

Bladder outflow problems in Females

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ABSTRACT

This is a prospective study that included 188 females who had bladder outflow problems, either due to urethral stricture disease or failure to empty the bladder. The data was taken from a computer database and included patient data since 11 years, who were on follow-up for their conditions. The women ranged from 23 to 97 years old, with a median value of 59 years. The aim of the study was to assess the bladder outflow problems in females and their treatment, which included either cystoscopy alone or in combination with urethral dilatation followed by long term clean intermittent self catheterisation or dilatation (CISC/ISD). Out of the 188 patients, there were 135 patients who had problems with emptying the bladder due to various conditions. These females did well with CISC, which is an accepted treatment modality in this group of patients. They also used catheters of a smaller size as compared to patients using ISD for stricture disease. Thirty-eight patients among the total number had urethral stricture disease, whereas 15 patients presented with both conditions. Among the patients having treatment for stricture disease, the majority needed urethral dilatation repeated during follow-up. However, none of them needed any reconstructive surgery during that period of time. Most of the patients were comfortable doing ISD, in spite of using larger catheters comparatively. The catheters most used were the Lofric catheters. It was also seen that the majority of patients were satisfied doing CISC/ISD.

Keywords: Female, urethral stricture disease, bladder emptying problems, Intermittent self-catheterisation/dilatation

INTRODUCTION

Lower urinary tract symptoms in females have very similar presentations, even in the absence of urinary tract infections. They include symptoms of urinary frequency, urgency, dysuria, and suprapubic discomfort. Some women also complain of poor flow and feeling of incomplete voiding. Repeated urine tests may not show definite infection. Historically, these symptoms were given the term 'urethral syndrome', which was first coined in a clinicopathological study of the female urethra in 1949 (Powell and Powell, 1949).¹ With the passage of time and by 1980 most of these conditions were thought to arise from the infections of the bladder, urethra or vagina. With the increased recognition of definite aetiological conditions causing these symptoms the term 'urethral syndrome' was abandoned for conditions that were definitely identifiable. However, women still present with similar symptoms for which an identifiable cause cannot be found. The criterion to call them urethral stricture disease is rather vague in women, and includes a diagnosis based on history, ultrasound (to find out the residual volume), urethrocytology, uroflowmetry and urodynamic studies. Even these criteria are not as well defined as for male stricture disease. Urethral stricture disease is rare in women: the actual incidence is unknown, but it is clearly much less common than in men, and the reasons might include the shorter urethra, greater anatomical

mobility, and a straighter urethra in women than in men, as well as the modest degree of protection provided by the bony pelvis over its entire length.² Bladder outflow problems in women can present in a myriad of ways. Typical complaints of slow urinary flow and difficulty emptying make the clinician immediately consider its diagnosis. However, many other presenting symptoms e.g. irritate voiding complaints, can be secondary to bladder outflow problems but be more difficult to diagnose. This reinforces the crucial importance of a high level of suspicion for bladder outflow obstruction in women, and the need for thorough investigation, including a careful history and physical examination, and appropriate ancillary studies to help make the appropriate diagnosis.³ Most women who present with features of bladder outflow problems or difficulty emptying the bladder may undergo rigid cystoscopy with or without urethral dilatation. Urethral dilatation is often the first intervention chosen, but long-term results of a single dilatation have a high failure rate. Hence, urethral dilatation combined with clean intermittent self-catheterisation/dilatation seems to produce better results.⁴ In this study, we have followed women who have had symptoms suggestive of bladder outflow problems either due to urethral stricture disease or bladder emptying problems due to various causes treated by cystoscopy, urethral dilatation and clean intermittent self-catheterisation/dilatation (CISC/ISD).

