Routine Clean Intermittent Self-Catheterization: Innovative Implementation in the Hunter Area Health Service

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A variety of uses for clean intermittent self-catheterization (CISC) have been reported, mainly for managing incontinence and neurogenic bladder dysfunction (Hunt, Oakeshott, & Whitaker, 1996; Lapides, Diokno, Silber, & Lowe, 1972). However, CISC remains an underused procedure and has had only limited routine application in Australia. The purpose of this article is to describe the successful implementation of CISC for the standard management of urinary retention by the Hunter Area Health Service (HAHS) both in hospital and community settings. The HAHS is a comprehensive government health care facility serving Newcastle and nine surrounding communities in New South Wales, Australia.

Prevalence and Impact

The prevalence of urinary problems increases with age (Burgio, Matthews, & Engel, 1991; Millard & Moore, 1996; Milson, Ekelund, Mollander, Arvidsson, & Arekoug, 1993; Molander, Milson, Ekelund, & Mellsom, 1990) and is costly both in terms of finances and quality of life (Fonda, 1986). Incontinence and acute retention of urine are heterogeneous conditions resulting in high and increasing frequency of presentation to accident and emergency departments (A&E) and admission to hospitals and residential aged care facilities (Duncan & Garraway, 1993).

There is a need to improve quality of life for people suffering from urinary problems and to contain the rising costs associated with these disorders. This has resulted in the search for adequate, acceptable, and accessible continence management services. Continence management is achieved through bladder retraining (Pengally & Booth, 1980), medications (Castledon, Duffin, & Gulato, 1986), and surgery. In intractable cases, social continence can be achieved through the use of procedures such as CISC.

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Acute Retention

Clean intermittent self-catheterization is used routinely for managing acute urinary retention in the HAHS Urology Nurse Consultant. Formerly, most people presenting to A&E departments with urinary retention would have an indwelling catheter inserted and be admitted or sent home with referral to a urologist. These patients would then often have to wait a substantial length of time to see a specialist and be booked for elective surgery or further investigation. During this time their catheter would be cared for by either the local general practitioner, a community nurse, or not uncommonly, the patient with no external support.

In 1999, the HAHS Clinical Nurse Consultant Urology initiated and implemented a change in the way men presenting to A&E were managed. The option of introducing a policy of managing men with urinary retention as outpatients using CISC was discussed with the urologists who supported the idea. The protocol specifies the pathway for all males presenting to A&E with urinary retention suspected on clinical grounds due to benign prostatic hyperplasia. When these men have an indwelling catheter inserted, a catheterized specimen of urine is then collected and the volume of retained urine is recorded. If they are otherwise medically well, the men are discharged home with a leg bag. They are referred to the urology outpatient clinic for followup with a urologist. All patients fulfilling the protocol criteria must be evaluated by the hospital urology team before they are discharged. The patients are seen at the urology clinic either on the same day or the next working day. At the urology clinic the indwelling catheter is removed and the patients are taught to perform CISC.

This pathway provides a better option than admission, where patients often languish for several days until a routine operation position becomes available. The technique of CISC allows significant cost savings and provides better outcomes for the patients. Additionally, patients taught to perform CISC have a much-improved chance of voiding again and sometimes manage to avoid surgery completely (as would be appropriate if the retention is precipitated by a transient cause such as alcohol, constipation, or drugs).

Urology Outpatient Clinic

The urology outpatient clinic is a teaching center for patients and staff. Permanent nursing staff provide expertise in teaching CISC to patients. The clinic is also a learning environment for other staff. Medical officers and nurses from different wards and the community are able to spend time in the clinic to supplement their knowledge on CISC. Patients identified as suitable for instruction in the technique make an appointment to see a nurse in the outpatient clinic. The patients are introduced to the concept as a technique used by people who are unable to empty their bladders or who are incompletely emptying their bladders. The complications associated with an incompetent bladder, such as infection, kidney damage, and leaking urine are also explained.

