Pelvic Floor Function, Sexual Function, and Quality of Life in Women with Endometriosis

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1 Hypothesis

Endometriosis is a chronic inflammatory disease characterized by significant painful manifestations, with systemic repercussions and diverse clinical manifestations. The location of ectopic tissue, time to treatment initiation, as well as surgical interventions performed, may lead to musculoskeletal alterations, including pelvic floor dysfunctions. The presence of such alterations can exacerbate the painful symptoms experienced in endometriosis, notably chronic pelvic pain, and sexual pain, impacting the quality of life of those diagnosed with the disease. Therefore, the hypothesis of the present study is that endometriosis may alter the electromyographic activity of the pelvic floor muscles, sexual function, and quality of life in these women, when compared to a control group without the disease.

2 Aims of study

To analyze the electromyographic activity of the pelvic floor muscles, sexual function, and health-related quality of life in women with endometriosis.

3 Study design, materials and methods

In a cross-sectional clinical study, the sample was recruited from a list of women with endometriosis (EG) undergoing treatment at the Pelvic Pain Outpatient Clinic. Participants underwent a specific physical and gynecological examination with genital region inspection and bidigital palpation to assess pelvic floor function. Muscle activity was evaluated using the New Miotool Wireless electromyograph (Miotec) with the Glazer Protocol. The Female Sexual Function Index (FSFI) and the Endometriosis Health Profile Questionnaire (EHP-30) were used to assess sexual function and quality of life, respectively. Sample size determination aimed to achieve a statistical power of 80% and an alpha of 5%. It was estimated that a minimum of 52 participants in each group would be necessary to detect a statistically significant difference in pelvic floor electromyographic measurement. For comparison of electromyographic variables, an age-matched control group (CG) was recruited.

Female Sexual Function Index (FSFI)
Endometriosis Health Profile Questionnaire (EHP-30)

New Miotool

4 Results

A total of 111 women participated in the study, with 58 in the EG and 53 in the CG. The mean age of the EG was 37.09 (±7.62) and of the CG was 36.45 (±9.93) (p=0.709). Sexual function alteration was observed in 85% of women with endometriosis. Significant differences were found in the values of MVC (maximum voluntary contraction), mean sustained contractions, and mean submaximal sustained contraction between the endometriosis group and the control group. The mean score of the central domain of the EHP-30 questionnaire was 44.89 (±27.48), with the dimension showing the most alteration being "control and powerlessness" with an average score of 50.93 (±34.19).

Table 1. Comparison of maximum voluntary contraction and sustained contraction assessed using surface electromyography (sEMG) with an endocavitary probe (N=111).

Variables	Endometriosis Group (N=58)	Control Group (N=53)	p-value
	Mean ± SD	Mean ± SD	
MVC	60.66 ± 43.88	87.55 ± 52.88	0.006*
Initial Rest			
Peak	29.68 ± 18.82	33.26 ± 23.92	0.898
Mean	16.54 ± 8.4	16.35 ± 6.56	0.883
Mean Amplitude	27.45 ± 16.57	31.34 ± 23.27	0.820
Sustained Contraction			
Contraction 1			
Peak	69.29 ± 54.85	91.60 ±56.69	0.010*
Mean	40.33 ± 31.01	53.64 ± 30.22	0.005*
Mean Amplitude	52.92 ± 50.83	70.94 ± 51.93	0.023*
Contraction 2			
Peak	77.10 ± 62.37	95.25 ± 63.22	0.050
Mean	43.28 ± 32.05	54.24 ± 31.19	0.026*
Mean Amplitude	59.09 ± 58.25	75.13 ± 58.14	0.039*
Contraction 3			
Peak	73.81 ± 57.36	92.08 ± 56.97	0.011*
Mean	42.71 ± 32.01	54.24 ± 31.09	0.049*
Mean Amplitude	54.27 ± 49.50	70.82 ± 51.3	0.007*
Contraction 4			
Peak	72.33 ± 62	89.24 ± 51.51	0.033*
Mean	41.84 ± 32.36	52.06 ± 28.27	0.019*
Mean Amplitude	54.86 ± 57.54	69.56 ± 46.91	0.029*
Contraction 5			
Peak	71.65 ± 61.46	132.05 ± 322.67	0.011*
Mean	42.59 ± 33.24	51.14 ± 29.09	0.033*
Mean Amplitude	53.81 ± 58.43	93.45 ± 189.74	0.007*

SD: Standard deviation; p <0.05: Statistical significance. sEMG: surface electromyography; MVC: Maximum Voluntary Contraction. *Values with significant statistical difference.

5 Conclusions

Women with endometriosis present compromised pelvic floor activity, with poorer muscle recruitment, compared to a control group. Endometriosis is a disease with high prevalence and causes much suffering in women, requiring a multidisciplinary approach and a comprehensive view for effective disease and complication treatment.

6 References

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