MATERIALS AND METHODS

This was a prospective study done in Ayr General Hospital, with the data taken from a computer database, which had 668 patients who were attending the hospital outpatient clinic in the period from January 1996 to March 2007. The database included both male and female patients, treated for bladder outflow problems, which included bladder emptying and strictures. The women were diagnosed as having bladder outflow problems by a combination of history, physical examination, urethroscopy, uroflowmetry and if needed urodynamic studies. Out of the total number of patients, 188 were females who were considered for this study. The technique of intermittent self-dilatation (ISD) was taught to the patient within one week of any definite intervention. Following this, these patients were followed up three monthly, six monthly and then annually if required. A questionnaire in the database was used to find out the tolerance and compliance to the procedure of ISD, and whether they had any technical difficulty.

The database taken was a computerised Microsoft access programme that the specialist continence nurses used. This included both data from the initial visit and subsequent follow-ups. The follow-up period ranged from 1 to 136 months. We looked at women who had voiding problems due to strictures, or had difficulty emptying their bladder due to any cause, and their subsequent management following any intervention if required. The data also looked at the tolerance of the patients towards ISD and their quality-of-life.

RESULTS

A total number of 188 females were included in the study from the database. They were all carrying out clean intermittent self-catheterisation/dilatation usually following an initial procedure. The youngest female was 23 years and the oldest was 97 years, with the median age being 59 years old (Fig 1). Out of the total number, 72% (135) of patients were carrying out catheterisation for bladder emptying problems, 20% (38) were using it for stricture therapy and 8% (15) had both problems (Fig 2).

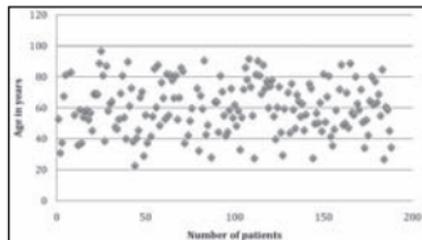


Fig. 1. Age distribution of patients

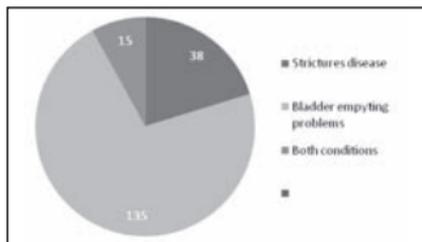


Fig. 2. Reasons for self catheterisation

On initial presentation of the 38 patients being treated for urethral strictures, 36 had cystoscopy with urethral dilatation, with 2 patients undergoing urethrotomy. Following these initial urethral dilations, 32 patients had further cystoscopies with dilations on one or more occasions. Of the 135 patients who had bladder emptying problems 102 women underwent cystoscopy on initial presentation, whereas the 15 patients who suffered from both bladder emptying and urethral strictures had cystoscopies and urethral dilations done. All 15 of these patients had repeat urethral dilations done at a later date. Of the patients who presented with urethral strictures apart from 2 patients who gave a history of pelvic injury, no identifiable cause was given for the strictures. Among the patients undergoing ISC for bladder emptying many had medical histories that could be identified as factors responsible for their poor bladder function. This data showed 26 patients to have multiple sclerosis, 25 with diabetes, 17 patients who had previous pelvic surgery, 7 who previously had a stroke, 6 with spina bifida, 4 who had undergone a previous laminectomy, 3 who suffered from bipolar disorder and one each who had an ovarian cyst and epilepsy. No definite past history was found in 45 patients who presented with bladder emptying problems (Fig 3). Most people performed self-catheterisation/dilatation by themselves, but some had to take the help of their carers to have this done. The maximum number of patients (90) used 16ch catheters, followed by 76 that used 12ch catheters, 18 used 14ch catheters, 12 used

