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Sexual function according to infiltration of endometriosis of the rectovaginal septum: a cross-sectional study

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SUMMARY

OBJECTIVE: The aim of this study was to associate the degree of infiltration of rectovaginal septum endometriosis with dyspareunia and sexual function.
METHODS: A cross-sectional study was carried out with 127 women followed up at a tertiary hospital from March 2021 to March 2022. The women's sociodemographic and clinical conditions and dyspareunia were evaluated. The sexual function was evaluated by the Female Sexual Function Index.
RESULTS: A total of 53 women with type I, 37 with type II, and 37 with type III rectovaginal septum endometriosis were evaluated. The women had a mean age of 38.76±6.63 years and a mean body mass index of 27.62±5.11 kg/m^2. The mean time of diagnosis of endometriosis was 6.94±4.98 years. On average, the study participants engaged in sexual activity/intercourse 1.88±1.25 times per week. There was no difference between the dyspareunia score (p=0.822) and sexual function (p=0.174) according to the types of rectovaginal septum endometriosis. Overall, 93.7% of the women with endometriosis had sexual dysfunction. There was no correlation between the degree of rectovaginal septum endometriosis infiltration with dyspareunia (r=0.05; p=0.55) or sexual function (r=0.07; p=0.39).
CONCLUSION: Women with endometriosis have impaired sexual function, regardless of the degree of endometriosis infiltration.
KEYWORDS: Endometriosis. Dyspareunia. Physiological sexual disorders.

INTRODUCTION

Endometriosis is an inflammatory, estrogen-dependent disease defined by the presence of tissue that resembles the endometrial gland and/or stroma outside the uterus, predominantly, but not exclusively, in the female pelvis. Deep endometriosis is defined as the subperitoneal infiltration of ³5 mm endometrial implants, leading to the formation of endometriotic nodules[1].

Transvaginal ultrasound (TVUS) can classify deep rectovaginal septum endometriosis into three types: type I: pelvic area with a typical or atypical lesion surrounded by scar tissue, in the form of a cone, whose depth is diagnosed when surgically removed; type II: lesion formed by retraction of the rectum involving a typical lesion; and type III: endometriotic nodule infiltrating the rectovaginal septum[2].

Dyspareunia, which is a disabling condition that severely affects women physically and psychologically, is one of the most common symptoms of deep endometriosis[3]. Deep infiltrative endometriosis is also related to reduced quality of life and sexual function[4]. Several studies have investigated the relationship between different pain symptoms and the specific anatomic location of endometriotic lesions[5,6]. The presence of vaginal lesions is frequently associated with severe dyspareunia[5], as is the number of previous surgical procedures for treating endometriosis, the extent of the lesions, the obliteration of the rectouterine excavation, and the degree of peritoneal infiltration, among others[6,7]. Despite this, it is not yet known whether the degree of infiltration of rectovaginal septum endometriosis correlates with dyspareunia and sexual dysfunction. Thus, this study aimed to assess whether there is a correlation between the degree of endometriotic infiltration and dyspareunia and sexual function.

METHODS

A cross-sectional study with 127 women was carried out at the Endometriosis Outpatient Clinic of a tertiary hospital from March 2021 to March 2022. Eligible participants were between 18 and 45 years old, diagnosed with endometriosis in the rectovaginal septum (diagnosis performed by TVUS with bowel preparation[8]), and sexually active. Women with cognitive deficits that impeded the understanding of questionnaires were excluded.

The analyzed variables included age, parity, education (i.e., elementary school–up to 9 years of schooling, high school–up to 12 years of schooling, and higher education–more than 12 years of schooling), low income (<R$291

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per capita), middle class (R$291 per capita <family income <R$1,019 per capita), and upper class (>R$1,019 per capita), professional activity (e.g., unemployed, retired, student, and housewife), marital status (with or without a partner), body mass index (BMI: calculated as weight in kilograms divided by the square of height in meters), sexual activity frequency (i.e., times per week), number of sexual partners, time of diagnosis (months), treatment (hormone therapy–estrogen or progestogen alone or none), treatment time (months), number of lesions, and lesion size.

