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Maximum Perineal Stimulation. A Controlled Study

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Summary—Previous workers have debated the value of maximal perineal stimulation (MPS) in the treatment of urinary incontinence in women. In order to assess the efficacy of this simple technique a prospective study was undertaken on 107 consecutive incontinent women. They included those with stress, urge and mixed patterns of leakage.

Patients were placed at random into treatment and control groups. All underwent clinical assessment, urodynamic study and a single session of pelvic floor re-education with measurement of pelvic contraction and cystoscopy. Those in the treatment group were given MPS using monophasic square wave pulses while under anaesthesia. Independent follow-up assessment was performed 6 and 12 weeks after treatment.

Of the 107 patients 94 completed the trial. Forty-five were treated and 49 acted as controls. Analysis of age, parity, duration and severity of incontinence showed that randomisation had produced comparable results between the treated and the control groups. Sixty per cent of the treatment group and 66% of the control group had significant symptomatic improvement. Pelvic floor function was re-assessed, using a perineometer, and found to be more efficient, having increased equally in both groups.

Both groups of women improved irrespective of the pattern of incontinence. This suggests that MPS does not contribute to the management and that a single physiotherapy session with skilful counselling can produce beneficial results in women with all types of urinary incontinence.

In 1967, Moore and Schofield recommended a single treatment using faradic stimulation of the pelvic floor muscles in the management of stress incontinence. Their work was supported by Collins (1974) but others have not found this simple technique to be of use. We report the results of a controlled trial designed to explore the efficacy of maximum perineal stimulation in the management of stress, urge and mixed incontinence.

Patients and Methods

Depending on their symptoms, female patients were placed into three categories: those having stress incontinence, urge incontinence and mixed incontinence. Within each category they were further allocated at random into trial and control groups. All women were admitted for the day. Using a set questionnaire, one doctor took a clinical history, made an examination and undertook urodynamic studies which included urethral profilometry and filling and voiding cystometry. These patients had individual tuition from a physiotherapist who in a single session explained the place of the pelvic floor muscles in the prevention of urinary leakage and how to exercise this muscle group using vaginal assessment and a perineometer. In addition, all had a cystoscopic examination under general anaesthesia. At this time a sealed envelope was opened stating which group the patient was in. Those in the trial group received maximum perineal stimulation using a Scott electrode placed in the vagina with a large indifferent electrode under the buttocks. Following

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cystoscopy an electrical stimulation was given using a current of up to 40 volts with a frequency varying between 10 and 50 Hz for 20 min. The vaginal electrode remained in place in the recovery room and reinforcement of pelvic floor re-education was continued whilst the patient regained consciousness

Those in the control group had a vaginal electrode inserted after cystoscopy but no current was passed. They were encouraged to contract their muscles similarly whilst in the recovery room.

Assessment was undertaken 6 weeks and 12 weeks after treatment by another doctor who had no knowledge of the treatment group of any patient. Follow-up questionnaires were completed on both occasions, seeking information on whether the patient thought her symptoms had deteriorated, remained unchanged or improved. A diary was kept which recorded the number of pads worn and the number of episodes of incontinence. This was used to obtain data which would support or contrast with the subjective questioning. Comparison of pelvic floor function was also made with the same perineometer that had been used during the initial assessment.

Results

One hundred and seven consecutive women were admitted and 94 completed the trial. Table 1 gives the numbers of patients by type of incontinence and the treatment allocation. There were insufficient numbers in each category to analyse the data separately and the results are given overall. However, whether the patient complained of stress, urge or mixed incontinence, the pattern of results was similar.

Analysis of age, parity, previous treatment, duration and severity of incontinence showed that randomisation had produced comparable groups. Breakdown of the urodynamic data made no difference to the overall results of the study. Tables 2 and 3 give the results of the frequency and severity of incontinence in both trial and control groups and Table 4 shows the alteration in the use of pads to control urinary leakage. Table 5 compares pelvic floor control before and after treatment. Actual values are not given since the perineometer used recorded arbitrary measurements only.

There was no suggestion that following treatment the proportion of patients admitting to a reduction in frequency or severity of incontinence or pads used was different in the two groups.

Table 1 Numbers of Patients by Incontinence Type and Allocation

Incontinence type	*Treatment*	*Control*	*Total*
Stress	18	24	42
Urge	12	14	26
Mixed	23	16	39
Total	53	54	107

Table 2 Frequency of Incontinence

	Trial (45)	*Control (49)*
Better	29	31
Same	3	7
Worse	13	11

Table 3 Severity of Incontinence

	Trial (45)		*Control (49)*	
	Pre	*Post*	*Pre*	*Post*
Dry	0	8	0	6
Drops	6	7	11	13
Wet pants	35	30	33	29
Severe	4	0	5	1

Table 4 Pad Changes

	Trial (45)	*Control (49)*
Less	18	18
Same	14	21
More	13	10

Table 5 Pelvic Floor Control

	Trial (45)	*Control (49)*
Better	22	26
Same	19	19
Worse	4	4

Equally, while pelvic floor contraction appeared to improve, it improved equally in both those receiving MPS and those who did not.

To the direct question "Would you say the leakage is ..." together with a five-point scale ranging from "Very much better" to "Very much worse", patients gave the answers in Table 6. Thus approximately 60% of the trial group and 67% of the control group showed significant improvement.

Table 6 Direct Questions

	Trial (45)		*Control (49)*	
Much better	9	60%	10	67%
Better	18		23	
Same	12	27%	14	28%
Worse	6	13%	2	5%
Much worse	0		0	

Discussion

The essence of this method of electrical stimulation in the treatment of troublesome urinary incontinence is its extreme simplicity. Even the 30% cure rate obtained by Moore and Schofield (1967) and Collins (1974) is impressive when compared with the complexity and time involved in recognised methods of management. There has been no previous report of a study to examine the effectiveness of perineal stimulation given in a single treatment and aimed at excluding all the extraneous factors such as hospital admission, physiotherapy and tender loving care.

Assessments were largely based on patients' subjective statements and were recorded by a single observer who was unaware of the treatment allocation of the individual patients. In all of the criteria used there was no indication of a superior outcome in the trial group and in answer to direct questioning a higher proportion admitted to improvement than when using other end-points as an indicator of change. This presumably reflects the patient's desire to please the doctor!

Both groups of women improved equally, irrespective of the pattern of incontinence or of the urodynamic diagnosis. This suggests that maximum perineal stimulation does not contribute to the management of urinary incontinence when given in conjunction with cystoscopic examination and a single session of pelvic floor re-education. Physiotherapy or cystoscopy together with skilful counselling may well be equally effective. Alternatively, any changes we observed may have been due to a placebo effect.

References

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