

CASE REPORT

Pelvic floor examination and assessment for urinary incontinence

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Abstract

This case report describes the assessment and management of a 59-year-old woman. On assessment, the subject reported a 3-year history of the clinical signs of mixed urinary incontinence. Her predominant symptoms were daily urgency and urge urinary incontinence several times a week. A follow-up appointment was scheduled 2 weeks after the initial assessment to allow the subject time to complete a bladder frequency/volume diary and to consider the option of a vaginal examination. The subject verbally consented to this examination at the objective assessment. It was determined that pelvic floor muscle (PFM) training could build the structural support to the bladder and urethra for bladder filling, and improve the endurance of the PFMs when contracting during repeated coughs or sneezes. The initial goals of the management plan were to improve the endurance of the subject's PFMs: once an increase in her maximum voluntary contraction had been achieved, the number of repetitions could then be increased.

Keywords: exercise, mixed urinary incontinence, pelvic floor muscles, vaginal examination.

Introduction

Mixed urinary incontinence is defined as a combination of stress and urge urinary incontinence (UUI).

Stress urinary incontinence (SUI) involves the loss of small amounts of urine when coughing, laughing, sneezing, or performing exercises or other movements that increase intra-abdominal pressure. These actions increase pressure on the bladder and SUI occurs in individuals whose pelvic floor muscles (PFMs) have been weakened. The urethra is supported by fascia of the pelvic floor. If this support is insufficient, the urethra can move downward at times of increased abdominal pressure, allowing urine to pass. In women, the physical changes caused by pregnancy, childbirth and the menopause often contribute to SUI (Nygaard & Heit 2004).

Urge urinary incontinence is characterized by spontaneous leakage of urine. The condition is normally associated with involuntary contractions of either the bladder or the detrusor

muscle. Individuals with UUI lose urine as soon as they feel a strong desire to void. It is a major component of overactive bladder syndrome (Haslam & Laycock 2008).

The present case report describes the assessment and management of a 59-year-old woman. The subject was referred for physiotherapy by her general practitioner through the locally agreed integrated continence service.

Case report

Subjective assessment

On assessment, the present subject reported a 3-year history of the clinical signs of mixed urinary incontinence. Her predominant symptoms were daily urgency and UUI several times a week. These problems had led the subject to use between one and two absorbent incontinence pads (TENA Lady Mini, SCA Hygiene Products UK Ltd, Dunstable, Bedfordshire, UK) every day in order to prevent any wetting of her clothing.

She described her frequency as approximately six voids per day and one possible void during the night. The subject occasionally experienced a

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sensation of incomplete bladder emptying. Her daily fluid intake consisted of six mugs of decaffeinated tea or coffee, one glass of squash, and a glass of water. She reported that her SUI was infrequent, and that it only occurred after repeated sneezing or coughing. No investigations or interventions had been completed with the exception of a mid-stream urine analysis, which detected nothing abnormal. The subject also described symptoms of bowel urgency, which was associated with irritable bowel syndrome and caused defecation of loose stools up to three times a day.

The subject's relevant gynaecological history included two pregnancies. Her grown-up children were now aged 40 (birth weight=1.950 kg) and 37 years (birth weight=3.400 kg). Both births were spontaneous vaginal deliveries. The first involved an episiotomy and sutures, while the second was a home birth with no perineal injury. The subject's last menstrual bleed had occurred 18 months before the assessment. She had never undergone hormone replacement therapy.

Other relevant aspects of her medical history included psoriatic arthritis, which was controlled by steroid injections, methotrexate, folic acid, diclofenac and omeprazole. She also reported that she had no latex allergy.

The subject does not work, but she frequently looks after her grandchildren. Her hobbies include gardening, socializing and reading. No activities are prevented by her symptoms; however, any that take place away from her usual surroundings are planned carefully to include access to public toilets.

An outcome measure was completed in line with the integrated continence service pathway. The short form of the International Consultation on Incontinence Modular Questionnaire – Urinary Incontinence (Abrams *et al.* 2006) was used and a score of 10/21 was recorded.

Following completion of the subjective history-taking, an initial diagnosis of mixed urinary incontinence was made, with the possibility of anterior vaginal wall descent as a result of the history of incomplete emptying of the bladder, and associated PFM weakness caused by the history of pregnancy, childbirth and hormonal changes associated with the menopause. A basic explanation of pelvic anatomy and physiology was given to the subject, which included: the anatomy of the bladder and its support from the endopelvic fascia, the levator ani muscles, the perineal membrane and the superficial perineal

muscles (DeLancey 1994); the causes of pelvic floor complex problems; and the function of the bladder.

In line with the National Institute for Health and Clinical Excellence (NICE) guideline on the management of urinary incontinence in women (NICE 2006), the subject was then instructed about the completion of a bladder frequency/volume diary for a minimum of 3 days consecutively.

The objective assessment was then explained. The subject was advised that physiotherapists involved in the care of patients with continence problems need to perform a vaginal examination as part of a pelvic floor assessment. This is done to assess muscle tone, tissue quality and the presence of prolapse. The vaginal examination is also a method of teaching subjects how to perform an effective PFM contraction. Furthermore, it is also a way of evaluating PFM function in order to provide individuals with appropriate exercise programmes.

A body of evidence and guidelines exists to support the use of vaginal examinations by physiotherapists. Bø *et al.* (1988) and Bump *et al.* (1991) determined that a vaginal assessment is essential to ensure that a woman is correctly performing a PFM contraction. The NICE guidelines (NICE 2006) suggested that the PFMs should be digitally assessed prior to PFM training. The guidance from the Chartered Society of Physiotherapy (CSP) states that, because of the range of information that can be gained by a physiotherapist's palpation, digital pelvic floor and vaginal examination are a legitimate part of physiotherapy practice (CSP 2005a).