Endometriosis in the rectovaginal septum was evaluated by TVUS and classified into three types: type I: pelvic area with a typical or atypical lesion surrounded by scar tissue, in the form of a cone, diagnosing its depth when surgically removed; type II: lesion formed by retraction of the rectum involving a typical lesion; and type III: endometriotic nodule infiltrating the rectovaginal septum[2,9]. The ultrasound was performed by one investigator who had more than 10 years of experience using the Toshiba X (Aryan, Spain) appliance, providing a description of the injuries in millimeters.

Sexual function was assessed using the Female Sexual Function Index (FSFI). This questionnaire has 19 questions grouped into six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. Each domain receives a score from 0 to 6, except for desire and satisfaction, with minimum scores of 1.2 and 0.8, respectively. The final score is the sum of all specific domain scores and can range from 2 to 36. Sexual dysfunction is characterized by a score £26.55[10].

To assess dyspareunia, the scale that classifies it into scores was used: 0=absence of pain, 1=mild pain that does not require interrupting the sexual activity, 2=moderate pain that does not require interrupting sexual activity, and 3=severe pain that requires interrupting sexual activity[11].

All women signed an informed consent form before participating in the study. The Research Ethics Committee of the institution approved the study (number: 4.490.734).

Statistical analysis

For the calculation of the sample size for the purpose of evaluating the correlation between the degree of endometriosis infiltration in the rectovaginal septum and the level of dyspareunia and the sexual function score (FSFI) in women with endometriosis, the alpha significance level or type I error and the power of the sample were fixed at 5% (α=0.05) and 80% (β=0.20), respectively, and various correlation estimate values were used. From the results, it was estimated that a sample of 124 women would be representative to assess a minimum correlation of 0.25 between the parameters of interest.

The variables were described as frequency, mean, and standard deviation. The chi-square and Fisher's exact tests were used to detect associations between categorical variables. The Kruskal-Wallis test was used to detect the association between continuous variables. Spearman's correlation coefficient was used to analyze the relationships between numerical variables. A probability value (p-value) of <0.05 was considered statistically significant. The SAS version 9.04 software (SAS Inc., Cary, NC) was used for all statistical analyses.

RESULTS

Of the 127 women, 53 (41.8%) women with type I rectovaginal septum endometriosis, 37 (29.1%) women with type II, and 37 (29.1%) women with type III were evaluated. Women with type I rectovaginal septum endometriosis had a mean age of 38.0±7.0 years, those with type II had a mean age of 39.1±6.3 years, and those with type III had a mean age of 39.4±6.3 years (p=0.38). The mean BMI was 27.6±5.1 kg/m^2 with no difference between groups (p=0.07). The mean time of diagnosis of endometriosis was 6.9±4.9 years, and the women engaged in sexual activity 1.8±1.2 times per week on average, with no difference between the groups (p=0.11 and p=0.56, respectively). Of the women who did not use hormone therapy, 13.2% had type I, 27.0% had type II, and 8.1% had type III endometriosis (p=0.10). Women with type I rectovaginal septum endometriosis had fewer partners and fewer lesions than women in the other groups (p=0.005 and p<0.001, respectively) (Table 1). Of the 127 women with endometriosis of the rectovaginal septum, 62% had a lesion in the rectosigmoid and 12% had an ovarian endometrioma (data not shown).

It was observed that 18.8, 13.5, and 18.9% of women with types I, II, and III rectovaginal septum endometriosis, respectively, did not have dyspareunia. In contrast, 16.9, 21.6, and 21.6% of women with types I, II, and III rectovaginal septum endometriosis had severe dyspareunia with the need to interrupt sexual intercourse. There was no difference between types of dyspareunia (p=0.94), mean dyspareunia score (p=0.82), and sexual function (p=0.17) among women according to the types of rectovaginal septum endometriosis. Most women in the study presented sexual dysfunction, with 90.5, 94.5, and 97.3% of women with types I, II, and III endometriosis, respectively, having a total FSFI score lower than 26.5 (p=0.53) (Table 2).

