

Shroni-Tala Balavardhana Abhyas (Pelvic Floor Muscle Training) with Avagaha Swedana: A Unique Ayurvedic Approach to the Management of LUTS in Benign Prostatic Hyperplasia

Dr. Sakshi Bisht¹, Dr. Ajay Kumar Gupta²

¹PG Scholar (Final Year), P.G. Department of Shalya Tantra, Rishikul Campus, Uttarakhand Ayurved University, Haridwar, Uttarakhand, India.

²H.O.D. and Professor, P.G. Department of Shalya Tantra, Rishikul Campus, Uttarakhand Ayurved University, Haridwar, Uttarakhand, India.

Abstract

Benign Prostatic Hyperplasia (BPH) is one of the most common age-associated condition affecting elderly males and is frequently associated with Lower Urinary Tract Symptoms (LUTS). These symptoms may include increased urinary frequency, urgency, nocturia, weak urinary stream, hesitancy, straining, incomplete bladder emptying, and post-micturition dribbling. BPH may produce symptoms through a combination of Benign enlargement of the Prostate and Bladder Outlet Obstruction, while the severity of symptoms does not always correlate directly with the size of the Prostate (Bhat, 2019; O'Connell et al., 2023).

Approximately 25% of men develop reduced urinary stream strength by the age of 55 years. The prevalence of this symptom increases further, affecting nearly 50% of men between 55 and 75 years of age. The annual incidence of Lower Urinary Tract Symptoms (LUTS) related to Benign Prostatic Hyperplasia (BPH) has been reported to be 15 cases per 1,000 men each year (Campbell & 1438, 2002). This data is increasing gradually.

Although modern medical science offers several conservative, pharmacological, and surgical treatment options, these approaches may be associated with limitations, adverse effects, treatment costs, and postoperative complications.

Ayurveda provides a holistic approach to the management of age-related disorders and emphasizes the preservation of functional independence and quality of life in elderly individuals. Several conservative measures, including the use of herbal drugs such as Gokshura, Punarnava, Varuna, etc. along with procedures such as Matra Basti, are traditionally utilized in the management of urinary disorders. (Sharma & Dash, 2009; Srikantha Murthy, 2012). In this context, Shroni-Tala Balavardhana Abhyas, clinically evaluated in the present study as 'Pelvic floor muscle strengthening exercise', performed in association with Avagaha Swedana, provided a positive outcome.

Keywords: Benign Prostatic Hyperplasia, Lower Urinary Tract Symptoms, Avagaha Swedana, Shroni-Tala Balavardhana Abhyas, Apana Vayu, International Prostate Symptom Score.

1. Introduction

Benign Prostatic Hyperplasia (BPH) is a common age-related condition affecting elderly males. It refers to benign enlargement of the Prostate resulting from hyperplastic changes in the glandular and stromal components. The condition becomes increasingly prevalent with advancing age and may result in compression of the prostatic urethra and varying degrees of Bladder Outlet Obstruction. However, prostate enlargement, bladder outlet obstruction and Lower Urinary Tract Symptoms (LUTS) are related but distinct entities, and not every patient with an enlarged prostate develops clinically significant obstruction or troublesome urinary symptoms (Bhat, 2019; O'Connell et al., 2023).

LUTS represent a broad spectrum of urinary complaints and may be categorized into storage, voiding, and post-micturition symptoms. Storage symptoms include increased urinary frequency, urgency, nocturia, and urinary incontinence. Voiding symptoms include hesitancy, weak urinary stream, intermittency, and straining, whereas post-micturition symptoms include a sensation of incomplete bladder emptying and post-micturition dribbling. These symptoms can significantly interfere with sleep, daily activities, psychological well-being and overall quality of life. (O'Connell et al., 2023).

The pathophysiology of BPH-associated LUTS is multifactorial. The enlarged prostate may cause a static component of obstruction by narrowing the prostatic urethral lumen. In addition, increased smooth muscle tone within the prostate and bladder neck contributes to a dynamic component of obstruction. Changes in detrusor function secondary to chronic bladder outlet obstruction may further contribute to storage and voiding symptoms (Bhat, 2019; O'Connell et al., 2023). Thus, the severity of LUTS cannot always be predicted solely by the degree of prostatic enlargement.

The evaluation of a patient with suspected BPH includes a detailed history, assessment of urinary symptoms, physical examination including digital rectal examination, urinalysis and appropriate investigations such as serum Prostate-Specific Antigen (PSA), renal function assessment, ultrasonography for assessment of Prostate size along with Post-void residual urine and Uroflowmetry. The International Prostate Symptom Score (IPSS) is widely used to quantify symptom severity and assess the response to treatment.

