

PROSPECTIVE COMPARISON OF FREE FLOW RATE WITH FLOW RATE OBTAINED FOLLOWING FLEXIBLE CYSTOSCOPY

Aims of Study

In the investigation of lower urinary tract symptoms many cases can be reliably assessed from a good history and a simple measurement of maximum flow rate (Q-max) alone. To obtain a reliable flow rate patients must void a reasonable volume, as flow is dependent on voided volume [1]. Clinical trials have demonstrated that the reliability of Qmax can be improved by bladder instillation of a fixed volume [2], however it is not generally acceptable to catheterise a patient purely to obtain a urinary flow. Many patients being investigated for lower urinary tract symptoms will require a flexible cystoscopy along with uroflowmetry as part of their work up. This study compares simple uroflowmetry of men before and after flexible cystoscopy.

Methods

A prospective sample of eighty men attending for diagnostic flexible cystoscopy were consented and recruited for the study. Patients were initially asked to perform uroflowmetry using a Dantec Menuet flowmeter. Cystoscopy was then performed using a 17 French Olympus CYS3 cystoscope. At the end of the procedure the patient's bladder was filled with water until they felt the desire to void, the cystoscope was withdrawn and the patient performed a further void into the same uroflowmeter. All uroflowmeter printouts were manually read. Patients were excluded if they were noted to have a urethral stricture, or if their uroflowmetry trace suggested bladder sphincter dyssynergia. The data was analysed using the Students paired sample t-test (two-tailed). Statistical significance was assumed with a p value <0.05.

Results

Of the eighty men five were excluded for the reasons given above. The mean age was 62 years (± 14.6 SD) range 27-88 years. Table 1 demonstrates the results obtained along with the p values. There was no statistical difference between the variables of Qmax and Qave in the pre and post cystoscopy uroflowmetry. A statistically significant increase in post cystoscopy voided volume was noted ($p < 0.031$). Plotting the results on a scatter graph (chart 1) demonstrates a linear relationship for Qmax when comparing the pre and post cystoscopy values. Pearsons test showed a statistically significant correlation between pre and post Qmax ($R^2 = 0.615$) and Q-ave ($R^2 = 0.557$).

Table 1 mean \pm SD of variables pre and post cystoscopy.

	Mean \pm SD		Significance	Correlation
	Pre cystoscopy	Post cystoscopy		
Qmax mls/s	14.8 \pm 7.1	14.9 \pm 7.1	p = 0.85	$R^2 = 0.615$
Qave mls/s	8.0 \pm 4.3	8.3 \pm 4.0	p = 0.44	$R^2 = 0.557$
Void vol mls	255 \pm 132	290 \pm 117	p = 0.031	nil

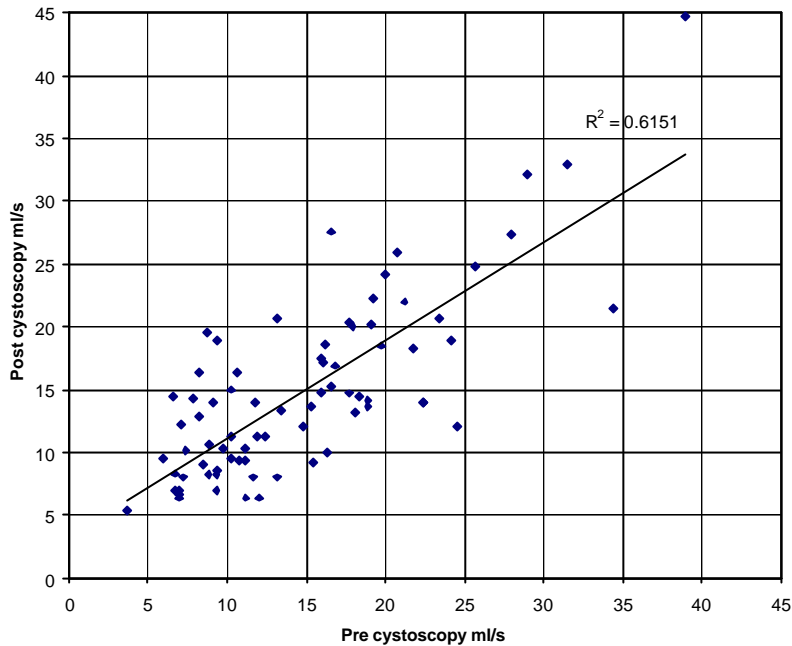


Chart 1. Pre and post cystoscopy Qmax

Conclusions

Previous studies have looked at the effects of urethral instrumentation on uroflowmetry with conflicting results. It is widely accepted that multiple free flow studies are more useful than a single result especially if clinical management or the need for subsequent pressure flow studies is based on the result. The aim of this study was to investigate our practice of performing uroflowmetry after diagnostic flexible cystoscopy compared to free uroflowmetry. Our results suggest that flexible cystoscopy and bladder filling prior to uroflowmetry does not significantly affect the Qmax or Qave, however it does produce a higher voided volume. The results demonstrate a degree of individual patient variability between subsequent voids, which is widely recognised. We are not advocating the use of a cystoscope purely to fill the bladder, however we suggest that this method can be used to produce clinically comparable results when uroflowmetry is required. The benefit of this method is that in patients who require a flexible cystoscopy and a free flow, additional appointments at uroflow clinics are avoided, and patients who have trouble attending clinic with a suitably filled bladder can have free flows easily performed.

[1] Abrams et al. *BJU* 1995; **76**(1): 11-15

[2] Yukio et al. *Int J Urol* 1995; **2**: 322-325