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Title (type in CAPITAL LETTERS): HOME THERAPY WITH INTRAVESICAL ELECTROSTIMULATION (IVES) IN MICTURITION PROBLEMS.

INTRODUCTION AND AIM OF THE STUDY

The voiding disturbances or the problems in the storage function are the causes of many clinical problems; pharmacotherapy or clean intermittent catheteritazion or innovative surgical procedures are normaly accepted for the treatment of these conditions. There is less experience in the use of Intravesical Electrical Stimulation (IVES); the first experience was described by Catona (1958)**(1)** and popularized by Madersbacher, that practiced on patients with neurogical bladder. This therapy , in spite of the fact that other methods were introduced, is still the only one that in selected cases promise the patient the improving bladder function.

Essential requisite of this method is that some axons between the peripheral and the central nervous systems are still intact to obtain a good signal trasmission to build-up a well reflex mechanism (2-3).

Intravesical electrotherapy is based on the activation of mechanoreceptors afferents in the bladder wall by transurethral electrostimulation using a special catheter as a monopolar electrode and with saline in the bladder leading medium.

IVES is used in patients with detrusor areflexia or hypocontrattility due to neurological damage, but in most centres IVES is used also successfully in non-neurological detrusorial hypocontractility and to inhibit detrusor contractions. Normally this practice is used ambulatorialy, with use of biofeedback by a pressure column or by cystomanometry ; this method involved a discomfort for the patient and for the team of rehabilitation, because the therapy is daily and the duration of the stimulation ranged from 60 to 90 minutes. We are utilizing this therapy training the patients when possible (or a familiar), to use at home daily IVES. Patients achieve good results with a long training and so with home therapy they avoid daily acess to the hospital.

MATERIALS AND METHODS

Therty-three patients, 17 females and 16 males underwent home IVES,: for 26 patients (aged 6 to 72,mean age 42,1) the therapy was performed to improve detrusor contractility using a low frequency (20 Hz); in the other seven cases (aged 1 to 5) we treated myelodisplastic patients with uncomple neurological lesions. The intensity of the stimulation was usually 20 Hz but in 1 case it was 70 Hz; duration of single impulse was 2 msec.each package and pause lasted 10 sec. and rise time varied during the stimulation. Each session lasted 60 - 90 minutes and the application was daily and the number of the sessions were from 3 to 225.

IVES was performed (when possible) after filling the bladder with about 100 cc of normale saline; electrical impulse packages were applied to the positive catheter electrode, while the negative one was placed on the arm.

At the beginning all patients with a-hypocontractility were on CIC and abdominal

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straining, (mean 2 CIC) ; the patients with myelodisplastic pathology were on intermittent catheterization and 3 with oxybutinine. A urodynamic study was performed before and at the end of treatment and the patients used a flow-chart.
Before beginning home therapy, the patients were trained to use the stimulator with two or three trial stimulations. The home stimulation was obtained using the UROPLUS A20 (SANICA) and the UROTRAIN (SI.EM.) .
The follow up ranged from 2 months to 3 years.

RESULTS

In the group of patients with A-Hypocontractility we noticed a decrease of residual volume and in the patients on CIC we noticed a decreased number of catheterizations (mean 1,5/day); 4 patients obtained voluntary micturition with low residual volume. Bladder sensation improved in the 80% of patients. In 4 patients no changes were obtained.
In the group of patients with mielodisplasy 1 patient was unchanged; the others 6 obtained an improved of urinary continence and bladder control .
One patient suspended the treatment after two applications for an episode of hematuria. The others patients showed good compliance with no drop out. Urinary tract infection was noted after catheterization in one patient.; bacteriuria in 3 cases. One patient suspended for paresthesia.

CONCLUSIONS

The IVES remains a controversial mode of therapy for patients with neurogenic or non-neurogenic bladder disfunction, in part because is unclear the precise mechanism of action; however patients with a wide variety of lesions responded to this therapy and it isn't possible to predict a successfull outcome.
In cases of patients not showing any kind of benefit, this is mainly due to long term complete bladder retention with overdistension and infections (we found only an improvement in bladder sensitivity).
Our experience with home intravesical electrostimulation is satisfactory. The good results obtained in neurological and non neurological bladder confirme the need to continue , when possible, the use of this therapy in the treatment of bladder damage. The IVES is an effective method for rehabilitation of bladder, but time-consuming, so we think that the use at home of the stimulation can reduce this problem for the nurse (and the physician) and besides is well tolerated by the patients, when is correctly instructed to the use.
We think also that IVES should be first step in tratment of neurogenic bladder in myelodisplasia.

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