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European Association of Urology

Editorial

Twenty Years of Urotherapy in Children: What Have We Learned?

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Starting in the late 1980s and originating in Scandinavia, “urotherapy” for children with voiding problems found its way throughout the medical world. “Urotherapy” means nonsurgical, nonpharmacologic treatment of lower urinary tract function and can be defined as a bladder re-education or rehabilitation program aiming at correction of filling and voiding difficulties. It is thus synonymous with the term “lower urinary tract rehabilitation,” frequently used for adults [1].

Anna Helena Hellstrom first published her results on intensive bladder rehabilitation in children in 1987 [2]. She is a specialized nurse who combines a bladder regimen with biofeedback. The word “urotherapy” for the training and “urotherapist” for the trainer first appeared in a publication of the same group in 1992 [3].

Other European centers followed. Our group reported on outpatient training in 1996 with an immediate success rate of 92% and a long-term effect of 82% [4]. We combine bladder regimens with pelvic floor biofeedback and biofeedback uroflowmetry. Training is given by specialized physiotherapists.

The Utrecht group reported on inpatient training in 1997 and reported a success rate of 80% [5]. They use a cognitive training program that combines voiding and drinking charts, biofeedback uroflowmetry, and a wetting alarm in an inpatient setting. The training is given by a specialized child psychologist.

We had to wait to the end of the 1990s before the United States started to believe the concept of urotherapy. McKenna was one of the first Americans to report on urotherapy using more sophisticated computer games [6]. Once again a 90% success rate is reported.

In this issue of the journal the Hong Kong group present their results on half-day urotherapy in children with dysfunctional voiding and the results are similar, with a success rate of 90% [7]. Along with teaching the child about bladder function, bladder regimen, biofeedback uroflowmetry, and learning how to relax the pelvic floor muscles without using abdominal or gluteal muscles are the clues of this short course. A similar report on a short course consisting of patient information and biofeedback uroflowmetry was published this year [8]. A similar success rate of 90% is reported.

All these different groups propose different training programs given by different professionals but the results are, in general, about 90% in the short follow-up and about 80% in the long-term follow up. The impression arises that not what, how, and how long you train influence the outcome, but just the fact of training and giving attention can be enough to obtain a good result.

Depending on the source, between 10% and 25% of children will suffer some voiding dysfunction [9]. From the reports on urotherapy it seems that about 90% can be helped during childhood. The question

DOI of original article: 10.1016/j.eururo.2005.12.001

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remains what happens to those who fail this urotherapy.

A recent publication by Bower et al gives an indication; they will take the difficulty into adulthood [10]. In an adult urogynecologic unit, 50% of women presenting with bowel and bladder dysfunction can recall a history of bladder and bowel dysfunction in childhood.

The question remains whether we are treating those who will be cured by time. Until the national history of this condition is clear, we cannot answer this question.

Urotherapy can be considered standard therapy for children suffering lower urinary tract symptoms. The essential elements of urotherapy, however, remain unclear. As stated in the manuscript of Bower et al “The learning of skills requires practice and correction and repeated performance of the optimal manoeuvre,” indicating that the goal can be obtained by different ways, as long as the aim of the training is the same. For pediatric voiding dysfunction, it means learning to know the bladder, letting it fill, and emptying it well.

The major problem with most of the urotherapy modalities is that there are no randomized controlled trials on the effect of each treatment modality. Furthermore, most centers combine treatments like voiding and drinking charts, instructions on toilet position, pelvic floor biofeedback, and uroflow biofeedback, which makes it impossible to evaluate the effect of each modality.

Despite this lack of randomized controlled data we can state that urotherapy works. Which urotherapy? It seems that there is no difference between the different training modalities. Even the background of the health worker providing urotherapy seems to be of no importance. Nurses, psychologists, urotherapists, and even doctors can be urotherapists. As long as they have the ability to teach and know what to teach, there is no difference. Learning and relearning, reinforcing, and rehearsing seem to be the tools to correct unconscious physiologic processes. Despite the fact that this relearning seems to correct malfunction, we still do not exactly know the underlying pathophysiologic mechanism of the malfunction. Is it a wrong toilet training that induces the problems? Too early? Too late? Both have been reported. Are there some slight structural anomalies, either in the lower urinary tract or in the nervous system supplying the lower urinary tract, that are inducing the wrong voiding mechanisms? Is there a delay in maturation or a different maturation? What are the effects of schools and school toilets on the development of normal voiding function? What is the effect of modern life and

lifestyle on bladder development? Numerous questions still need to be answered.

What is the excellent pediatric urotherapy program? In fact, the program with the best result at the lowest cost can be considered as the best program.

The short course described in the manuscript in this issue meets these described needs. Whether these good results reported here can be obtained in all patients is unclear. Until we have a definitive standardization of terminology a panoply of patients are included in different studies. Comparing results is therefore difficult. Indeed, the terms “voiding dysfunction” and “dysfunctional voiding” cover a lot of different entities with varying severities. The severity can range from a slight degree of detrusor overactivity to an extreme overactive bladder with a nonrelaxing pelvic floor during voiding, large residual urine, recurrent urinary tract infections, and severe obstipation. The degree of incontinence can vary and the numbers of former unsuccessful treatments can be variable. Therefore we need to define more clearly the kind of patients we include in studies evaluating the effect of urotherapy. The different components of the different urotherapy programs deserve a separate evaluation to sort out which part of urotherapy is the most essential to obtain a good result. In addition, controlled trials are needed. The best control group would be a group of patients who are followed without any treatment, which would allow us to obtain information about the natural history of the dysfunction.

Without these results available I still believe that it might be rather the teaching qualities of the urotherapist than the program itself that are responsible for the good outcome.

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