There was no correlation between the degree of rectovaginal septum endometriotic infiltration with dyspareunia (p=0.55) or with sexual function (p=0.39). Additionally, there was no correlation between dyspareunia and sexual function. However, we observed a significant correlation between dyspareunia and the FSFI's pain domain (p<0.0001) (Table 3).

Table 1. Clinical and sociodemographic characteristics of women with rectovaginal septum endometriosis (n=127).

	Type I (n=53) mean±SD/n (%)	Type II (n=37) mean±SD/n (%)	Type III (n=37) mean±SD/n (%)	p-value
Age (years)	38.0±7.0	39.1±6.3	39.4±6.3	0.38*
Parity	1.2±1.5	0.9±1.0	1.0±1.2	0.85*
Education				
<9 years	14 (26.4)	4 (16.2)	11 (29.7)	0.47**
9-12 years	19 (35.8)	18 (48.6)	11 (29.7)	
≥12 years	20 (37.7)	13 (35.1)	15 (40.5)	
Income >R$1,500.00	22 (41.4)	16 (43.2)	16 (43.2)	0.89**
Employed	36 (67.9)	26 (70.2)	29 (78.3)	0.39***
With partner	40 (75.4)	28 (75.7)	29 (80.5)	0.83**
BMI (kg/m^2)	27.8±5.1	26.2±5.1	28.6±4.7	0.07*
Frequency of sexual activity/week	1.7±1.0	2.0±1.3	1.9±1.3	0.56*
Number of partners	0.8±0.3	1.2±1.4	1.0±0.1	0.005* (1≠2,3)
Time since diagnosis (months)	75.1±55.3	104.2±72.2	80.8±48.4	0.11*
Treatment	46 (86.7)	27 (72.9)	34 (91.9)	0.10***
Time of treatment (months)	31.5±30.8	24.8±33.4	36.1±41.0	0.22*
Number of lesions	3.0±1.3	3.8±1.8	4.3±1.4	<0.001* (1≠3)
Size of rectovaginal septum lesion (mm)	41.8±45.2	39.5±6.1	44.4±10.9	0.001* (1≠3)

SD: standard deviation; BMI: body mass index. *Kruskal-Wallis test; **Chi-square test; ***Fisher's exact test.

Table 2. Sexual function and dyspareunia in women with rectovaginal septum endometriosis (n=127).

	Type I (n=53) mean±SD/n (%)	Type II (n=37) mean±SD/n (%)	Type III (n=37) mean±SD/n (%)	p-value
CPP	35 (66.0)	21 (56.7)	19 (51.3)	0.35**
Dyschezia	17 (32.08)	6 (16.2)	9 (24.3)	0.23**
Dysuria	9 (16.98)	4 (10.8)	7 (18.9)	0.60**
Dyspareunia	1.51 ± 0.99	1.6±0.9	1.6±1.0	0.82*
0	10 (18.87)	5 (13.5)	7 (18.9)	0.94**
1	15 (28.30)	12 (32.4)	8 (21.6)	
2	19 (35.85)	12 (32.4)	14 (37.8)	
3	9 (16.98)	8 (21.6)	9 (21.6)	
Desire	3.9±1.1	4.1±1.1	3.9±0.9	0.65*
Arousal	2.9±1.5	3.4±1.0	3.1±1.6	0.35*
Lubrication	3.2±1.6	3.8±0.9	3.3±1.5	0.23*
Orgasm	3.0±1.6	3.5±1.0	3.0±1.5	0.67*
Satisfaction	2.9±1.2	2.8±1.2	3.0±1.2	0.79*
Pain	2.6±1.9	3.4±1.7	3.0±1.9	0.24*
FSFI score	19.1±6.0	21.4±3.8	19.4±5.7	0.17*
FSFI ≤26.5	48 (90.5)	35 (94.5)	36 (97.3)	0.53***

SD: standard derivation; CPP: chronic pelvic pain; FSFI: female sexual function index. *Kruskal-Wallis test; **Chi-square test; ***Fisher's exact test.

Table 3. Correlation between rectovaginal septum endometriosis and dyspareunia and sexual function (n=127).

