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FREQUENCY OF ENDOMETRIOSIS FINDINGS IN TRANSVAGINAL ULTRASOUND WITH INTESTINAL PREPARATION ACCORDING TO THE UBESS AND ASRM CLASSIFICATION

LUCIANE RODRIGUES DA SILVA FÉLIX[1], ARIELA MAULLER VIEIRA PARENTE[1,2], PATRÍCIA GONÇALVES EVANGELISTA[2], WALDEMAR NAVES DO AMARAL[2]

ABSTRACT

Introduction: Endometriosis is characterized by the presence of endometrial tissue outside the uterus. The gold standard test to establish its diagnosis is laparoscopy, but transvaginal ultrasound has become the main diagnostic tool in the diagnosis of endometriosis.

Objectives: To analyze the frequency of endometriosis findings on transvaginal ultrasound with bowel preparation according to the Ultrasound-Based Endometriosis Staging System (UBESS) and American Society for Reproductive Medicine (ASRM) classification.

Methods: This is a cross-sectional, descriptive, retrospective and quantitative study, carried out at Clínica Fértile, where 413 examinations were analyzed. transvaginal ultrasound with bowel preparation in women aged 18 to 60 years, performed from January 2020 to December 31, 2020 in Goiânia, Goiás.

Results: In total, 413 reports were evaluated, 272 normal and 141 with endometrial changes, representing 34% changes. The average age was 34 years old, ranging from 18 to 59 years old. In the studied group, in relation to ASRM stages, the frequency was higher in severe cases of endometriosis with 36%, whereas in UBESS the frequency was higher in stage II with 50% of cases. In both classifications, the most affected age group were women between 20 and 40 years old, as they are still of reproductive age.

Conclusion: The frequency of alterations is 34%. ASRM the frequency was higher in severe cases of endometriosis with 36%. UBESS frequency was higher in stage II with 50% of cases. In both classifications, the most affected age group were women between 20 and 40 years old, as they are still of reproductive age.

KEYWORDS: ULTRASONOGRAPHY, ENDOMETRIOSIS, DIAGNOSIS

INTRODUCTION

Endometriosis is characterized by the presence of endometrial tissue outside the uterus. When endometrial implants penetrate more than 5 mm into the peritoneum, they are defined as deep pelvic endometriosis [1]. Endometriosis is a common disease, but due to the wide spectrum of symptoms, diagnosis can take 8 to 12 years[2].

Endometriosis has a prevalence of up to 70% in patients with pelvic pain and infertility. Intestinal involvement occurs between 3 and 37% of women in whom gynecological endometriosis is detected, whose site of greatest involvement is the rectosigmoid (73%) and the rectovaginal septum (13%) [3].

Transvaginal ultrasound has excellent sensitivity and specificity in the diagnosis of ovarian endometrioma, especially in lesions larger than 2 cm. Histologically, deep endometriosis is defined as foci more than 5 mm deep in the peritoneum or in some organ[4].

The disease can be found at many sites throughout the pelvis, in particular the ovaries, pelvic peritoneum, pouch of Douglas (PD), rectum, rectosigmoid, rectovaginal septum (RVS), uterosacral ligaments (USL), vagina, and urinary bladder. . Correct and site-specific diagnosis is critical to defining the optimal treatment strategy for endometriosis. Non-invasive imaging methods are needed to accurately map the location and extent of endometriotic lesions[5].

The gold standard exam to establish its diagnosis is laparoscopy, but transvaginal ultrasound has become the main diagnostic tool in the diagnosis of endometriosis and can contribute to the detection of the disease, as it is an accessible, lower cost, non-invasive exam and allows preoperative planning in cases where surgical treatment is necessary[6].

The inclusion of an evaluation for endometriosis in routine pelvic ultrasound allows for earlier diagnosis[7]. The transvaginal ultrasound procedure for endometrial mapping, also called endovaginal ultrasound with bowel preparation, is a transvaginal ultrasound performed with bowel emptying (bowel preparation) to visualize the involved structures[8].