Male patients are shown a video developed by the Hunter Health Working Party on CISC entitled “What’s it all about - Intermittent Self-Catheterization for Men.” The video features a 92-year-old man performing CISC. There are a series of similar videos specifically produced for women, girls, and boys. After the video the nurse discusses the practice of CISC and provides the patient with a copy of the written instruction on intermittent self-catheterization, which is based on the video. The same videos are used for patient and health professional education in all units of the HAHS and in the bachelor of nursing degree program at the University of Newcastle.

The nurse supervises the patient in performing CISC. Once mastered, patients are provided with a supply of equipment and given the contact details of retail outlets for further supplies. They are advised to contact the clinic at any time and to seek help if they experience any problems such as difficulty introducing the catheters, fever, dysuria, lower back pain, discolored or malodorous urine, leaking, hematuria or blood on the catheter. Clinic nursing staff also regularly monitor patient progress by telephone.

Community

If required, patients are referred to the community nurse, who attends home visits until the patient is competent in the procedure and confident in catheterizing at optimal times. If patients experience difficulty in performing their own CISC, the community nurse can supervise the technique, or teach another member of the family, usually a spouse, to perform the technique. For hospital patients with urinary retention problems, community liaison nurses are responsible for the transfer of nursing care from hospital to the community. They coordinate the teaching of CISC in hospital and community nurses followup with home visits, providing a smooth transition for the patient.

Wherever possible, children who need CISC are taught the technique prior to attending school. The community nurse and parents meet with the teachers, explain the procedure, and provide a copy of the video and instruction sheets. This precludes the need for a community nurse or parent to visit the school to catheterize the child. This process empowers the child to take responsibility for CISC with the support of the teacher or teacher’s aid if necessary, and can prevent possible stigmatism and ridicule from other children.

Patients with incomplete bladder emptying or retention in such conditions as motor-neuron disease, multiple sclerosis, Parkinson disease, or stroke also benefit from learning CISC. As the
Inflammation of the prostate, known as prostatitis, is one of the common causes of urinary retention. Several factors can contribute to prostatitis, including infectious agents such as bacteria. It is important to diagnose and treat prostatitis promptly to prevent complications and improve patient outcomes.

Inpatients

**TURP.** The urology ward of the Royal Newcastle Hospital cares for urology patients in the lower HAHS. This ward has been instrumental in establishing CISC as part of routine ward policy, especially for surgical procedures. All urology nursing staff are experts in implementation and education of the technique. Self-catheterization is taught to any patient who goes into urinary retention postoperatively. Patients undergoing transurethral resection of the prostate (TURP) are taught CISC postoperatively if they are unable to void or have high postvoid residual. Patients who have been taught preoperatively have their technique evaluated by ward staff. Most patients who are taught CISC pre or postoperatively are discharged within the same time period as patients not needing the procedure.

**Female incontinence operations.** A major problem with stress incontinence repair is difficulty in reestablishing micturition postoperatively. Often women are unable to void, or experience incomplete emptying for periods of up to 6 weeks. They can become extremely stressed by the cycle of insertion and removal of indwelling catheters, and feel they have failed or have been failed, when they cannot void or completely empty their bladder on removal of the catheter. This process may be repeated several times. It predisposes them to infections, straining to void, and operative failure. At the Royal Newcastle Hospital, all women having these repairs are instructed in CISC preoperatively. They are also encouraged to perform CISC postoperatively, if necessary, and they handle it proficiently and usually void quicker than those not taught. These women can be discharged earlier than in the past and continue managing the process at home, with the assistance of the community nurse and phone contact with clinic staff to maintain progress if required. There is gradual cessation of the need as their voiding improves and residuals fall. The overall result of introducing CISC perioperatively for these women has been a reduction in the stress caused by the hospitalization and operation.

**Postpartum retention.** Postpartum urinary retention is a common phenomenon (Yip, Brier, Hin, & Chung, 1997). Overflow from this condition is often misdiagnosed as stress incontinence. Severely over-stretched bladders can result in the need for a long-term indwelling catheter or intermittent catheterization for life. Hunter Area Health Service protocol recommends CISC to be commenced immediately when incomplete emptying or retention is detected and continued until the voided volumes increase and the residual volumes fall to acceptable levels.

