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EFFECTS OF EJACULATION BY PENILE VIBRATORY STIMULATION ON URINARY BLADDER CAPACITY IN MEN WITH SPINAL CORD INJURY

Aims of Study

In previous studies (1,2) a reduction in lower extremity spasms and, in particular, spasticity has been reported in men with spinal cord injury (SCI) following reflex ejaculation induced by penile vibratory stimulation (PVS). Furthermore, in a recent report (3) a significant increase in bladder capacity due to suppression of urinary detrusor reflex activity was observed in one SCI man following vibration induced ejaculation. These observations initiated the present investigation of the effects of ejaculation induced by PVS on urinary bladder capacity in a larger cohort of SCI men.

Methods

The study was unblinded and prospective and every person served as his own control. While participating in the study, all test subjects continued their pre-study bladder management (e.g. anticholinergic drugs, urinary drainage methods).

PVS was performed with a vibrator at an amplitude of 2.5 mm and a frequency of 100 Hz (Ferti Care® *personal*, Multicept A/S, Hørsholm, Denmark).

Urodynamic evaluation included cystometry, electromyography and urethral pressure profile measurements. Each SCI man went through four investigations over a period of approximately one month. SCI men using PVS regularly were instructed not to do so for at least two weeks before entering the study in order to minimize any possible pre-effect of PVS on urinary bladder function.

Cystometry was performed before and immediately after ejaculation by PVS in order to establish baseline conditions and was repeated following one month of ejaculation by PVS every third day. The third cystometry was conducted following one month of ejaculation by PVS every third day at home in order to examine any long term effects of the treatment. This third cystometry was carried out 72 hours after the last ejaculation in order to exclude any acute effects of ejaculation by PVS on the detrusor hyperreflexia. Finally, one to three days later, ejaculation was induced by PVS and immediately followed by cystometry in order to examine if it was possible to achieve an acute effect in addition to a potential long term effect.

Results

Fourteen men with SCI from C4 to T7 (12 complete) were included. Baseline cystometry demonstrated detrusor hyperreflexia and external sphincter dyssynergia in all individuals. There was no statistically significant difference in bladder capacity at leakpoint before and immediately after ejaculation by PVS, but after 4 weeks of frequent PVS treatment the bladder capacity at leakpoint increased significantly from a median of 190 ml (17-700 ml) at baseline to 293 ml (30-700 ml) ($p=0.03$) (Table 1). Furthermore, there was a trend towards a decrease in intravesical pressure during the filling phase. No significant changes in the urethral pressure profiles were observed.

Conclusions

Ejaculation by PVS demonstrated a significant increase in bladder capacity at leakpoint following 4 weeks of frequent treatment. This may have implications in the management of incontinence in SCI men.

References

1. Sonksen J, Biering-Sorensen F, Kristensen JK. Ejaculation Induced by Penile Vibratory Stimulation in Men With Spinal Cord Injuries. The Importance of the Vibratory Amplitude. Paraplegia, 1994;32:651

2. Szasz G, Carpenter C. Clinical Observations in Vibratory Stimulation of the Penis of Men With Spinal Cord Injury. Arch Sex Behav 1989; 18: 461

3. Laessoee L, Sonksen J, Bagi P et al. Effects of Ejaculation by Penile Vibratory Stimulation on Bladder Reflex Activity in a Spinal Cord Injured Man. J Urol 2001; 166: 627

Table 1. Bladder capacity at leakpoint. All parameters are measured in ml.

PERSON	BASELINE	IMMEDIATELY **AFTER PVS**	4 WEEKS OF TREATMENT	IMMEDIATELY **AFTER PVS**
1	**340**	**700**	**700**	**310**
2	**35**	**160**	**365**	**265**
3	**700**	**700**	**700**	**700**
4	**195**	**230**	**150**	**190**
5	**185**	**345**	**500**	**500**
6	**500**	**700**	**700**	**700**
7	**17**	**110**	**85**	**200**
8	**175**	**50**	**70**	**95**
9	**36**	**57**	**220**	**195**
10	**285**	**217**	**187**	**355**
11	**70**	**47**	**187**	**48**
12	**32**	**95**	**30**	**56**
13	**360**	**600**	**560**	**118**
14	**500**	**110**	**500**	**600**
MEDIAN	**190***	**189**	**293***	**233**
RANGE	**17 - 700**	**47 – 700**	**30 - 700**	**48 - 700**
95% c.i.	**35 - 500**	**57 – 700**	**85 - 700**	**95 - 600**

PVS = penile vibratory stimulation

The bladder capacity was registered at leak point defined by the observed presence of leakage of urine from the urethra (maximum filling 700 ml)

*) p = 0.03, Wilcoxon signed rank test.