ORIGINAL ARTICLE: ENDOMETRIOSIS

Endometriosis on the uterosacral ligament: a marker of ureteral involvement

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Objective: To evaluate the association between ultrasound measurements of endometriosis nodules on the uterosacral ligament (USL) and the risk of ureteral involvement, as well as to assess whether associations with other ultrasound variables increase the sensitivity and specificity of the diagnosis of ureteral endometriosis.
Design: Cross-sectional, observational study.
Setting: University hospital.
Patient(s): Four hundred sixty-three women with deep infiltrating endometriosis (DIE).
Intervention(s): Patients diagnosed with DIE underwent transvaginal ultrasound endometriosis mapping before laparoscopic surgery for full excision of endometriotic lesions.
Main Outcome Measure(s): Preoperative ultrasound evaluation, intra- and postoperative assessment, and anatomopathologic confirmation.
Result(s): Of the 463 patients who participated in the study, 111 (23.97%) presented with endometriosis nodules with USL involvement on ultrasound examination conducted by a single radiologist. Receiver operating characteristic curve analysis showed that the size of the USL nodule had a statistically significant association with ipsilateral ureteral involvement. After multivariate logistic regression, the variables reduction in ovarian mobility, ureteral changes on the right side, size of the USL nodule, and presence of endometrioma on the left side were significantly associated with a ureteral endometriosis nodule. However, the combined result for the variables cited was worse than the diagnostic analysis using only the size of the USL nodule.
Conclusion(s): Uterosacral ligament nodules with ultrasound measurements of 1.75 cm and 1.95 cm on the right and left sides, respectively, significantly increase the risk of ureteral involvement. Even with the association of other ultrasound variables, there was no improvement in sensitivity. Therefore, USL nodule size is a key measure for therapeutic planning and consent of the patient. (Fertil Steril® 2017;■:■–■. ©2017 by American Society for Reproductive Medicine.)
Key Words: Deep infiltrating endometriosis, endometriosis, uterosacral ligament, ureteral endometriosis, ureterolysis

Deep infiltrating endometriosis (DIE) has a multifocal distribution pattern (1) and can be found at the following anatomic locations, in decreasing order of frequency: uterosacral ligaments (69.2%), vagina (14.5%), bladder (6.4%), and intestine (9.9%) (2).

Ureteral endometriosis is relatively rare, but the current literature shows an increase in its incidence, ranging from 0.3% to 12%, owing to improvements in diagnostic tools as well as greater awareness and ability of surgeons to recognize the disease (3–6).

Ureteral endometriosis is classified into two types: intrinsic, which infiltrates the muscle and/or mucosal layer of the ureter; and extrinsic, which involves the adjacent peritoneum, uterosacral ligament (USL), and ovary (7). Intrinsic lesions represent 13.3%–38% of cases, and extrinsic lesions represent 62%–86.7% (8–11).

Regarding imaging diagnosis, pelvic endometriosis can be evaluated by various methods, and transvaginal ultrasound for endometriosis mapping is considered the gold standard (12, 13), with good sensitivity and specificity at 90.7% and 96.5%, respectively (13). However, for ureteral assessment, this technique has low sensitivity (but good specificity) (14).

The prevalence of ureteral endometriosis increases considerably when DIE lesions are present at multiple sites. Thus, the incidence of ureteral endometriosis is knowingly higher in patients

Received February 2, 2017; revised April 6, 2017; accepted April 18, 2017.
R.L. has nothing to disclose. H.A.-R. has nothing to disclose. A.L.N. has nothing to disclose. A.E. has nothing to disclose. A.L. has nothing to disclose. P.A.R. has nothing to disclose.
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Fertility and Sterility® Vol. ■, No. ■, ■ 2017 0015-0282/$36.00

http://dx.doi.org/10.1016/j.fertnstert.2017.04.013

with retrocervical endometriosis (15, 16). Donnez et al. (15) and Kondo et al. (16) found a significant increase in the prevalence of ureteral endometriosis in patients with retrocervical nodules $\geq$3 cm in diameter (11.2% and 17.9%, respectively).

Ureteral endometriosis is positively associated with USL endometriosis. Miranda-Mendoza et al. (17) observed that 12 of 13 patients with ureteral endometriosis presented with ipsilateral involvement of the USL. In the study by Seracchioli et al. (9), in 30 patients with ureteral endometriosis, all presented an association with unilateral USL endometriosis, but the nodule size that signals a significant association is unknown.

