

**Original Article****Benefits of Pelvic Floor Muscle Training (PFMT) and Biofeedback Therapy in Patients with Post Prostatectomy Urinary Incontinence**Argha Mondal<sup>1</sup>, Kalyan Kumar Sarkar<sup>2</sup>, Prithwiraj Ghoshal<sup>3</sup>, Kaushik Sarkar<sup>4</sup>**Abstract :**

Urinary incontinence is occasionally seen in men after prostatectomy. This may be due to sphincter weakness or due to detrusor overactivity or neurogenic causes. Pelvic Floor Muscle Therapy (PFMT) with biofeedback is non-invasive initial management for this condition. Here we present a 71-year-old patient with lower urinary tract symptoms (LUTS) of frequency, urgency, urge incontinence and nocturia. This may be due to sphincter weakness or due to detrusor overactivity or neurogenic causes. This patient had a possible neurological cause of bladder dysfunction (cervical spondylotic myelopathy) along with urethral stricture and bladder neck obstruction. Severe stress and urge incontinence had developed post operatively. The intervention using pelvic floor muscles training, electrical stimulation and biofeedback therapy was successful. Biofeedback generates consciousness about muscle activity, and helps maximizing the muscle contractions in the pelvic floor region while avoiding other muscle groups' contractions.

**Keywords :**

Incontinence, Biofeedback, Bladder dysfunction, Pelvic floor muscle therapy.

**Introduction :**

A case of post prostatectomy urinary incontinence is presented wherein a 71 year old patient developed severe stress and urge incontinence

after internal urethrotomy for a urethral stricture, incision for a sclerotic bladder neck and revision transurethral prostatectomy. He had presented with irritative and obstructive urinary symptoms which were refractory to drugs and simple conservative measures. A satisfactory outcome was obtained with physiotherapy including pelvic floor muscle training, electrical stimulation and biofeedback therapy.

**Case Summary :**

A 71-year-old patient was admitted with lower urinary tract symptoms(LUTS) of frequency, urgency, urge incontinence and nocturia. He was diabetic on oral hypoglycaemic agents. He had mild spondylotic cervical myelopathy (D5, D6)with poor balance and gait unsteadiness on physiotherapy and expectant treatment. He had a past history of TURP in 2008.

On digital rectal examination prostate showed evidence of enlargement/regrowth. Anal tone and perianal sensations were normal. Knee jerks and anklejerks were brisk.

The following investigations were obtained:

- Uroflowmetry - Showed Obstructed Flow pattern, Qmax 8 ml/sec, Voided volume 200ml.
- RGU (Retrograde Urethrogram) showed a 2 cm bulbar stricture.
- MCU (Micturating cystourethrogram) showed a moderately occlusive bladder neck.
- PSA=1.21 ng/ml.

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e) USG KUBP showed normal upper tracts, postvoid residual urine of 60 CC and prostate volume=8.9 cc

Patient was on oral Metformin and Atorvastatin and did not respond to orally prescribed alpha blockers and Mirabegron. In view of persistent severe symptoms, he was admitted for further assessment and urodynamic studies. A possible diagnosis of bladder outlet obstruction along with neuro-vesical dysfunction due to cervical myelopathy was made.

Urodynamics showed a stable bladder with cystometric capacity of about 300 ml. A voiding detrusor pressure was not generated. A urodynamic diagnosis of an underactive detrusor was made.

At this stage the urological diagnosis was voiding dysfunction following previous TURP in an elderly male diabetic patient with cervical myelopathy. In view of radiological suspicion of anatomical obstruction, the patient was advised endoscopic assessment after informed consent.

At operation internal urethrotomy was performed for a 2 cm bulbar urethral stricture calibrating at 12 Fr. Bladder neck was moderately sclerosed with recurrent BPH (small adenoma). Internal urethrotomy, bladder neck incision and resection and revision transurethral prostatectomy was performed. Postoperative recovery was significant for development of distressing mixed incontinence (stress and urge incontinence). This was difficult to manage conservatively including oral anticholinergics.

Patient was therefore referred to the physiotherapy department for consideration of Pelvic floor muscletherapy.

Physiotherapy assessment suggested patient had weak pelvic floor muscles with poor endurance affecting his bladder behaviour and causing

urinary incontinence. Mixed urinary incontinence was present with 4-5 times nocturia and 15-20 times of day time frequency. He also had chronic constipation for 10 years with straining to pass motion and incomplete bowel emptying.

The Physiotherapy team had prescribed the following lines of management :

1. Pelvic floor muscle training
2. Pelvic floor muscles relaxation training  
Bladder diary with bladder habitual training
3. Bowel diary with bowel habitual training
4. Education about proper toilet sitting position
5. Education about pelvic hygiene
6. Home exercise program
7. The patient was advised Biofeedback assisted pelvic floor rehabilitation program for the next 10weeks with 10 outpatient sessions and home training.

Patient reported a gradual improvement of his urinary symptoms, and at 12 weeks was dry, pad free with daytime frequency of 8 times and nocturia of 2-3 times with improved stream and voided volumes.

#### **Discussion :**

Urinary incontinence (UI) is the involuntary leakage of urine, causing symptoms of wide-ranging severity and affecting patient's quality of life. There are 3 major types of UI as recommended by the International Urogynaecology Association (IUGA), the International Incontinence Society (ICS), and the American Urological Association (AUA). Stress incontinence is the involuntary loss of urine with increased intraabdominal pressure or physical exertion (eg, coughing, sneezing, jumping, lifting, laughing, straining, exercising).

Urge incontinence is the involuntary loss of urine preceded by a sudden and severe desire to pass urine. Mixed urinary incontinence (MUI) is a combination of stress and urge incontinence and may take on the pathophysiology of both<sup>[1]</sup>.

Urinary incontinence is occasionally seen in men after prostatectomy. This may be due to sphincter weakness or due to detrusor overactivity or neurogenic causes. This patient had a possible neurological cause of bladder dysfunction (cervical spondylotic myelopathy) along with urethral stricture and bladder neck obstruction. Severe stress and urge incontinence had developed post operatively<sup>[2]</sup>.

Current guidance suggests intensive Pelvic Floor Muscle Therapy (PFMT) with biofeedback as non-invasive initial management for this condition. Other options of treatment for post prostatectomy urinary incontinence other than

PFMT include pharmacotherapy using Solifenacin and Duloxetine, vibration therapy, electrical stimulation and extracorporeal magnetic innervation as their main intervention. Eventually complex and invasive surgical treatments may become indicated<sup>[3]</sup>.

In this patient intervention using pelvic floor muscle training, electrical stimulation and biofeedback therapy was successful. Biofeedback generates consciousness about muscle activity, and helps maximizing the muscle contractions in the pelvic floor region while avoiding other muscle groups' contractions<sup>[4]</sup>.

#### **Conclusion :**

In this report, we have recorded the beneficial effect of modern physiotherapy techniques in regaining multifactorial post TURP urinary incontinence and should be widely adopted.

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