	Dyspareunia	FSFI total	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain
Rectovaginal septum								
R	0.053	0.075	-0.019	0.080	0.087	0.011	-0.008	0.091
P	0.55	0.39	0.83	0.40	0.36	0.90	0.92	0.33
Dyspareunia								
R	-	-0.066	0.260	0.192	-0.068	0.048	0.285	-0.618
P	-	0.46	0.005	0.04	0.47	0.61	0.002	<0.0001

FSFI: female sexual function index; R: spearman's correlation coefficient.

DISCUSSION

Our study showed that women were 39 years old on average, had one partner, engaged in sexual activity twice a week, were diagnosed with endometriosis for 7 years, and were on hormone treatment for at least 2 years. Approximately 20% of the women did not exhibit dyspareunia, but all women had sexual dysfunction. There was no correlation between the degree of rectovaginal septum endometriotic infiltration with dyspareunia and sexual function.

Dyspareunia is observed in most women with endometriosis undergoing surgery and those prescribed hormonal therapies. More than half of women with endometriosis experience dyspareunia throughout their sexual lives, especially those with involvement of the uterosacral ligaments[4].

In our study, approximately 80% of women had dyspareunia, with 30% mild, 35% moderate, and 20% severe. In the literature, according to a previous study, 67% of women with endometriosis of the rectovaginal septum experienced dyspareunia, with 28% mild, 60% moderate, and 12% severe[12], showing results similar to those in this study.

Overall, women with rectovaginal endometriosis had worse sexual functioning than those without endometriosis. However, when compared with women with endometriosis in other sites (peritoneal or ovarian), no differences are observed particularly in sexual function and the frequency and severity of dyspareunia. This result suggests that the relationship between endometriosis and sexual dysfunction is more complex than can be explained by the anatomical distribution of lesions[12].

Dyspareunia is often associated with less sexual activity/intercourse, feelings of fear because of coital pain, and feelings of guilt toward the partner. It also correlates with a lower level of desire/arousal and a lower number of orgasms. Furthermore, dyspareunia is significantly correlated with sexual dysfunction and/or sexual distress[13]. Our study found no correlation between dyspareunia and the frequency of sexual activity and sexual function.

Unlike our study, which did not show an association between the degree of infiltration and sexual function, another study showed that women with deep endometriosis with involvement of the rectovaginal septum have more significant impairment in their sexual function when there is partial or total infiltration of the septum. Notably, that study was carried out with women before their surgical treatment and, therefore, without hormone therapy[4].

Studies have demonstrated that women with untreated endometriosis presented altered sexual function, as evidenced by lower scores in all the FSFI domains and severe dyspareunia[14,15]. In our study, most women were treated, which may explain the low dyspareunia scores, although the majority had sexual dysfunction. A previous study from our group showed that long-term hormonal treatment attenuates dyspareunia and improves sexual function but does not restore them to normal values[16].

Although the literature on the influence of cognitive and emotional factors on sexual function and pain perception has increased in recent years, the presence of some aspects, such as beliefs, automatic thoughts, and emotions regarding sexuality, remains unexplored in women with endometriosis. Despite this, these factors play a vital role in developing and maintaining all sexual dysfunctions[17].

This study has some limitations, such as the absence of a control group without endometriosis, and the small sample size, which does not allow a correlation analysis to be carried out with the isolated groups (especially with group 3). Also, the fact that it is a cross-sectional study allows conclusions of cause and effect.

Sexuality is a complex and multidimensional phenomenon influenced by three main factors: physical, psychological, and social well-being[18]. Thus, female sexual function cannot be related only to pain during sexual intercourse and the location of endometriosis. Indeed, aspects such as marital distress, anxiety, and depression certainly influence sexuality and should be evaluated by a multidisciplinary team.

CONCLUSION

Women with endometriosis have impaired sexual function regardless of the degree of infiltration of endometriosis into the rectovaginal septum.

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AUTHORS' CONTRIBUTIONS

DAY: Conceptualization, Formal Analysis, Methodology, Project administration, Supervision, Writing – review & editing. **CLBP:** Writing – review & editing. **GKS:** Conceptualization, Data curation, Writing – original draft.

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