Ureteral endometriosis can lead to silent loss of kidney function and sometimes requires nephrectomy (1, 18, 19). Ureteral involvement is related to nonspecific symptoms because symptoms suggestive of possible secondary ureteral obstruction, such as abdominal or flank pain, renal colic, and hypertension, are rare (8, 20, 21).

Ureteral endometriosis can be approached laparoscopically (17, 22) and can be treated effectively with ureterolysis in almost all cases (23). This condition can be managed using ureterolysis, double-J catheter implantation, termino-terminal anastomosis after resection, or ureter reimplantation in the bladder using a Boari flap or psoas hitch (23).

Thus, considering the high morbidity of ureteral endometriosis, the difficulty in establishing an accurate diagnosis of this form of endometriosis, the association of ureteral endometriosis with other DIE lesions, and the high incidence of DIE on the USLs, we sought to evaluate the possible association between the size of the USL nodule and unilateral ureteral involvement.

MATERIALS AND METHODS

A cross-sectional observational study was carried out involving 463 medical records of patients undergoing laparoscopic surgical treatment for endometriosis in the period from April 2010 to November 2014. These patients had a clinical and imaging-based diagnosis of DIE.

Institutional review board approvals were obtained for the retrospective collection and analysis of data under protocol number CAAE 30269814.0.0000.5479. There was not any source of funding for this study, and the first author and coauthors presented no conflict of interest regarding this study.

To determine the sample size we performed a pilot study with 59 patients, using the size of the uterosacral ligament nodule measured by preoperative ultrasound and the presence of an ureteral endometriosis nodule, as determined through an anatomopathologic (AP) examination, as variables. These data were used to determine the appropriate sample size for detecting a significant difference between the two means. A two-sided test was conducted assuming a 5% significance level and 80% test power. The sample size calculated with the input data for the right side using an SD of 0.7730 and a detectable difference of 0.8110 equaled 14. For the left side, the sample size calculated with an SD of 0.8100 and a detectable difference of 0.773 was 17.

The criteria for inclusion in the study were as follows: women with ultrasound-diagnosed DIE with uni- or bilateral involvement of the USL, examination conducted by a single radiologist, women who underwent complete surgical removal of their DIE carried out by the same surgical team, existence of a digital video disc (DVD) record of the surgery, and AP confirmation of endometriosis.

Of the 111 patients who met the inclusion criteria, 83 presented with a right uterosacral ligament nodule (USL-R) on ultrasound examination and were divided into two groups: with and without ureteral nodule on AP assessment. Of the 111 patients, 99 patients had a left uterosacral ligament nodule (USL-L) and were divided into 2 groups: with and without ureteral nodule on AP assessment.

The variables evaluated were age, symptoms, prior drug treatment, prior surgeries for endometriosis, and postoperative complications.

The ultrasound data evaluated were ureteral change, size of the USL nodule, presence or absence of endometrioma, ovarian mobility, and evaluation of bladder, retrocervical, vaginal, and intestinal lesions.

The surgical data were analyzed through review of the videos of the surgeries archived on DVD, using the revised classification criteria of the American Fertility Society (AFSr), as well as the ureteral surgical approach, operating time (calculated from the introduction to removal of the optic from the abdominal cavity), and intraoperative complications.