1 – Faculdade de Medicina Potrick Schola Fértile - FAMP
2- Universidade Federal de Goiás – UFG

MAILING ADDRESS
WALDEMAR NAVES DO AMARAL
Alameda Cel. Joaquim de Bastos, 243
St. Marista Goiânia – CEP 74175-150
Email:waldemar@sbus.org.br

The aim here is to analyze the frequency of endometriosis findings on transvaginal ultrasound with bowel preparation according to the Ultrasound-Based Endometriosis Staging System (UBESS) and the American Society for Reproductive Medicine (ASRM) classification.

METHODOLOGY

This is a cross-sectional, descriptive, retrospective and quantitative study, carried out at Clínica Fértile, where 413 transvaginal ultrasound exams with bowel preparation were analyzed in women aged 18 to 60 years, performed from January 2020 to December 31 2020 in Goiânia, Goiás.

Data were obtained through data contained in ultrasound reports.

The UBESS classifications have the power to optimize the screening of women with advanced stages of the disease to choose the best method of laparoscopic treatment. The Ultrasound-Based Endometriosis Staging System (UBESS) consists of three stages correlated with three levels of complexity of laparoscopic surgery for endometriosis, described by the Royal College of Obstetricians and Gynecologists[9].

Estágio UBESS	Achados da USGTV	Níveis
I	Ovários normais móveis, die ausente, BD normal, com/sem SD	Leve
II	Endometrioma, ovários imóveis, EP não intestinal, BD normal	Moderado
III	Ovários imóveis, endometrioma, EP extra-pélvica BD normal	Avançado

BD – bolsa de Douglas, SD – sitio da dor, EP – endometriose profunda

Table 1 - US-based staging of endometriosis and its prediction of surgical complexity level[9]

The ASRM classification system is currently commonly used and is based on the appearance, size and depth of peritoneal and ovarian implants; the presence, extent and type of adhesions; and the degree of obliteration of the Pouch of Douglas. These parameters together reflect the extent of endometriotic disease. Stadiums are score dependent as indicated below:

Stage I (minimal endometriosis): score 1-5, isolated implants and no significant adhesions.

Stage II (mild endometriosis): score 6-15, superficial implants less than 5 cm, no significant adhesions.

Stage III (moderate endometriosis): score 16-40, multiple implants, evident peritubal and periovarian adhesions.

Stage IV (severe endometriosis): score > 40, multiple superficial and deep implants, including endometriomas, dense and firm adhesions.

The ultrasound report was considered a dependent variable. The independent variables were: age and diagnosis.

For the statistical analysis, an electronic spreadsheet was prepared in the program Microsoft Office Excel® 2010. The quantitative data were analyzed descriptively through the distribution of absolute and relative frequencies. The present study was approved by the Research Ethics Committee (CEP) of Hospital e Maternidade Dona Iris, according to the opinion number

RESULTS

In total, 413 reports were evaluated, 272 of which were normal and 141 with endometrial alterations, representing 34% of alterations. The mean age was 34 years, ranging from 18 to 59 years. See figures 1 and 2 and tables 2 and 3.

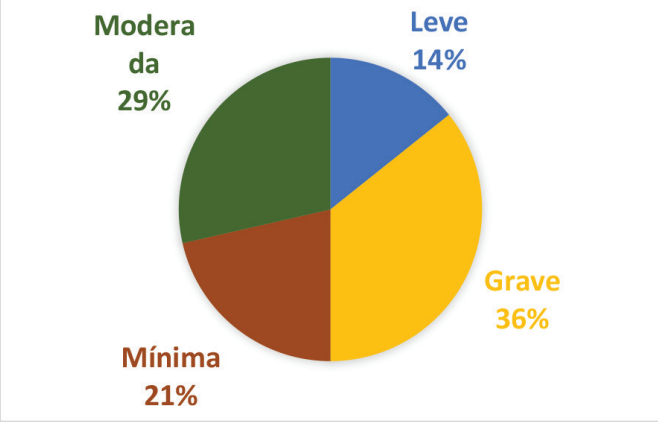

Figure 1. List of findings and stages of asrm

IDADE E GRAU SEGUNDO OS ESTÁGIOS DA ASRM	N	%
Leve		
<20	0	
20-40	16	76,2%
>40	5	23,8%
Mínima		
<20	1	3,3%
20-40	23	76,7%
>40	6	20,0%
Moderada		
<20	0	0,0%
20-40	30	75,0%
>40	10	25,0%
Grave		
<20	1	2,0%
20-40	43	86,0%
>40	6	12,0%

