The conservative management of patients with anorectal pathology

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Background and aims. To introduce into clinical practice the biological feedback method of postoperative rehabilitation of patients with congenital anorectal pathology and to develop the necessary equipment for the above mentioned procedure.

Methods and materials. 182 patients with postoperative anal sphincter insufficiency, treated in Pediatric Surgery Center from 1995 to 2014. In the group there were 105 males and 77 females aged from 12 months up to 16 years old. Operative anorectal pathology correction had been administered to all of the patients, who had various anorectal pathologies. Only children aged 5 and above underwent the rehabilitation process because younger patients initially had a negative attitude to it and refused to take part in the experiment. Before the session all stages of the anal sphincter stimulation had been explained to the patients. Basic patient's complaints were those of fecal incontinence (60%) and soiling (40%). For the treatment was used developed and constructed by us Biological Feedback Complex, which consists of a feedback device, a computer with a special programme, and rectal sensors. The course of the therapy included 10-15 daily sessions of 10-20 minutes each.

Results. The System Feedback Stimulator is a new type of equipment, which gives an opportunity to control in the real-time regime the physiological parameters of a patient and this idea was used in the treatment. The therapeutic effect of the method is based on the corticovisceral connection reconstruction, which is in charge of the anal sphincter function. Biological feedback method gives the patient video or/and audio forms of information about his/ her current physiological parameters. In course of the feedback procedure the patient can consciously change these physiological parameters if they are exactly known. Thus, the activation level of parameter regulatory system in the brain changes as well. This technology helps to halve rehabilitation terms. The patient has to tense the anal sphincter and to keep this tension at the necessary level. At this time the device (EMG-sensor) registers the electromyogram and shows this information on the screen in the form of graphics for adults or like a game for children. The fact that the patient can see the information about the tension makes it possible to correct and control its force and duration, which in its turn increases the rehabilitation efficiency and reconstructs corticovisceral connection. The efficiency of this method is controlled with the help of electromyography (EMG). Contractile anal sphincter function is registered by interfacial EMG. Average amplitude is 300±59 microvolt. Bioelectrical activity of this muscle gradually increases, so the amplitude reaches its climax after 15 minutes of stimulation. There were 131 patients with positive results of the therapy. Complete remission or reliable decrease of the amount of fecal incontinence (when patients are satisfied with the quality of their life) were considered to be the positive results. Remote results (6-8 months) were observed in all cases. 109 patients had long lasting effects of the therapy, the rest had relapses 2 months after they finished the therapy. These facts prove the necessity to develop and perfect the method itself.

Conclusion. Biological feedback method is noninvasive, cheap and practically doesn't have any contra-indications. It is an effective method of postoperative rehabilitation of children with anorectal pathology.