Ultrasound Examination

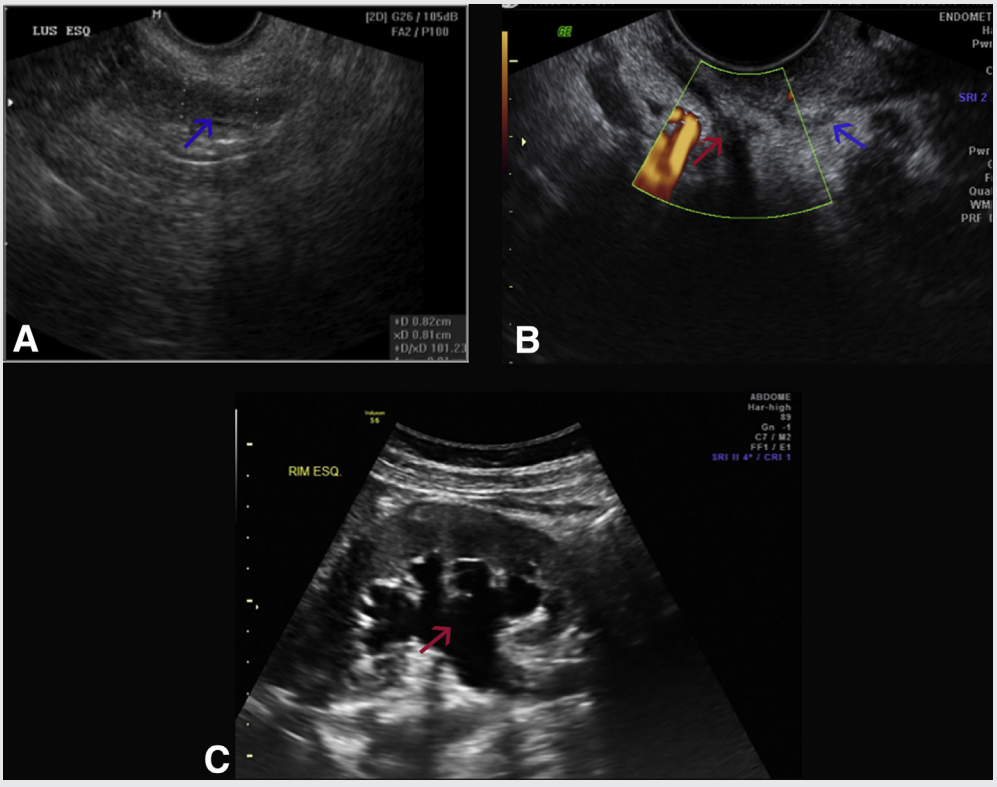
Transvaginal ultrasound with intestinal preparation for endometriosis mapping was performed following the standard protocol for our service and in accordance with the literature (24–26). On the day before the examination, all patients underwent intestinal preparation with oral laxative, 5 mg sodium picosulfate, or 5 mg bisacodyl, at 7:00 AM and 12:00 PM, combined with a light diet, in addition to an enema 1 hour before the examination to eliminate fecal residue or gas present in the rectosigmoid region.

On the day of evaluation the patients remained on a light diet, preferably a liquid diet. Each examination was interpreted in real time, documented through photographs, and carried out by the same examiner (A.L.N.). The devices used were a Volusom S6 (GE Healthcare) or IU 22 (Phillips Healthcare) machine with 5–9-MHz transducers. The following regions were examined: uterus and ovaries, vesico-uterine pouch, bladder, pouch of Douglas, USLs, uterine torus, retrocervical region, posterior vaginal fornix, rectosigmoid region, and ureters (especially within the transition with the USLs).

The ileum, cecum, appendix, and upper sigmoid were examined through an abdominal approach using 5–12-MHz linear transducers. Deep endometriosis lesions on the USLs were defined as arciform or nodular tissue thickening and were usually hypoechogenic, and some had tiny internal cysts, often with a retractile aspect characterized by spiculated contours.

The USL lesion was measured for its longest latero-lateral axis (from its insertion on the cervix to its most lateral margin, i.e., the area closest to the ureter) and also its

FIGURE 1



(**A**) *Blue arrow*, hypoechoic thickening of the USL-L. (**B**) *Blue arrow*, thickening of the USL-R; *red arrow*, ipsilateral ureteral ectasia. (**C**) *Red arrow*, renal pelvis dilation.

Lima. Uterosacral ligament endometriosis. Fertil Steril 2017.

thickness (Fig. 1A). The retrocervical lesion was considered to be located in the midline behind the cervix and was measured when it presented nodular appearance. It was measured for its longest latero-lateral axis (the borders are the lateral margins of the cervix) and anteroposteriorly (from the cervix toward the rectum). Retrocervical lesions with thickening appearance were not measured.

The ureters were observed in all of the tests, and the following were considered abnormal findings: deviation from the usual path toward the endometriosis lesion (medial deviation of the ureter), adhesions of the lesion on its surface, and the presence of ectasia (Fig. 1B). When any of these changes were observed, complementary evaluation of the kidneys was carried out abdominally using a 3–5-MHz transducer to detect signs of hydronephrosis (Fig. 1C).

