

# Combination of a New Visual Prostate Symptom Score (VPSS) and Maximum Urinary Flow Rate (Qmax) after Treatment in Men with Urethral Strictures to Determine Stricture Recurrence and Avoid Invasive Evaluation

**Introduction and Objective:** We have developed a visual prostate symptom score (VPSS) which offers a non-verbal, pictographic assessment of the force of the patient's urinary stream (Q1), frequency (Q2), nocturia (Q3) and quality of life (Q4). Recent studies have shown that, compared with the international prostate symptom score (IPSS) the VPSS takes significantly less time and is easier to complete without assistance, especially by men with limited education. Previous studies have shown that a combination of the IPSS and peak urinary flow rate (Qmax) can be used to determine urethral stricture recurrence after treatment, thus avoiding invasive testing. The aim of this study was to compare the VPSS, IPSS and Qmax in urethral stricture patients to detect stricture recurrence.

**Materials and Methods:** A total of 67 men (mean age 49.7, range 20.2-83.7 years) referred to the Stricture Clinic of our hospital were evaluated with completion of the IPSS and VPSS, maximum (Qmax) and average (Qave) uroflowmetry, urethral calibration and urethrography when indicated. Stricture was defined as a urethral lumen <F18. Men with stricture(s) were treated with urethral dilation in 83.9%, direct vision internal urethrotomy in 12.5% and urethroplasty in 3.6% of cases, and were followed up 3-monthly (total of 129 evaluations). Ethical committee approval was obtained. Statistical analysis was performed using Fisher's exact test and Student's t-tests where appropriate.

**Results:** Various combinations of IPSS, VPSS and Qmax were used to determine the combination that was of greatest value in predicting the presence or absence of a urethral stricture (Table).

IPSS<10 and Qmax>15ml/sec	IPSS≥10 and Qmax≤15ml/sec	IPSS<10 and Qmax<15ml/sec or IPSS>10 and Qmax>15ml/sec
N=19 (15%)	N=75 (58%)	N=35 (27%)
Stricture present	Stricture present	Stricture present
1	70	18
5.3%	93.3%	51.4%
Stricture absent	Stricture absent	Stricture absent
18	5	17
94.7%	6.7%	48.6%
VPSS<8 and Qmax>15ml/sec	VPSS>8 and Qmax<15ml/sec	VPSS<8 and Qmax<15ml/sec or VPSS>8 and Qmax>15ml/sec
N=11 (9%)	N=85 (66%)	N=33 (25%)
Stricture present	Stricture present	Stricture present
0	74	15
0.0%	87.1%	45.5%
Stricture absent	Stricture absent	Stricture absent
11	11	18
100.0%	12.9%	54.5%

**Conclusion:** A combination of VPSS>8 and Qmax<15ml/sec could predict the presence of a urethral stricture with 87% accuracy, and could have been used to avoid further invasive evaluation (urethrography, urethral calibration or urethroscopy) in 75% of study subjects.

## Keywords

Urethra, stricture, visual prostate symptom score, urinary flow rate