

# The Treatment of Rectal Incontinence by Surged Faradic-Type Current Stimulation\*

J. H. GROENEWALD, M.B. CH.B. UNIV. PRET., M.MED. (CHIR.) UNIV. STELL., *Department of Surgery, University of Stellenbosch and Tygerberg Hospital*, M. J. RUNNALLS, *Department of Physiotherapy, University of Stellenbosch*, AND R. E. ESSLINGER, *Department of Physiotherapy, Karl Bremer Hospital, Bellville, CP*

## SUMMARY

A case history of physiotherapy given to a 12-year-old girl, suffering from rectal incontinence as a result of necrosis of the anal tissue and disuse of the pelvic floor muscles, is described. Conventional pelvic faradism was administered with an intra-anal Scott-type electrode with little increase of tone of the pelvic floor muscles. However, when the same technique was used, and administering surged faradic-type current under anaesthesia to obtain maximum contraction of the pelvic floor muscles, muscle tone increased dramatically and a fully competent anal sphincter was regained.

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Treatment by maximum perineal electrical stimulation of the pelvic floor muscles for stress incontinence of urine has frequently been used.<sup>1</sup> We could, however, find no reports in the literature of this type of treatment having been used for the treatment of faecal incontinence. This report describes the successful treatment of a case of faecal incontinence, using maximum perineal electrical stimulation.

## CASE HISTORY

From January 1971, a 12-year-old White girl was treated for acute lymphoblastic leukaemia. After 6 weeks of treatment with vincristine and prednisone she suffered a relapse, simultaneously developing a *Pseudomonas* infection. Her treatment was modified to 6-mercaptopurin and prednisone, the dosage of the latter being gradually diminished. After this treatment the patient went into full remission.

During the period of the relapse, the patient developed what appeared to be a *Pseudomonas* septicaemia, causing septic arthritis of the interphalangeal joints of the fingers of the left hand and severe necrosis of the anus and perianal tissues. A defunctioning colostomy was performed to allow the perianal tissues to heal. Although the infection cleared, the amount of perianal destruction was so great that total incontinence resulted and the patient was discharged with her colostomy.

In January 1972 she was readmitted. The leukaemia was still in remission and the anal wound had healed satisfactorily. On examination, however, there was a defect of the anal sphincter with complete absence of sphincter contraction, resulting in total incontinence. Only a fibrotic band stretching two-thirds around the anus

could be palpated. There was also severe weakness of the pelvic floor muscles with total absence of muscle tone. Neither sphincteric nor pelvic floor muscle contractions could be evoked.

The patient was referred to the Physiotherapy Department on 4 January 1972 and was treated with simple faradic-type stimulation and exercises for the pelvic floor muscles. This treatment seemed to produce some improvement in the contraction of the anal sphincter but incontinence persisted.

On 27 January 1972 faradic-type stimulus was administered under general anaesthesia—giving 5 maximum electrical stimuli. This resulted in definite improvement in the tone of the anal sphincter, but still insufficient to render the patient continent. The patient was again discharged, with a programme of home exercises to strengthen the pelvic floor muscles. When readmitted on 14 April 1972, it appeared that these exercises had produced a definite improvement in the strength of the pelvic floor muscles.

On 18 April 1972 the maximum faradic-type current stimulation under anaesthesia was repeated with a further improvement of anal sphincter tone, to such an extent that it was decided to close the colostomy.

The pelvic floor muscles were again stimulated under anaesthesia on 20 April 1972 with still further improvement of tone. On 22 April she defaecated normally for the first time following closure of the colostomy, and total continence ensued. On 24 April she was discharged completely continent and with normal anal sphincter tone.

## Programme of Physiotherapy Treatment

Initially, surging faradic-type current stimulation for the pelvic floor muscles according to technique No. 5 as described by Scott *et al.*<sup>2</sup> was used. An intra-anal Scott-type electrode was used as the active electrode, while an inactive electrode (15 cm × 10 cm) was placed over the lumbosacral region.<sup>2</sup> The frequency of stimulation was 12 per minute. Contractions were evoked twice daily for a period of 20 minutes. Stimulation was given for 1 minute, followed by a resting period of 1 minute throughout the 20 minutes.

The treatment was continued for 3 weeks, excluding the weekends. At the same time exercises to strengthen the pelvic floor muscles were taught, these being made increasingly more difficult by varying the starting positions from lying, to sitting and finally to standing. The first signs of increased intra-anal tone were noticed 2½ weeks after the beginning of the treatment.

\*Date received: 23 November 1972.

Because the rate of improvement was disappointingly slow, the physiotherapy technique was changed to that of maximal stimulation of the pelvic floor muscles with a surged faradic-type current under general anaesthesia, as described above, with the patient in the lithotomy position. It was only possible to elicit 5 contractions of the pelvic floor muscles before fatigue occurred. At this stage, with the patient in the lithotomy position, the relaxed anus had a diameter of 2,5 cm.

Immediately after this treatment the sphincteric tone had improved noticeably. Further improvement of the tone of the pelvic floor muscles could be noticed up to 24 hours after the stimulation.

It was at this stage that the patient was discharged on a carefully controlled programme of home exercises to strengthen the pelvic floor muscles. On readmission 3 months later, the pelvic floor muscle tone showed further evidence of improvement. Surged faradic-type current stimulation under general anaesthesia for maximum contraction was again employed and the colostomy was closed. At this stage the relaxed anus under anaesthesia had a diameter of 1,5 cm in comparison with 2,5 cm before treatment with maximum perineal electrical stimulation was commenced. Two days after closing the colostomy, a final treatment of maximum stimulation under anaesthesia was given and the patient was discharged completely continent.

## DISCUSSION

This report has described the treatment of a young White girl with rectal incontinence by means of an intra-anal active electrode and surged faradic-type current stimulation.

As the usual type of faradic-type electrical stimulation caused little improvement after 3 weeks of treatment, it was decided to use the technique of maximum perineal electrical stimulation under anaesthesia, as described by Moore and Schofield<sup>1</sup> for the treatment of stress incontinence of urine. This led to a dramatic improvement of the pelvic floor muscle tone and control of the anal sphincter was regained.

During the first treatment of maximal contractions of the pelvic floor muscles under anaesthesia, it was found that after 5 maximal contractions, followed by a reasonable rest period, it was impossible to stimulate the pelvic floor muscles again due to the onset of fatigue. This is in accordance with the finding of Scott *et al.*<sup>3</sup>

The actual amount of improvement in contraction of the pelvic floor muscles by their action on the intra-anal electrode was striking. During the first stimulation with maximal current it could be felt that the muscles contracted merely to enclose the electrode, but during the second treatment with maximal current the contractions of the muscles were so strong that the electrode was actually forced out of the anal canal and the physiotherapist could not maintain the intra-anal electrode in the anus at any cost.

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