Surgery

The surgeries were performed by a team with wide experience in the surgical treatment of DIE (P.A.R. and H.A.-R.). All of the patients underwent surgery through a laparoscopic approach, using a high-definition camera and Xenon Nova 300W as the light source, both from Storz. Access to the abdomen was gained through an 11-mm port via the umbilical route and three 6-mm portals in the usual triangulation positions. The gas used for distending the cavity was CO_2, and all of the surgeries were recorded on a DVD. The surgeries followed the standard procedure of our institution, which has already been reported (27), with special attention to the dissection of the retroperitoneal spaces, dissection of the ureters, and nerve preservation. Complete resection of all visible endometriosis lesions was performed, using harmonic energy and coagulation with bipolar energy when necessary.

Statistical Analysis

To compare the qualitative variables, Fisher's exact test was used, whereas the Kolmogorov-Smirnov test was applied to test data normality for quantitative variables. The variables with normal distribution are expressed as the mean ± SD, and variables with nonnormal distributions are expressed as the median (minimum–maximum variation). Student's *t* and the Mann-Whitney tests were used to compare parametric and nonparametric continuous variables, respectively. For inferential analysis, a significance level α of 5% was adopted.

A receiver operating characteristic curve was generated to identify the cutoff value and achieve the greatest sensitivity and specificity possible for the relationship between the size of the USL nodule on ultrasound assessment and the presence of ipsilateral ureteral nodule on AP assessment (gold standard).

Factors with at least one significant trend for association with ureteral endometriosis nodules on univariate analysis were included in a multiple logistic regression model, through a stepwise-forward procedure, in an attempt to improve the indirect preoperative diagnosis of ureteral endometriosis nodules.

When the nonparametric Kruskal-Wallis test was significant, Tukey's multiple comparison test was used as a complement to detect differences between means.

RESULTS

Of the 463 patients, 111 (23.97%) presented with an endometriosis nodule involving the USL on ultrasound examination. Among them, 71 (64.0%) presented with USL involvement on both sides, whereas 12 (10.8%) had involvement only on the right side, and 28 (25.2%) had involvement only on the left side. The mean age of the population studied was 36 years old (±6 years), ranging from 24 to 51 years, at the time of surgery. The median duration of surgery was 90 minutes, ranging from 16 to 240 minutes.

To assess the homogeneity of the sample, the 111 patients were divided into two groups: one with a ureteral nodule and another without a ureteral nodule on AP assessment. There was no significant difference between the groups in regard to age, prior drug treatment, and prior surgical treatment (Table 1).

Regarding the symptoms, 64.8% had dysmenorrhea, 25.5% chronic pelvic pain, 24.1% dyspareunia, 8.3% urinary symptoms, 13.3% intestinal symptoms, and 9.8% other. There was no significant difference between the groups with respect to the symptoms.

The median size of the USL nodule was greater in the group of patients with ureteral endometriosis nodules on AP assessment ($P<.001$); this group also presented a greater prevalence of bladder ($P<.0139$), vaginal ($P<.0001$), and intestinal ($P<.0106$) endometriosis lesions (Table 1). The percentage of retrocervical endometriosis did not vary significantly between the groups (Table 1).

The disease extension was evaluated according to the AFSr criteria during review of the videos. Severe endometriosis (stage IV) was more frequent among patients with a ureteral endometriosis nodule ($P=.0005$).

Subsequently, the 111 patients were divided into four groups according to the laterality of the USL nodules (right or left) and the presence or absence of ureteral nodules on AP assessment. Those with ureteral endometriosis nodules on both the right and left sides also presented with larger USL endometriosis nodules, as well as more ureteral changes on ultrasound, a higher prevalence of ipsilateral endometrioma, lower ovarian mobility, and a higher prevalence of vaginal endometriosis nodules; all such patients underwent ureterolysis (Table 2). Furthermore, patients with ureteral endometriosis nodules on the left side also presented with a greater prevalence of vesical and intestinal lesions.

Receiver operating characteristic curve analysis showed that the size of the USL nodule had a significant association with ipsilateral ureteral involvement. The sensitivity and specificity were calculated for each USL size value; a cutoff value of 1.75 cm was found on the right side, with a sensitivity of 88.2% and a specificity of 72.3% (Fig. 2). On the left side, a cutoff point of 1.95 cm was identified, with a sensitivity of 71.4% and a specificity of 61.4% (Fig. 2). These cutoff points were chosen to provide the best balance between sensitivity and specificity.

