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BLADDER CONTRACTILITY AND VOIDING EFFICIENCY IN MEN WITH BLADDER OUTLET OBSTRUCTION TREATED CONSERVATIVELY AND BY TURP

Aims of Study

An ongoing study to determine the natural history of men with lower urinary tract symptoms (LUTS) has previously shown little deterioration in bladder outlet obstruction (BOO) in patients treated conservatively, and a long term reduction in BOO following TURP (1). In order to describe the voiding function more precisely, bladder outlet obstruction index (BOOI), bladder contractility index (BCI) and bladder voiding efficiency (BVE) were calculated It has previously been suggested that men with large residual urines undergoing TURP have a failure of contractility, possibly related to a widespread degeneration of muscle cells and axons found in the elderly. However, a large residual urine has subsequently been shown to correlate with a high detrusor pressure at maximum flow (pdetQmax), suggesting any decompensation by the detrusor is not related to a fall in pdetQmax (2) TURP has not been shown to improve detrusor contractility in short term studies using the Hill equation (3)

Methods

71 men treated conservatively and 126 men who underwent a TURP for LUTS due to BOO were followed up at least 10 years later (median 13 years) All subjects were over 45 years of age, and underwent pressure flow studies (PFS) initially and at follow up, which included measurent of maximum flow rate (Qmax), pdetQmax, voided volume (VV) and total bladder capacity (BC) (voided volume + residual volume).

BOOI, BCI and BVE were calculated as.

BOOI = pdetQmax - 2Qmax

BCI = pdetQmax + 5Qmax

BVE = (VV/BC) x 100

Statistical analysis was performed using the paired t-test for the normally distributed data, and the Willcoxon signed ranks test for the BVE data, as this was not normally distributed.

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Results

The results are presented in table 1 and 2 and show no change in the PFS measurements for the conservative group, apart from a slight reduction in BCI There was a significant improvement in all PFS measurements for the TURP group

Table 1 Initial and follow up PFS data for 71 men treated conservatively

	Qmax	PdetQmax	BOOI	BCI	BVE
Initial PFS	9.8	85 4	66.2	134.1	89.9
Follow up PFS	9.2	80.1	62.1	125.8	84.7
P value	0 194	0 164	0.321	0 040	0 096

Table 2 Initial and Follow up PFS for 126 men treated by TURP

	Qmax	pdetQmax	BOOI	BCI	BVE
Initial PFS	7 5	100.5	85 7	137 9	76.8
Follow up PFS	12 2	45 3	22 8	107 1	91 4
P value	<0 001	<0.001	<0.001	<0 001	<0.001

Conclusions

The slight deterioration in BCI, without a change in BOOI or BVE for the group treated conservatively, suggests little change in voiding function, and that untreated BOO does not lead to chronic retention

The reduction in BCI and improvement in BVE in the TURP group demonstrates a long term improvement in voiding function The change in BCI could represent a long term improvement in contractility after TURP, or could be due to a problem using this simple formula, compared to more complicated methods of measuring contractility.

References

1 Neurourol urodynam (1998) Proceedings of the ICS. Abstract 51a and 51b.
2 Br J Urol (1987), 60 560-6
3. J Urol (1992); 148.1856-60

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