The subject's consent to a PFM examination and assessment was sought. An individual's right to determine what happens to his or her body is enshrined in the CSP Rules of Professional Conduct (2002) and Core Standards of Physiotherapy Practice (2005b), and is protected by law. Gaining patient consent prior to assessment and treatment also demonstrates common courtesy to that individual, and helps gain the person's trust and confidence. A full explanation of the procedure was given to the present subject, and this was followed by asking whether anyone had done anything to her that she was unhappy with at any time. In line with departmental policy, a chaperone was also offered and she was informed that she could bring someone with her to the examination.

A follow-up appointment was scheduled 2 weeks after the initial assessment to allow the

subject time to complete the bladder frequency/volume diary and to consider the option of the vaginal examination.

Objective assessment

The bladder frequency/volume diary was reviewed and discussed with the subject at her second appointment. The types of drinks that she consumed were not specified in the diary, but after further questioning, it was determined that none of these were caffeinated, alcoholic or carbonated.

The subject's bladder frequency/volume chart outcomes were as follows:

- she experienced between eight and 11 voids every 24 h (not all volumes recorded);
- she had either no or one episode(s) of incontinence every 24 h;
- her maximum recorded voided volume was 852 mL;
- her minimum recorded voided volume was 604 mL;
- she consumed between four and seven drinks every 24 h (all approximately 284 mL, i.e. half an Imperial pint); and
- she consumed no caffeinated, alcoholic or carbonated drinks.

The process of vaginal examination was then explained to the subject once again. She was advised that she could withdraw her consent at any time. The subject had chosen not to bring anyone with her and did not request that a chaperone should be present. The present author also agreed that a chaperone was unnecessary for their protection. The subject verbally consented to the vaginal examination.

Preparations for the assessment were made. These included providing the subject with toilet facilities, privacy to change and a cover to use, as well as ensuring that infection control standards were met in accordance with the departmental policy.

The objective examination was then completed and the findings were as follows:

- The subject had no dermatomal abnormalities at S2–4.
- She showed no evidence of irritation, soreness or excoriation.
- A small, right-hand mediolateral episiotomy scar was present.
- There was no evidence of prolapse at rest or with valsalva movement.
- There was no urine loss or descent on coughing.

Table 1. PERFECT score (Haslam & Laycock 2007): (P) power (or pressure, a measure of strength using a manometric perineometer); (E) endurance; (R) repetitions; (F) fast contractions; (E) elevation; (C) co-contraction; and (T) timing

	Variable						
	P	E	R	F	E	C	T
Score	4	7	5	10	✓	✓	✓

The subject's PERFECT score (Haslam & Laycock 2008) was then determined on the fifth contraction of the PFMs (Table 1).

On completion of the assessment, she was again provided with privacy to change back into her clothes and infection control procedures were followed in accordance with the departmental policy.

The findings of the objective assessment were discussed with the subject in relation to her subjective history:

- she had good passive support to the bladder and there were no signs suggestive of prolapse;
- she had active system potential to work at good level (grade 4/5); however, her endurance could be improved, and it was a possible cause of her urgency and UUI symptoms; and
- PFM training could build the structural support to the bladder and urethra for bladder filling, and improve the endurance of the PFMs when contracting during repeated coughs or sneezes.

The possibility of detrusor overactivity was also explained to the subject, and she was given advice regarding the recommendations of the NICE guideline (NICE 2006), i.e. that multi-channel filling and voiding cystometry should only be completed if conservative methods of treatment were unsuccessful.

Management plan

The initial goals of the management plan were to improve the endurance of the subject's PFMs. The aim was to increase her sustained maximum voluntary contraction (MVC) to 10 s, and once this was achieved, the number of repetitions was to be increased. The subject was informed that a further vaginal examination might need to be performed at a future appointment in order to establish that this improvement in endurance had been achieved. She was also told that electromyographic biofeedback could be used in

order to improve proprioception of the MVC and strengthen her motivation should this goal prove difficult to accomplish. The subject was shown a periform probe and the electromyographic biofeedback machine so as to allow her to consider this treatment modality. Advice was given regarding bladder-emptying techniques, which contribute towards complete voiding, and 'The Knack' (Miller *et al.* 1996), which improves the coordination of peri-urethral contraction prior to increases in intra-abdominal pressure.

Once an improvement in PFM MVC endurance occurs, further progression of the intervention could then include the teaching of urge suppression techniques utilizing the perineodetrusor inhibitory reflex (Mahony *et al.* 1977), a 15–20-s contraction of the PFMs to inhibit the detrusor muscle. Bladder training could also begin.

The use of anti-muscarinic drug therapy was also highlighted. This treatment was discussed with the subject in conjunction with the recommendations of the NICE guideline (NICE 2006), i.e. that bladder training lasting at least 6 weeks should be used as the first-line treatment (NCCWCH 2006).

Discussion

Other possible therapeutic interventions that could have been utilized to assist the present subject further in improving the function of her PFMs include cone therapy to improve endurance of the PFMs at a sub-maximal level by increasing both the length of the MVC and the weight sustained (Bø 1995). Activities of daily living could also be included in her regime to improve her endurance during an increase in intra-abdominal pressure.

Electrical stimulation should not be necessary to improve the subject's PFM MVC since grade IV contractions have already been achieved; however, this technique could be used to affect detrusor inhibition should bladder training prove unsuccessful (Bø 1998).

Reviews of this subject will continue on a regular basis, i.e. every 2–6 weeks, depending on her progress and the availability of appointments.

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