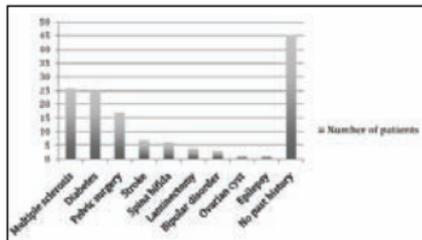


Fig. 3. History of bladder emptying problems

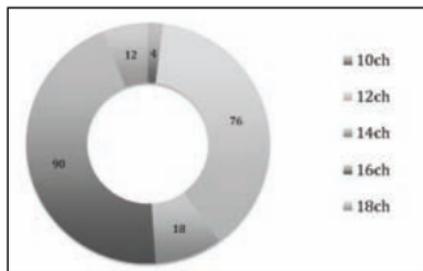


Fig. 4. Distribution of catheter size

18ch catheters, and only 4 used 10ch catheters (Fig 4). Among the catheters used 12 patients used catheters of at least 2 sizes. All patients who used an 18ch catheter had stricture disease, whereas patients who had urethral stricture disease mostly used a 16ch catheter, although some patients with bladder emptying problems also used these catheters. The majority of patients who had bladder-emptying problems used the smaller 12ch and 14ch catheters. The catheters that were used commonly were the Lofric catheters (85.5%). A patient satisfaction survey was done regarding their feelings towards ISC/ISD. Sixty-six patients (35.2%) were satisfied with their quality of life, 53 (28.2%) had mixed feelings, 36 (19.1%) women were pleased, 18 (9.6%) patients were unhappy and 15 (7.9%) did not give any response (Table-1).

Table-1: Quality of Life Survey of patients on ISC/ISD

Patient reaction	n. (%)
Pleased	36 (19.1%)
Satisfied	66 (35.2%)
Mixed	53 (28.2%)
Unhappy	18 (9.6%)
No response	15 (7.9%)

DISCUSSION

Bladder problems in females amounting to bladder outflow obstruction are not well documented as in males, and they are considered rare.^{5,6} However, studies have shown that they are not as rare as some consider, with the aetiologies being varied.⁷ The diagnosis of female urethral stricture disease is usually based on symptoms, meatal appearance, and difficult instrumentation of the patient.⁸ There has been some consensus as regards the values during tests like urodynamics and uroflowmetry.^{9,10} Bladder outflow obstruction due to strictures is still considered a rare entity, as seen in our study where we had only 38 cases in a time frame of 11 years. Most of these patients were managed with cystoscopy and urethral dilatation (36 patients)

followed by intermittent self-dilatation, but two patients underwent urethrotomy followed by ISD. Nevertheless, 32 of these patients had to undergo further urethral dilations during their follow-up periods. This shows a high recurrence rate of urethral strictures following procedures like urethral dilatation, but no patient had to undergo urethral reconstruction to manage their condition. Nearly all the patients were using 16ch to 18ch catheters for ISD, which they did on a regular basis, and they remained reasonably satisfied with their quality of life. A relatively good experience of treating patients with urethral stricture with urethral dilatation and CISC/ISD were reported in several studies that have suggested long-term CISC in these women to be safe and effective, and to avoid the need for major reconstructive surgery.^{4,11} However, urethral dilatation for stricture therapy has become controversial with studies suggesting a more aggressive first line approach.^{8,12}

The majority of patients (135) in our study were put on ISC due to bladder emptying problems. This included associated underlying disease conditions like multiple sclerosis that have an effect on bladder emptying.^{13,14} We had 26 patients who had multiple sclerosis, which formed the largest group of patients with a definitely identifiable medical history. The second largest group consisted of patients with diabetes mellitus, which has also been shown to cause bladder dysfunction.¹⁵⁻²⁰ We also had patients with spina bifida, pelvic surgery and back surgery who had bladder-emptying problems.^{21,22} Treatment of bladder emptying problems by ISC is well established and these patients were treated similarly.^{14,23,24} Compared to people who had urethral strictures, the majority of these patients used smaller 12ch catheters. The quality of life survey suggested most patients were satisfied with continuing with ISC/ISD. The catheters used most commonly for these procedures were the Lofric catheters, which were used by 85.5% of the patients.

Although female strictures are rare they have been documented, and treatment with urethral dilatation and ISC/ISD does provide good results. The move nowadays is towards definite reconstructive surgery, which however, needs expertise that may not be available in all centres. Similarly, ISC for the treatment of bladder emptying problems is well documented, and provides a good, safe means of treatment for these cases. It has also been seen in this study that most patients are relatively satisfied doing ISC/ISD for a long period.

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