Table 2. Relation of ASRM findings and stages in relation to the age of patients who underwent endovaginal ultrasound with bowel preparation.

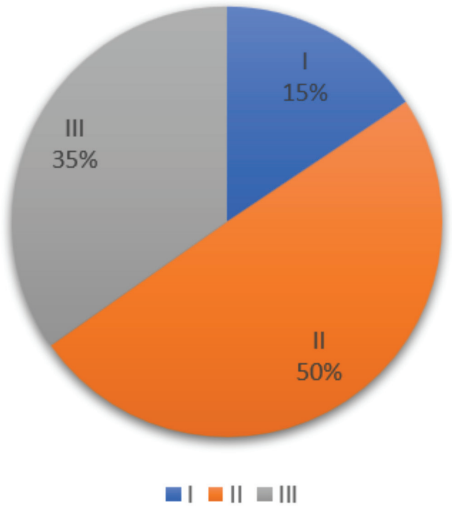

Figure 2. List of findings and UBESS stages

IDADE E GRAU SEGUNDO OS ESTÁGIOS DA UBESS	N	%
Estágio I		
<20	0	0,0%
20-40	17	77,3%
>40	5	22,7%
Estágio II		
<20	1	1,4%
20-40	53	75,7%
>40	16	22,9%
Estágio III		
<20	1	2,0%
20-40	42	85,7%
>40	6	12,2%

Tabela 3. Relação dos achados e os estágios UBESS em relação a idade, das pacientes que realizaram ultrassonografia endovaginal com preparo intestinal.

DISCUSSION

Ultrasound examination is an indisputable imaging method in the diagnosis of endometriosis, as a first step in detection, as a fundamental tool in management planning and as the best diagnostic tool during follow-up[10].

Transvaginal ultrasound has evolved a lot as an essential tool in the investigation of women with pelvic pain and suspected endometriosis. Several studies have demonstrated the accuracy and reliability for diagnosing deep infiltrating pelvic endometriosis and pouch of Douglas obliteration. Assessment of the anterior pelvic compartment for deep urinary endometriosis and utero-vesical adhesions should also be considered for women with suspected pelvic endometriosis/pain. In addition, the use of ultrasound markers, such as ovarian endometriomas and ovarian immobility, also aid in the assessment of disease severity. The ability to map the location and extent of disease preoperatively allows for appropriate screening, surgical planning, and patient counseling and, in turn, improves care for women with severe endometriosis[11].

In total, 413 reports were evaluated, 272 of which were normal and 141 with endometrial alterations, representing 34% of alterations. The mean age was 34 years, ranging from 18 to 59 years.

The stage of endometriosis was based on the revised American Society for Reproductive Medicine (ASRM) classification. In the group studied in relation to the stages of ASRM, the frequency was higher in severe cases of endometriosis with 36%.

There is no clear consensus on defining the severity of endometriosis and the most commonly used classification, the American Society for Reproductive Medicine (ASRM) classification, has both advantages and disadvantages. The advantages of this classification are that it is widely used in clinical practice and provides a formalized systematic approach to documenting the impact of disease on patient fertility. However, many authors recognize that the features of deeply infiltrating endometriosis are often the most symptomatic and difficult to treat. These features are poorly represented in the ASRM classification and therefore need to be documented separately[12].

When evaluating 34 patients using the ASRM classification, endometriosis was not found in 12 (36.4%) patients. One patient (3%) had minimal disease, one (3%) had mild disease, five (15.2%) had moderate disease, and 14 (42.4%) had severe disease[12].