All of the patients underwent laparoscopic surgery, and all endometriosis lesions were completely resected. The group of patients with ureteral nodules on AP assessment presented greater duration of surgery than the group of patients without nodules, with 120 minutes (range, 24–240 minutes) vs. 80 minutes (range, 16–180 minutes), respectively ($P<.001$) (Table 1). The 16-minute surgical time case showed deep focal infiltrative endometriosis affecting the uterosacral ligament and homolateral ovarian fossa, without other lesions, and the surgical time was calculated from the introduction to removal of the optic from the abdominal cavity, so a shorter surgical time than the literature shows.

TABLE 1

Demographic and operative data of 111 patients with and without ureteral endometriosis nodules.

Characteristic	With ureteral endometriosis nodules	Without ureteral endometriosis nodules	*P* value
Age (y)	35.8 ± 5.8	36.2 ± 6.1	.746[b]
Duration of surgery (min)	120 (24–240)	80 (16–180)	.001[b]
Prior drug treatment (%)	64.1	66.7	.3826[a]
Prior surgery for DIE (%)	38.5	31.9	.6303[a]
USL nodule on ultrasound (cm)	2.00 (0.6–4.1)	1.60 (0.0–3.8)	<.001[b]
Bladder nodule on ultrasound (%)	25.6	6.9	.0139[a]
Retrocervical nodule on ultrasound (%)	82.1	75	.5412[a]
Vaginal nodule on ultrasound (%)	43.6	5.6	<.0001[a]
Intestinal nodule on ultrasound (%)	74.4	47.2	.0106[a]
Intraoperative complications	0	0	Not applicable
Postoperative complications (%)	7.7	8.3	1.0000[a]

Note: Data are expressed as mean ± SD (if normal distribution), median (range) (if nonnormal distribution), or percentage.
[a] χ^2 test.
[b] Mann-Whitney test.

Lima. Uterosacral ligament endometriosis. Fertil Steril 2017.

TABLE 2

Ultrasound and operative data of 111 patients with ureteral endometriosis nodules and without ureteral endometriosis nodules on the right and left sides.

	Right hemipelvis			Left hemipelvis		
Changes on ultrasound	With ureteral nodules	Without ureteral nodules	*P* value[a]	With ureteral nodules	Without ureteral nodules	*P* value
Size of USL nodule (cm)	2.20 (0.8–4.0)	1.20 (0.0–3.2)	<.001	2.45 (1.2–4.1)	1.70 (0.0–3.8)	<.001[b]
Ureteral change (%)	58.8	4.3	<.0001	35.7	3.6	<.0001[a]
Endometrioma (%)	41.2	14.9	.0271	57.1	25.3	.0042[a]
Ovarian mobility (%)	11.8	70.2	<.0001	32.1	56.6	.0431[a]
Bladder (%)	23.5	17.0	.764	32.1	13.3	.049[a]
Retrocervical (%)	82.4	76.6	.836	85.7	74.7	.345[a]
Vagina (%)	52.9	16.0	.002	50.0	12.0	<.001[a]
Intestine (%)	76.5	53.2	.129	75.0	49.4	.032[a]
Ureterolysis in laparoscopy (%)	100	27.7	<.0001	100	44.6	<.0001[a]

Note: Data are expressed as median (range) (if nonnormal distribution) or percentage.
[a] χ^2 test.
[b] Mann-Whitney test.

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Of the 45 ureters with endometriosis nodules, 42 (93.3%) underwent ureterolysis, and 3 (6.6%) underwent ureterolysis plus prophylactic double-J catheter implantation at the end of the surgery. No ureter required anastomosis or ureteral reimplantation. All of the ureteral endometriosis lesions were extrinsic. We observed no cases of intrinsic ureteral endometriosis in this study group.

