage was established by intermittent catheterization.

In 1984, Hunt and colleagues⁸ reported results of 45 women and one man aged between 27 and 86 years who attempted to catheterize themselves. Twenty nine patients mastered the technique after one to three teaching sessions lasting one hour each, resulting in marked improvements in continence and morale and a reduced incidence of infections. Of 16 patients who were followed up from one to 22 years later (mean 3.4 years), only one patient showed slight deterioration in renal function. However, the technique was not appropriate for all patients. Nine patients failed to master the technique, six abandoned the method because they found it too difficult or remained incontinent, and two reserved it for use in acute urinary retention. However, their cases illustrate a major advantage of intermittent self catheterization — that if unsuccessful, unacceptable or no longer needed it can be abandoned with no long term consequences.⁵ No damage has been done and the same options remain available as before.

In a study of 57 adults (55 women and two men) who had been using intermittent self catheterization for up to five years, Murray and colleagues⁹ also observed improvements in morale and self confidence. However, in six patients symptoms were not controlled, and one patient complained of pain on catheterization. They recommended wider use of the technique for women with chronic urinary retention and overflow incontinence. Similarly, Hill and Davies¹⁰ proposed that intermittent self catheterization should be the preferred option for all spinally injured persons with good hand function.

A study by Webb and colleagues in Newcastle¹¹ of 163 patients using intermittent self catheterization found that 156 patients were satisfied or very satisfied with the method. One hundred and seven patients suffered from incontinence at the start

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of the study; continence improved for 101 patients during the study period. They also found that 76 patients who had mastered the technique no longer needed to visit their general practitioner about urinary problems.

In 1990 Wyndaele and Maes reported a detailed follow up of 75 patients who had used intermittent self catheterization for a mean of seven years.¹² Although 22 patients had chronic or recurrent urinary infections, only six showed any deterioration in the upper urinary tract. Complications occurred in 15 patients mainly after five years of intermittent self catheterization. The most frequent complications were in men and included urethritis, urethral stricture, epididymitis and false passage. Three patients developed bladder calculi.

Long term follow up has confirmed the initial optimism.⁵ Diokno and colleagues observed 27 adults who were using intermittent catheterization for 10 years and found no deterioration in renal function.¹³ They concluded that clean intermittent self catheterization is an effective treatment with few complications and excellent long term results.

Appropriate patients for intermittent self catheterization

Self catheterization should be considered for patients with incontinence or difficulty in voiding associated with a high residual volume of urine owing to a neuropathic or atonic bladder. Although incontinence is the main symptom, patients may also complain of urgency, frequency or nocturia if the volume of urine retained is near the trigger volume. Other symptoms include recurrent, severe urinary tract infections, abdominal pain exacerbated by bending (owing to pressure on the distended bladder) and episodes of acute urinary retention. However, many patients, particularly those with neuropathic urinary retention, may be unaware of a full bladder, an important sign which may also be missed by their doctor. A neuropathic bladder may be the result of spina bifida, multiple sclerosis, intervertebral disc lesions and spinal injuries or tumours. An atonic bladder may be associated with old age or gynaecological problems.²

The essential prerequisites for a trial of self catheterization are a bladder which retains an adequate volume of urine and the patient's motivation.^{8,14} The former may be shown by abdominal examination, ultrasound, x-ray or catheterization. The latter may be assessed during consultation, but given the problems associated with incontinence,¹ it is scarcely surprising that once their urinary retention has been demonstrated and the technique has been explained to them, most patients are highly motivated.³

Recent advances in intermittent self catheterization have shown that severe disability is not necessarily a bar to learning the technique.² Some patients overcome formidable difficulties in their determination to regain control over their bladders. Adults have mastered the technique despite paraplegia, lack of perineal sensation, spinal deformity, intention tremor, low intellectual development or blindness.³ Whitelaw and colleagues¹⁴ showed that old age was not a contraindication, although elderly patients took longer to learn to catheterize themselves. For severely disabled women with paraplegia and incontinence, a device has recently been designed to help them to catheterize themselves in a wheelchair or on the lavatory.¹⁵ It holds paralysed legs in abduction and supports an adjustable mirror to provide an excellent view of the urethral opening. The urine can be drained into a container. This frees women from the restrictions of indwelling catheters, incontinence pads or of having to stay near a lavatory with wheelchair access.

Learning the technique of intermittent self catheterization

Specialist referral is important both to confirm diagnosis and to monitor the upper urinary tract. Patients should therefore

be referred to a urologist or department of urodynamics. The technique is usually taught by a hospital specialist or continence adviser, either in the outpatient department or at home. Many patients find it easier to learn than they expected,⁹ especially as the emphasis is on simplicity and cleanliness rather than sterility. They are advised to catheterize themselves at least four times a day to prevent the bladder overfilling. Catheters are washed after use and either boiled or left in diluted sodium hypochlorite solution.² Patients are given full illustrated notes which include the instructor's telephone number.

Initial support during the teaching period is usually provided by the specialist or continence adviser. Later it may also be shared by the general practitioner or suitably trained practice nurse or community nurse. However, once patients have mastered self catheterization they usually require little or no support other than a supply of catheters, which are available on prescription. If frequent catheterization and adjustment of fluid intake fail to keep the patient continent, a trial of drug therapy may be instituted using propantheline bromide, imipramine hydrochloride or oxybutinin hydrochloride.

Risk of urinary tract infection

Patients with chronic urinary retention are already at risk of urinary infections, bladder calculi, reflux nephropathy, pyelonephritis and renal failure. Before starting intermittent self catheterization some patients already have hydronephrosis and renal scarring; urinary tract infections are likely to have been severe and resistant to treatment.⁸ Once effective drainage is established by intermittent self catheterization, symptomatic urinary infections become infrequent, occurring mainly in those with pre-existing renal damage.¹⁶ The infections respond to appropriate antibacterial therapy, increased fluid intake and more frequent catheterization (up to eight times a day). Asymptomatic urinary infections are common but rarely require treatment. The technique is clean but not sterile and only 10% of patients have sterile urine.¹⁷ Prophylactic antibacterial therapy is not generally recommended.

Social and psychological benefits

Becoming continent, with freedom from indwelling catheters, external devices and other appliances does much to improve patients' self image and sexuality,^{10,18} even if incontinence pads are sometimes used as a precaution. Patients feel in control when previously anxieties about incontinence or urinary frequency may have dominated their activities when away from home. In addition, partners are pleased if enuresis ceases and the patient no longer voids on intercourse or smells of stale retained urine.

Conclusion

Urinary incontinence and voiding difficulties are common^{19,20} but often receive inadequate treatment.²¹ When symptoms are due to neuropathic or atonic bladders, intermittent self catheterization may be a safe, simple and effective treatment. There is usually improvement in renal function and most patients become continent of urine. General practitioners may consider whether they have patients in their care who could benefit from specialist referral for a trial of intermittent self catheterization.

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