Although modern medical and surgical approaches can provide significant symptomatic relief, adverse effects, treatment-related costs and procedural risks remain important considerations. Therefore, search for safe, economical, accessible, and patient-friendly conservative and rehabilitative approaches is particularly relevant for elderly individuals.

Ayurveda, with its holistic approach to health and disease, emphasizes maintaining functional capacity and promoting a healthy and independent life during old age. Classical Ayurvedic literature describes numerous approaches for disorders involving the urinary system, including medicinal preparations and therapeutic procedures.

In addition to the established conservative approaches, physical rehabilitation of the pelvic floor muscle definitely plays an important supportive role in improving urinary control. Shroni-Tala Balavardhana Abhyas strengthens and improves the functional coordination of the pelvic floor and perineal musculature. When performed in association with Avagaha Swedana, the combination of local warmth and repeated voluntary contractions and relaxations of the pelvic floor provide a comprehensive positive outcome in LUTS.

2. Concept of Shroni-Tala Balavardhana Abhyas

The term 'Shroni-Tala Balavardhana Abhyas' refers to an exercise form that enhances the strength and functional capacity of the muscles situated in the form of a hammock at pelvic floor and perineal region. The pelvic floor musculature contributes to pelvic organ support and urinary continence and participates in coordinated control of the urinary outlet.

Pelvic floor muscle training advised to the BPH patients involves repeated voluntary contraction and relaxation of the pelvic floor musculature with the objective of improving muscle strength, endurance, coordination and voluntary control of external urinary sphincter.

In elderly males with BPH, LUTS may result from a combination of anatomical obstruction and functional changes in the lower urinary tract. Consequently, interventions directed toward improving pelvic floor neuromuscular control provide supportive benefits, particularly for symptoms related to urinary control, urgency, frequency and post-micturition dribbling.

Role of Avagaha Swedana

Avagaha Swedana is an Ayurvedic sudation procedure in which the patient is advised to be seated in a warm water tub bath for approximately five to ten minutes.

The application of local warmth promotes relaxation of the pelvic and perineal musculature and provides symptomatic comfort. Warm-water also helps in reducing muscular spasm and promotes a sense of relaxation.

In this intervention, Avagaha Swedana is considered a preparatory and supportive procedure for pelvic floor exercise. The warm environment also helps the patient in providing greater comfort and awareness of the pelvic and perineal musculature.

The combination of local warmth and active pelvic floor exercise therefore represents an integrated approach in which Avagaha Swedana facilitates relaxation, while Shroni-Tala Balavardhana Abhyas provides active neuromuscular strengthening.

Methodology of the Practice

For performing Avagaha Swedana, the patient is advised to sit comfortably in a tub containing warm water for approximately five to ten minutes. The water temperature should be comfortable and tolerable for the individual patient. The patient is encouraged to maintain a relaxed posture and avoid unnecessary straining.

During the warm-water immersion, the patient is instructed to perform repeated voluntary contraction and relaxation of the pelvic floor and perineal muscles. Approximately 8-10 repetitions are performed during one session. The patient is advised to contract the muscles voluntarily and then relax them completely before repeating the exercise.

Normal breathing should be maintained throughout the exercise. The patient should avoid breath-holding or excessive abdominal contraction.

Possible Mechanism of Action

Strengthening of the External Urethral Sphincter

Simultaneous voluntary contraction and relaxation of the pelvic floor and perineal muscles improves the muscle strength and voluntary control of external urethral sphincter. The pelvic floor musculature contributes to urinary continence by supporting the urethra and assisting in maintaining outlet closure.

Strengthening pelvic floor musculature and sphincter control potentially contributes to better urinary continence and reduction in symptoms, viz. post-micturition dribbling, etc. This exercise, therefore, is particularly useful as a functional rehabilitation modality in elderly males.

Modulation of Bladder Activity

Voluntary pelvic floor contractions influence bladder activity through neural mechanism and assists in the voluntary suppression of urinary urgency. The ‘Perineo-Detrusor Inhibitory Reflex’ has been described as a mechanism through which pelvic floor activation inhibits unwanted detrusor activity. From a clinical perspective, improved pelvic floor control helps patients in responding more effectively to urinary urgency and contributes to better management of storage symptoms.