Another study compared preoperative ultrasound reports and surgical operation scores to retrospectively assign an ASRM score and stage in 204 patients with suspected endometriosis. The breakdown of surgical findings was as follows: ASRM 0 (ie, no endometriosis), 24/204 (11.8%); ASRM 1, 110/204 (53.9%); ASRM 2, 22/204 (10.8%); ASRM 3, 16/204 (7.8%); ASRM 4, 32 204 (15.7%). The overall accuracy of ultrasound in predicting the surgical stage of ASRM was as follows: ASRM 1, 53.4%; ASRM 2, 93.8%; ASRM 3, 89.7%; ASRM 4, 93.1%; ASRM pooled 0, 1 and 2, 94.6%; and ASRM pooled 3 and 4 of 94.6%. Ultrasound performed better in the test at higher stages of the disease. When the ASRM stages were dichotomized, ultrasound had a sensitivity and specificity of 94.9% and 93.8%, respectively, for ASRM 0, 1, and 2, and 93.8% and 94.9%, respectively, for ASRM 3 and 4. Concluding, therefore, that ultrasound is highly accurate in predicting mild, moderate, and severe ASRM stages of endometriosis and can accurately differentiate between stages when ASRM stages are dichotomized (null/ minimal/mild vs moderate/ severe). This may have important positive implications for screening patients at centers of excellence in minimally invasive gynecology for

advanced stage endometriosis[13].

In another study with 201 women, preoperative US and laparoscopy were evaluated. The sensitivity and specificity of the US diagnosis of severe pelvic endometriosis were 0.85 (95% CI, 0.716-0.934) and 0.98 (95% CI, 0.939-0.994), respectively, and the positive and negative were 43.5 (95% CI, 14.1-134) and 0.15 (95% CI, 0.075-0.295), respectively. Overall, there was a good level of agreement between ultrasound and laparoscopy in identifying absent, minimal, mild, moderate, and severe disease (quadratic weighted kappa = 0.786)[14].

In the UBESS classification, the frequency was higher in stage II with 50% of the cases. In both classifications, the most affected age group were women between 20 and 40 years old, as they are still of reproductive age. UBESS has the power to optimize the screening of women with advanced stages of the disease to choose the best laparoscopic treatment method.

In evaluating 192 women, with a mean ± SD age at diagnosis of endometriosis of 23.7 ± 9.3 years and a mean duration of symptoms before presentation of 42 months. The predominant sites of pelvic pain reported were left iliac fossa (32%), right iliac fossa (29.5%) and lower abdomen (61%) and predominant symptoms included dyspareunia (57.5%), dysmenorrhea (58.5%). %) and dyschezia (41.5%). The precision, sensitivity, specificity, positive and negative predictive values, and positive and negative likelihood ratios of UBESS I for predicting a need for level 1 laparoscopic surgery were: 87.5%, 83.3%, 91.7%, 90 .9%, 84.6%, 10 and 0.182; those of UBESS II to predict level 2 surgery were: 87.0%, 73.7%, 90.3%, 65.1%, 93.3%, 7.6 and 0.292; and those of UBESS III to predict level 3 surgery were: 95.3%, 94.8%, 95.5%, 90.2%, 97.7%, 21.2 and 0.054, respectively. UBESS can be used to predict the level of complexity of laparoscopic surgery for endometriosis. It has the potential to facilitate the screening of women with suspected endometriosis for the most appropriate surgical experience needed for laparoscopic endometriosis surgery [8]. In another study, when analyzing 33 patients, the UBESS score did not adequately predict the surgical difficulty[15].

Regardless of the classification, the US is a good test to assess the severity of endometriosis, particularly accurate in detecting serious diseases, which could facilitate a more effective screening of women for adequate surgical care[14].

CONCLUSION

The frequency of changes is 34%.

ASRM frequency was higher in severe cases of endometriosis with 36%.

UBESS frequency was higher in stage II with 50% of cases.

In both classifications, the most affected age group were women between 20 and 40 years old, as they are still of reproductive age.

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