The Pelvic Floor and Urinary Incontinence

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Introduction

Flicking through *TV Now!* magazine, I came across the following headline in the medical problem page: *"I can't seem to stop nature calling*!" Intrigued, I read on. "*Dear Dr Emer, since I had my baby girl two years ago, I've had a very embarrassing problem. If I cough, sneeze, jump or run after her, I wet myself. I am only 29! I thought this happened only to old people. What can I do? I'm afraid to have sex in case the same thing happens. I don't want to tell my husband, it's so awful.* Teresa, Co. Wexford."

Many women reading this will give birth to children, indeed some of you might have already. This article applies to you in particular. However, every one of us (including men) may potentially present with bladder and bowel problems, since we all have a pelvic floor. Not only might we personally become affected, but as (future) doctors, nurses, physiotherapists, occupational therapists, pharmacists, psychologists etc., we will almost certainly come into contact with people, young and old, whose lives are devastated by their lack of continence.

Will we, professionally, be able to give advice if we know little or nothing about the subject? Wall, Norton and DeLancey[1] write that most health care professionals ignore urinary incontinence, and do not provide adequate diagnosis and treatment. They feel that medical and nursing education neglects urinary and faecal incontinence. They also believe that curriculum development is urgently required, for those in training as well as for those in practise. Grealish and O'Dowd[2] state that "many GPs avoid dealing with the problem of urinary incontinence in women" and that GP management of women with urinary incontinence is "sub-optimal" when women do seek advice and treatment.

This article will discuss the importance of the pelvic floor, and why women, in particular, should be familiar with exercises that keep it toned. I shall review the various types of urinary incontinence, focussing on stress incontinence and the issues surrounding it.

The pelvic floor

The pelvic floor supports the pelvic organs and their contents (notably the urinary bladder, bowel and, in females, the uterus). It acts as a sphincter, contracting to counteract increases in intra-abdominal pressure. These increases may be momentary (coughing and sneezing) or more prolonged (as in heavy lifting). When an expulsive action is required (as in defaecation) the muscle relaxes.

The principal muscles of the pelvic floor are levator ani and coccygeus. They form a gutter- or funnel-shaped sheet of muscle that is slung around the midline effluents (the urethra, anal canal and, in females, the vagina).

In females, part of levator ani is attached to the muscle of the vagina. This has very important consequences - since micturition is in part controlled by the same muscle action that occurs when the vagina is constricted voluntarily.

The perineal body, in females between the vagina and anal canal, is a midline fibromuscular mass. A number of muscles gain attachment to it, or decussate within it. The perineal body provides a degree of stability for the pelvic and perineal structures. This means that the muscles work together as a co-ordinated whole, and the contraction of one sphincter, in isolation from another, is not usual. Injury to the perineal body during childbirth may weaken the pelvic floor and predispose a woman to prolapse of the vagina and uterus.

Pregnancy, childbirth & damage to the pelvic floor

As humans evolved to stand upright and walk on two feet instead of on all fours, the pelvic floor had to do a lot more work. It was required to withstand the forces of gravity and increased pressure of the body, as well as supporting the pelvic organs. Pregnancy accentuates these potential problems, as the already vulnerable pelvic floor must support the increasing weight of the enlarging uterus[3]. The muscular and fibrous parts of the pelvic floor are at risk of damage during childbirth, due to the degree of stretching and/or tearing to which they are subjected.

When the pelvic floor is young and healthy, it lies fairly flat. However, if it becomes damaged, it stretches and "sags", and may not hold the urethra and anal canal tightly closed. Pregnancy and childbirth are the major reasons why women should pay more attention to their pelvic floor from their mid-teens onwards. If the pelvic floor is in very good condition then, in the event of pregnancy, subsequent problems may possibly be circumvented. Remember the old adage "prevention is better than cure"! However, pregnancy and childbirth are not the only risk factors for damage. Other potential sources of damage are outlined in Table 1.

Pelvic floor exercises increase the bulk of the muscle. It follows that increased bulk will allow increased strength of reflex contractions in response

Table 1: Risk factors for pelvic floor damage

Pregnancy and childbirth
Obesity
Chronic constipation and straining at stool
Surgery, radiotherapy or trauma
Chronic cough

Table 2: Characteristics of the different types of incontinence

TYPE OF INCONTINENCE	PATIENT COMPLAINS OF...
◆Stress incontinence	◆Leaks with cough, sneeze, exercise, lifting
◆Urge incontinence	◆Leaks with urgent desire to void; frequency; nocturia
◆Mixed stress and urge	◆Mixture of above
◆Nocturnal enuresis	◆Bed-wetting when asleep
◆Overflow incontinence	◆Frequency, nocturia, passive dribbling, incomplete emp -tying; symptoms of urinary tract infection
◆Functional incontinence	◆Inability to reach toilet or remove clothes in time
◆Inappropriate micturition (or defaecation)	◆Carers complain that patient makes no attempt to use the toilet appropriately (e.g. sometimes found in people with dementia)

to elevated intra-abdominal pressure (when coughing, laughing etc). Stress incontinence (discussed below) in particular can be avoided by prevention strategies. Pelvic floor exercises can be used alone, or in conjunction which other therapies, to treat incontinence problems.

Urinary incontinence

The International Continence Society defines urinary incontinence, as "A condition where involuntary loss of urine is a social and hygienic problem, and is objectively demonstrable"[4]. There are several types of urinary incontinence, as illustrated in Table 2.

