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EVALUATING PFM OF POST-POLIO SYNDROME (PPS)

Hypothesis / aims of study

Egypt was one of the six countries where polio was endemic until 2004. Stella Egyptian Uma ,shows the atrophy and shortening of the right leg which very likely due to polio.

Evaluating the conditions of the pelvic floor musculature and identifying factors related to weakness in this musculature, severity and onset of symptoms in volunteers with post-polio syndrome (PPS). Evaluating spontaneous and enquired complaints after explanations relevant to urological, fecal, sexual and gynecological systems and relating them to evaluation data of pelvic floor (PF) function and dysfunction. Functional evaluation of pelvic floor (FEPF). Quantitative evaluation of strength and resistance of pelvic floor muscles, and the correlation of FEPF with perineometry.

Study design, materials and methods

The series consisted of 83 patients diagnosed with PPS. This syndrome is a neurological entity which causes new muscle weakness and/or abnormal muscle fatigue in patients with a prior history of acute poliomyelitis during childhood or adolescence, more than 15 years after their acute polio episode, confirmed by a detailed analysis of their medical chart or occurrence of an epidemic outbreak in a given community. Patients presented with muscle atrophy, weakness and arreflexia, in at least one limb. These new symptoms may occur in muscles not functionally affected before, and can persist for at least one year. **Data source** – Based on the Evaluation Report and Function and Dysfunction Terminology of pelvic floor muscles (PFM) of the International Continence Society (ICS), a physical therapeutic evaluation form of functions and dysfunctions of pelvic floor muscles was developed, adapted for use in patients with a neurological entity, in particular those diagnosed with PPS. Additional tests completed this evaluation. The form included general questions, regarding the existence of complaints related to the urological, fecal, sexual/gynecological systems. Patients' motion was observed, and specific clinical tests were carried out (visual inspection and palpation), observing distinctive signs and trophism of the pelvic floor. FEPF and perineometry were also performed. Inspections and palpation of the pelvic floor region and of the external genitalia were performed with patients in lateral or supine position. Examinations were performed in the morning. Before the examination, verbal and visual information was given to patients. Muscle relaxation and contraction were observed, as well as the participation of accessory muscles or the paradoxal contraction of the pelvic floor musculature. This was done by asking patients to contract muscles as if "they wanted to hold their poo", and to cough. Palpation was undertaken by circumferentially touching all the PF musculature during contraction and relaxation. We checked for symmetry and presence of pain. Digital vaginal or anal examination was performed with one or two examining fingers, with the use of gloves and no mirror or other accessory. For the investigation of prolapse, patients were asked to strain as if they were defecating. **Functional Evaluation of Pelvic Floor (FEPF)** (Contreras Ortiz, 1996. **Perineometry –** The following measurements were made: strength and resistance, maximum contraction, maintenance times and the number of effective contraction repetitions. Two measurements were considered: average of three measurements of contraction sustained for five seconds, followed by a ten-second period of relaxation; average measurement of ten quick contractions sustained for one second, followed by a one-second period of relaxation.

Results

78 patients were evaluated: 55 female (70.51%) and 23 male (29.49%), with a mean age of 49.60 years (32 - 72 years). Average age when PPS symptoms started was 42.47 years (22 - 69 years). Average PPS stability time was 35.8 years (10 - 68 years). Spontaneous and enquired complaints: the percentage comparison of spontaneous complaints and enquired complaints after relevant explanations showed that, for both genders, there is a higher statistical percentage of enquired complaints than spontaneous ones. Women: 92.7% - 61.8%; men: 87% - 30.4%, respectively. Spontaneously, men reported more sexual complaints (57.1%), while women reported more urological complaints (55.9%). Enquired sexual complaints by men were statistically significant (33.3%), as well as urological complaints by women (49.0%). There was a high percentage of associated complaints in the men's group, since they encompass both sexual and urological complaints (47.6%). Using the test of equality of two proportions, a prevalence was seen for associated complaints (involving more than one system) in the men's group: "hemorrhoids" (40%); "feeling of incomplete bladder voiding" and "and post-urination drip" (40%) - both were not statistically different from the others; "not able to maintain an erection" (70%) - statistically significant difference. In the women's group: "fecal incontinence" and "flatus incontinence" (66.7%); however, a statistical difference was only seen for "incomplete voiding" (11.1%). It was not possible to consider "stress urinary incontinence" (55.6%) statistically different from "urinary urgency"; "anorgasm" and "dispareunia" (22.2%) were not statistically different from the rest. During inspection and palpation, the following signs were observed: asymmetry (photo), trophism changes to the external genitalia, pelvic floor and PF musculature. Atrophic pelvic floor (70,5%) was statistically significant. 61 patients (78.2%) could contract the PFM, although many used accessory muscles. It was not possible to record their relaxation capacity or pain, because they were unable to sustain contraction. These patients also had generalized pain due to the syndrome. 13 patients (16.7%) showed paradoxal contraction of the PFM. In the FEPF test, grade 3 was prevalent (39.9%). In perineometry, for the analysis of anal perineometry alone, there was a statistically significant difference between strength and resistance. As for the correlation between perineometry and FEPF, the difference was statistically significant for all analyses performed anally and vaginally. In correlating PPS duration and the amount of symptoms reported, it was observed that the longer the duration of PPS, the greater the amount of symptoms.



Interpretation of results **–** There were significant changes what concerns the percentage of complaints enquired and there also was a correlation between perineometry and FEPF showing that the difference was statistically significant for all analyses performed anally and vaginally. These results show that, to treat the dysfunctions of the pelvic floor in patients with PPS it is necessary refer to a physical therapeutic evaluation and FEPF.

Concluding message – Dysfunctions of the PF are frequent in patients with PPS. Correlation between the affected atrophied limb caused by polio and atrophy of the PF. Correlation between a physical therapeutic evaluation and FEPF(simpler and low cost) and Perineometry

References

Neurourology & Urodynamics 2005; vol 24, Number 4.
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Specify source of funding or grant	**None**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Ethical Committee of the University of Sao Paulo**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**