**Fractured neck of femur.** Hunter Area Health Service patients with fracture of the femoral neck have a pathway which instructs nurses to assess continence and if necessary teach or perform CISC perioperatively (see Figure 1). The pathway aims to prevent incontinence. Incontinence can delay a patient’s release from the hospital and is a significant factor leading to residential care (Steiner, Kramer, Elertsen, & Kowalsky, 1997; Whishaw, 1998).

**Education Programs**

At the beginning of each working year, all HAHS Junior Medical Officers (JMOs) attend an in-service education session on continence and urinary catheterization presented by clinical nurse consultants. This raises awareness and understanding of CISC protocols and as a result, it is often the JMOs who initiate intervention in the hospital or upon discharge. Additionally, over 100 registered nurses each year complete an education program provided by the HAHS to perform and teach CISC. Given normal attrition rates, it is estimated that at any given time there are at least 250 RNs working in the Hunter region with skills in teaching, supervising, and performing the procedure. The continence education and intervention lectures in the bachelor of nursing course at the University of Newcastle include the same content on catheterization as that provided to HAHS medical officers and RNs. This ensures that graduate nurses entering the workforce in the Hunter institution follow the same protocol relative to instigating and teaching CISC.

**Networking and Support**

The success in the use of CISC as routine management of urinary retention is, according to the urology and community nursing staff, the result of the close relationships and open lines of communication between the different health sectors. Urology, community health, aged care, and the University of Newcastle, for example, have worked closely in promoting the use of CISC. The HAHS has supported the use of the technique by implementing policies and procedures that have been instrumental in changing A&E, hospital, and community practice in treating urinary retention.

The innovations implemented on intermittent catheterization were instigated primarily by the nursing staff working in urology clinics and community areas. As the urologists viewed this technique as a sensible extension of the range of urologic care, they have encouraged and supported the CISC protocols and procedures.

**Discussion**

Intermittent self-catheterization has been used successfully for many years to promote socially acceptable and functional continence practice. The impact on
Figure 1.
Bladder Management Guidelines Developed for Patients with Fractured Neck of Femur

Step 1
1. Commence accurate fluid balance chart
2. Record time of last void pre hospital
3. Record time and amount of last fluid intake pre hospital
4. Routine urinalysis

Step 2
ASSESS ABILITY TO VOID

Step 3
Group 1
- Voiding spontaneously
- No urinary incontinence

Group 2
Unable to void
- Acute, painful retention
- Desire to void but unable to post admission
- No pain, no sensation of fullness

Group 3
Urinary incontinence

Operative Management
Groups 2-3 – IDC to be inserted pre-operatively on day of surgery

If post void residual >150mls
- Attend bladder scan or catheterise for post void residual to exclude urinary retention with overflow

If post void residual <150mls

Attend bladder scan or catheterise

Not for catheterisation

Operative Management

If spontaneous voiding is not regained within 48 hours or incontinence continues, contact to discuss and formulate an ongoing plan with CNC Continence

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health services, quality of life, and associated costs has also been documented. In 1999 a study was conducted to assess the different forms of urinary drainage and associated outcomes (Patel, Watts, & Grant, in press). The study results showed the CISC group had lower rates of urinary tract infection and inflammation, less pain and less severity of pain, less need for help with the technique, and less hematuria. Quality of life for this group was also higher. Patients found this technique more convenient in maintaining normal daily functions and attending their place of employment. Intermittent self-catheterization was also the only drainage system that allowed the patient to remain sexually active.

The use of CISC as a routine technique has been widely implemented and supported by medical and nursing staff of the HAHS. The positive outcomes resulting from its routine use have been widespread. Length of stay and numbers of admissions for patients with urinary retention have been reduced. The technique has been well received by patients who report a positive impact on their quality of life. Nursing staff report a reduction in nursing time associated with CISC. Surgeons and nursing staff describe decreased infection rates, especially for patients with compromised immune systems (such as those with diabetes), promotion of bladder integrity, lack of complications following surgery, and a reduced need for surgical intervention. Nurses continue to make a significant impact on the quality of health care as a result of these innovative solutions to a widespread, difficult problem.

References