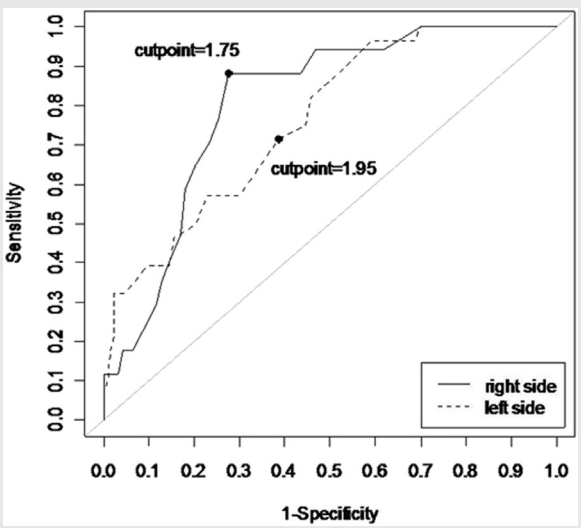
No intraoperative complications were observed, whereas in the postoperative period in the group with ureteral nodules on AP assessment, three patients (7.7%) presented with complications, as follows. One woman (2.5%) had urinary retention: an indwelling Foley catheter was repositioned for 48 hours, and complete urinary function was re-established after its removal. There were two cases (5%) of intestinal complications in patients undergoing rectosigmoidectomy. One (2.5%) was a case of rectovaginal fistula, which was submitted to laparoscopic reopening for washing and drainage of the cavity; second intention healing was chosen because the fistula was very low, low anastomosis at 5 cm anal verge. The other one (2.5%) was a case of leakage, which was treated with drainage of the abdominal cavity and antibiotic.

The group without ureteral nodule on AP assessment presented six patients (8.3%) with complications: three cases (4.16%) of urinary retention, which underwent physiotherapy with complete urinary function re-established; one case (1.3%) of difficulty walking that improved with physiotherapy; and two cases (2.6%) of intestinal complications in patients who underwent rectosigmoidectomy, of which one (1.3%) was a case of leakage, treated with drainage of the abdominal cavity and antibiotic, and one (1.3%) was a case of stenosis of the rectosigmoid anastomosis, for which new intestinal anastomosis was performed with complete resection of the disease. There was no significant difference between the groups with respect to complications (Table 1).

In the right hemipelvis, linear regression using the ultrasound findings showed that ureteral changes, USL size, the presence of endometrioma, vaginal nodules, and reduced ovarian mobility were associated with ipsilateral ureteral endometriosis nodules on univariate analysis. In the left hemipelvis, in addition to ureteral changes, USL nodule size and reduced ovarian mobility, the presence of endometrioma, bladder nodules, vaginal nodules, and rectosigmoid nodules were also associated with ipsilateral ureteral endometriosis nodules on univariate analysis.

After multivariate logistic regression using the stepwise-forward method, the variables reduction in ovarian mobility and ureteral changes on the right side were found to be significantly associated with ureteral endometriosis nodules, whereas the variables USL size, endometrioma, and vaginal nodule did not meet the significance level for inclusion in the model. Applying the same statistical methodology to the

FIGURE 2



Receiver operating characteristic curve showing the association between the USL nodule size on ultrasound examination and ipsilateral ureteral involvement by endometriosis, on the right and left sides.

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lesions of the left ureter, the USL nodule size and the presence of endometrioma were significantly associated with ureteral endometriosis nodules in the model, whereas the variables bladder nodules, vaginal nodules, rectosigmoid nodules, and reduced ovarian mobility were not significant for inclusion in the model. It is worth noting, however, that the combined result of these variables cited, even when significant, was worse than the diagnostic analysis using only the USL nodule size.

DISCUSSION

Considering only the unilateral DIE lesions, the anatomic distribution showed a predisposition for the left side of the pelvis, with involvement of the USL-L in 85.3% of cases (29 of 34), of the left ureter in 66.7% (22 of 33), and of the left ovary in 68.4% (26 of 38), which is consistent with the literature (28–30). In addition, ovarian mobility was higher on the right side, showing that the left ovaries were more adhered.

In our study, we found ureteral endometriosis involving the lower third of the pelvic ureter, usually on the left side, as mentioned by others (11, 31–34).

With respect to symptoms, there was no significant difference between the groups with and without ureteral nodules. Ureteral involvement is usually silent (17, 35). Therefore, it should be suspected in all cases of DIE and investigated with imaging tests in the preoperative period (17).