Improvement in Bladder Storage

Pelvic floor activation contributes to suppression of premature or involuntary bladder contractions and the patient potentially achieves better control during the bladder filling phase. This results in longer intervals between voiding and improvement in symptoms such as urgency, frequency, etc.

Improvement in Bladder-Sphincter Coordination

Normal urinary function requires coordinated activity between the detrusor muscle, bladder neck, urethra and pelvic floor. Dysfunction in this coordination contributes to urinary symptoms.

Pelvic floor muscle exercises improves neuromuscular awareness and voluntary control of the pelvic musculature. Appropriate relaxation of the pelvic floor is also essential during voiding. Therefore, the objective of Shroni-Tala Balavardhana Abhyas is not merely strengthening but also appropriate contraction-relaxation coordination.

Ayurvedic Interpretation

From an Ayurvedic perspective, Apana Vayu is described as governing force of all physiological activities occurring predominantly in the pelvic region, including the elimination of urine and faeces (Sharma & Dash, 2009).

Hence, the pelvic region is considered an important functional site of Apana Vayu. With advancing age, Vata Dosha naturally predominates, and age-related changes may influence the functional status of pelvic organs. Therefore, in disorders involving urinary dysfunction, consideration of Vata particularly Apana Vayu is crucial from an Ayurvedic framework to understand the clinical aspect.

Avagaha Swedana, through its warm and relaxing properties, may further be directed toward maintaining the functional balance of the pelvic region and supporting the physiological activity associated with Apana Vayu.

Clinical Observations

A clinical observational study was conducted in the Department of Shalya Tantra at Rishikul Ayurvedic College and Hospital, Haridwar on 102 patients diagnosed with BPH. The patients were advised to perform Shroni-Tala Balavardhana Abhyas along with Avagaha Swedana.

The intervention consisted of approximately ten minutes of practice, performed twice daily. The efficacy of the intervention was assessed using clinical and objective parameters, including the International Prostate Symptom Score (IPSS) and uroflowmetry.

The IPSS is a validated symptom assessment score used to quantify the severity of lower urinary tract symptoms and assess the impact of symptoms on patients' quality of life.

The uroflowmetry parameters evaluated included Maximum Flow Rate (Q_{max}) and Average Flow Rate. Uroflowmetry provides an objective assessment of urinary flow characteristics (Bhat, 2019; O'Connell et al., 2023).

Analysis of the data collected from 102 patients over the preceding two years demonstrated improvement in LUTS in more than 80% of patients based on uroflowmetric evaluation. Considerable improvement in IPSS scores was also observed, indicating substantial symptomatic relief.

3. Discussion

Shroni-Tala Balavardhana Abhyas provides a simple form of pelvic floor muscle training that can be performed without specialized equipment. The addition of Avagaha Swedana improves patient comfort and facilitates relaxation of the pelvic and perineal region. The combination therefore provides a supportive rehabilitative approach for patients with LUTS in BPH.

The observed improvement in IPSS suggests a reduction in overall symptom burden. Similarly, improvement in uroflowmetry parameters suggests a beneficial effect on urinary flow characteristics.

The intervention is also relatively simple, non-invasive and economical, making it potentially suitable as an adjunctive approach in elderly patients.

From an Ayurvedic perspective, the intervention may be understood in relation to the functional regulation of Apana Vayu. The attempt is to integrate the holistic treatment approach with a functional pelvic floor rehabilitation strategy.

The findings from the 102 patients observational study provide a basis for further encouragement to the patients for incorporating this Abhyas in their day-to-day activity alongside the conservative management.

4. Conclusion

Shroni-Tala Balavardhana Abhyas performed along with Avagaha Swedana represents a safe, simple, non-invasive, economical and patient-friendly supportive approach for managing Lower Urinary Tract Symptoms associated with Benign Prostatic Hyperplasia.

Its proposed mechanisms include improvement in pelvic floor muscle control, enhanced voluntary control of the urinary outlet, possible modulation of urinary urgency, and improved coordination between pelvic floor activity and lower urinary tract function.

Clinical observations among 102 patients demonstrated more than 80% of patients showing improvement on uroflowmetric evaluation and IPSS scores. These preliminary findings suggest that Shroni-Tala Balavardhana Abhyas with Avagaha Swedana has a valuable role as an adjunctive conservative intervention in patients with BPH associated LUTS.

Therefore, integrating pelvic floor rehabilitation with Ayurvedic supportive therapies represents a promising holistic modality for improving urinary symptoms and promoting good quality of life in patients of BPH suffering from Lower Urinary Tract Symptoms.

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