Stress urinary incontinence is urine loss that occurs when sudden increases in intra-abdominal pressure (coughing, laughing etc) force urine past the urethral sphincter mechanism. This occurs because the abdominal pressure acting on the bladder exceeds the ability of the bladder outlet to withstand this pressure. The relatively short female urethra, and the poorly supported female bladder neck, makes women particularly susceptible to stress incontinence, relative to men. Indeed, this is the most common type of urinary incontinence in females[5]. Men rarely present with stress incontinence, unless their lower urinary tract becomes damaged by surgery (e.g. operations on the prostate). The risk factors for stress incontinence are similar to those for pelvic floor damage. Additional risk factors include hormonal status (e.g. oestrogen deficiency) and connective tissue disorders.

Table 3: Prevalence of urinary incontinence.

	PREVALENCE (%)
WOMEN LIVING AT HOME (AGE IN YEARS)	
15-44	5-7
45-64	8-15
Over 65	10-20
MEN AND WOMEN LIVING IN INSTITUTIONS	
Residential home	25
Nursing home	40
Long stay care in hospital	50-70

[Source: Royal College of Physicians]

A variety of studies conducted in the UK have looked at the prevalence of urinary incontinence[6]. A summary of the results is shown in Table 3. Although the incidence increases with age, usually as a result of other pathology, it is important that incontinence is not accepted as inevitable or incurable.

The first Irish national survey on bladder control found that as many as 370,000 Irish people experience bladder control problems (MRC National Bladder Control Survey, April 1998–based on 1,200 people aged 40). This means that 31% of all Irish women and 25% of all Irish men have bladder control problems. In another survey conducted in the UK (based on 10,226 adults over 40 years of age) 20.2% of females were found to be affected by urinary incontinence[7].

It is important to note that the apparent prevalence of urinary incontinence varies widely in different cultures, depending on how the information is obtained, and the way in which the questions are asked. For many years the Japanese believed that female urinary incontinence was a negligible problem in their culture, until they realized that social stigma prevented women from admitting the problem to male physicians[1].

The implications of urinary incontinence

In a world that has become much more liberal, over the past 50 years in particular, one of the few remaining taboos surrounds the subject of incontinence. One British study found that over half of women who delayed seeking help for significant urinary incontinence did so because they were too embarrassed to discuss the problem with their GP, or any other health worker. Of these women, 50% had delayed seeking treatment for more than one year, and 25% had delayed seeking help for more than five years. This has important implications, because it illustrates that people do not feel able to divulge their problems to the appropriate health professional.

The MRC National Bladder Control Survey (1998) revealed that 93% of people with bladder control problems were not aware that treatment is available. The survey found that only 47% of those with problems have sought medical intervention for

the condition, despite suffering from it for an average of seven and a half years. Twenty-seven percent of sufferers felt that the medical community ignores the condition.

Most people who have problems with incontinence expect little sympathy or help. Often this is because they blame themselves[8]. Some women who develop stress incontinence after having children do not seek professional help since they view their problem as "a woman's lot", something that has to be put up with.

Many people who have continence problems are likely to have anxiety about "accidents" in public, decreasing their social activities as a result. Those with stress incontinence particularly decrease their physical activities, due to increased episodes of leakage during exercise. Urinary incontinence in men and women may alter intimate relationships. As highlighted in the magazine extract, women with continence problems commonly have urine leakage during sexual intercourse and try to avoid sexual activity for this reason.

The cost of incontinence is not limited exclusively to the patient's quality of life. Costs include drugs, surgery, appliances and items such as pads. In the UK, it is estimated that the cost of urinary incontinence to the NHS is around £424 million per annum[7].

Another aspect of incontinence that is often overlooked is the patient's unemployment or early retirement. Some patients feel unable to work, because they cannot access toilets easily or frequently enough. This can have huge repercussions for the personal finances of the patient and their family.

Treatment

In the treatment of urinary incontinence, general measures are usually combined with treatments that target the specific type of incontinence identified. General measures would include: fluid restriction to one litre per day, where frequency is a problem; reducing caffeine and alcohol intake; stopping or reducing the use of diuretics, if appropriate; losing weight if appropriate; incorporating more fibre into the diet, to reduce constipation; giving up smoking in those with chronic cough; oestrogen replacement therapy in post-menopausal women; pelvic floor exercises, as mentioned earlier.

There are a variety of products available to help treat incontinence. Vaginal cones are available to make women more aware of their pelvic floor muscles, and may also improve their ability to correctly perform pelvic floor exercises. Electronic devices are used to stimulate the pudendal nerve at a variety of frequencies, with some success. Elevating devices may be used to support the bladder neck, for example during sports – to temporarily prevent incontinence.

Surgery for incontinence problems aims mainly to elevate the bladder neck, support the mid-urethra, or increase urethral resistance.

Pharmacotherapy is the preferred mode of addressing treatment for overactive bladders, and includes antimuscarinic drugs and calcium channel blockers. These are used to inhibit the contractile activity of the bladder.

Conclusion

The pelvic floor is very important in maintaining continence, and damage to it poses the risk of incontinence. The condition of the pelvic floor can be improved by performing pelvic floor exercises.

Awareness of the prevalence of incontinence, especially stress incontinence, needs to be increased. People should be aware that incontinence can be prevented and/or treated.

Patient education is one of the most important points in the evaluation and treatment of women with loss of bladder control. Providing patients with adequate information means that physicians themselves must have sufficient knowledge to answer their patient's questions.

The medical profession, as a whole, is surprisingly ignorant of the nature and scope of urinary incontinence, and how to deal with it. More education needs to be directed at medical students, as well as physicians in practice, especially in the fields of obstetrics and gynaecology, urology, general practice and geriatrics.

Let us lobby for a fraction of the millions of pounds that are spent on treatments and containment products, to be redirected towards education of students, professionals and the general public.

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