The incidence of ureteral endometriosis is estimated at 0.08%–12% of all women with DIE (3, 15, 36, 37). However, in a select group of patients, such as the sample studied, with endometriosis involving the USL, the prevalence of ureteral endometriosis was 35.1%, which is similar to the studies previously published in the literature that show greater ureteral involvement in patients with USL nodules (17, 32).

The diagnostic analysis shows that ultrasound assessment of the ureter has a low sensitivity and high specificity, which is in agreement with a previously published study (14); this finding justifies the need to identify indirect measures for estimating the risk of ureteral involvement. In the literature it is already well characterized that a retrocervical nodule $\geq$3 cm significantly increases the risk of ureteral involvement (15, 16, 35).

In this study we unprecedentedly establish a numerical correlation between ultrasound measurements of uterosacral ligament nodules and the risk of ipsilateral ureteral involvement by endometriosis.

Ureteral involvement becomes more likely when associated with USL nodules with ultrasound measurements of 1.75 cm and 1.95 cm on the right and left sides, respectively, thereby increasing the sensitivity in diagnosing ureteral endometriosis. The presence of a USL-R nodule measuring 1.75 cm has a sensitivity of 88.2% and a specificity of 72.3% for estimating the risk of ureteral involvement. Similarly, the ultrasound finding of a USL-L nodule measuring 1.95 cm has a sensitivity of 71.4% and a specificity of 61.4% for estimating the risk of ureteral involvement. These data are important for therapeutic planning and consent of the patient.

Usually, ureteral endometriosis is associated with other DIE lesions (17, 23, 38). In the present study this association was evaluated in both hemipelvises separately. The presence of ureteral endometriosis was found to be significantly associated with the USL (right and left: $P<.001$), ovarian endometrioma (right: $P=.02$; left: $P=.004$), ovarian mobility (right: $P<.0001$; left: $P=.04$), bladder (left: $P=.049$), vagina (right: $P=.002$; left: $P<.001$), and intestine (left: $P=.03$).

Unlike the findings reported by other authors, we found no association between ureteral endometriosis and retrocervical nodules (15, 16, 35). Among the possible reasons for this difference, we note that in our study we measured retrocervical and USL lesions separately. This approach provides a more accurate measurement and decreases the size of retrocervical nodules, which were measured in other studies together with USL lesions.

According to Uccella et al. (38), patients with ureteral nodules present with advanced stages of disease. Similarly to those authors, we observed that patients with ureteral endometriosis presented with more severe endometriosis according to the AFSr classification than patients without ureteral nodules: 74.4% vs. 40.3%, respectively ($P=.0005$).

Aiming to improve our indirect diagnosis of ureteral nodules, we conducted a multivariate logistic regression analysis. Thus, we observed that on the right side, there was an association between ureteral lesions on ultrasound examination and reduced ovarian mobility (fixed ovary), with a sensitivity of 97.8% and a specificity of 52.9%. With respect to the left ureter, combining ureteral changes on ultrasound examination, USL-L lesion size, and the presence of endometrioma yielded a sensitivity of 95.7% and a specificity of 46.4%. There was an increase in sensitivity but a decrease in specificity, showing that the combined result using these variables was worse than the diagnosis made only according to USL lesion size. These findings confirm the importance of ultrasound measurements of the USLs as the main predictive variable of risk of ureteral involvement in women with DIE.

In our study ureteral lesions were initially treated with ureterolysis, with or without the need for double-J catheter implantation, in agreement with the literature (16). We were successful in all cases, and double-J catheter implantation was required in two patients to prevent fistulas. These two cases presented with hydronephrosis on preoperative ultrasound assessment. No patients showed persistence of ureteral dilation after ureterolysis, requiring no patient to undergo reimplantation or segmental resection of the ureter.

In accordance with the literature, we claim that ureterolysis is effective in most cases of ureteral endometriosis, even in cases with hydronephrosis (23, 37, 39).

In conclusion, ultrasound measurement of USL nodules increases the sensitivity of the diagnosis of ureteral endometriosis. Uterosacral ligament nodules measuring 1.75 cm on the right and 1.95 cm on the left significantly increase the risk of ureteral involvement. The combination of other ultrasound variables showed no improvement in the diagnosis of ureteral endometriosis compared with USL lesion measurement alone. This component is, therefore, a key measure for therapeutic planning and consent of the patient.

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