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Transvaginal ultrasound for detecting parametrial involvement in suspected deep pelvic endometriosis: updated meta-analysis

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KEYWORDS: endometriosis; parametrium; transvaginal; ultrasound

ABSTRACT

Objective *To perform an updated meta-analysis evaluating the diagnostic performance of transvaginal ultrasound (TVS) for detecting lateral parametrial involvement in women with suspected deep pelvic endometriosis.*

Methods *A literature search was performed in the Web of Science, PubMed and Scopus databases from January 2021 to May 2024 for studies evaluating TVS for detecting parametrial involvement in women with suspected deep pelvic endometriosis, using laparoscopy with or without histology as the reference standard. The information gathered was combined with data from our previous meta-analysis on this topic. Pooled sensitivity and specificity were calculated overall and for subgroup analyses considering parametrial laterality. The Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2) tool was used to evaluate study quality.*

Results *After exclusions, four new studies fulfilling the selection criteria were identified. Combined with the four studies included in our previous meta-analysis, eight studies including a total of 6728 women (13 456 parametria) were included. The mean prevalence of parametrial involvement was 21.3%. The pooled sensitivity and specificity of TVS for detecting parametrial involvement were 63% (95% CI, 31–86%) and 98% (95% CI, 96–99%), respectively. When considering only the five studies that reported laterality, the corresponding values were 85% (95% CI, 64–95%) and 98% (95% CI, 92–99%) for the left parametrium and 84% (95% CI, 61–94%) and 97% (95% CI, 92–99%) for the right parametrium. Heterogeneity was high for the overall analysis and subgroup analyses.*

Conclusions *The diagnostic performance of TVS for detecting parametrial involvement in women with suspected deep pelvic endometriosis is better than that reported previously. This may be attributable to the use of a standardized TVS scanning technique and improved knowledge of pelvic ultrasound anatomy. Accurate parametrial assessment could improve surgical planning and patient outcome.* © *2025 The Author(s). Ultrasound in Obstetrics & Gynecology published by John Wiley & Sons Ltd on behalf of International Society of Ultrasound in Obstetrics and Gynecology.*

INTRODUCTION

Endometriosis is a relatively common benign chronic disease affecting mainly women of reproductive age[1]. Transvaginal ultrasound (TVS) is considered the first-line imaging technique for diagnosing this disease[2]. Several meta-analyses have shown that TVS has good diagnostic performance for endometriosis, similar to that of magnetic resonance imaging (MRI)[3–6]. In 2016, the International Deep Endometriosis Analysis (IDEA) group published a consensus opinion proposing a standardized approach for the sonographic evaluation and reporting of findings in women with suspected pelvic endometriosis[7]. Many studies published since then have employed this approach.

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Among the various pelvic organs and anatomical structures that may be affected by endometriosis, the parametrium is of particular importance. Parametrial involvement is clinically relevant because it has been associated with more severe dysmenorrhea, more frequent voiding problems and constipation[8]. More importantly, parametrial involvement may cause progressive extrinsic or intrinsic ureteral obstruction, leading to silent functional loss of the ipsilateral kidney[9].

However, managing women with parametrial endometriotic involvement is challenging. This is particularly true when surgery is considered because of the advanced surgical skill and multidisciplinary team required[10]. Therefore, accurate diagnosis of parametrial involvement is essential for adequate management.

Assessment of the parametrium by TVS in women with pelvic endometriosis has been chronically underutilized. In 2021, our group published a systematic review and meta-analysis addressing this topic[11]. We reported that very few studies had been published to that date and that, while pooled specificity was high, pooled sensitivity was low. In that study, we did not assess which parametrial region (anterior, lateral or posterior) was involved.

Since then, the IDEA group has published an addendum to their original consensus statement in order to stress the importance of evaluating the parametrium and provide instruction on how to perform this assessment[12]. In recent years, several studies focusing on TVS assessment of parametrial involvement in endometriosis have been published. Meta-analysis of these new studies could offer fresh insight on this topic, specifically whether standardized scanning techniques and sonographer expertise in regard to parametrial anatomy could improve the detection of parametrial involvement in deep endometriosis.

The aims of this study were to update our previous meta-analysis with data from more recently published studies and to assess whether their inclusion modifies our pooled findings on the diagnostic performance of TVS for detecting parametrial involvement in women with suspected deep pelvic endometriosis.

METHODS

This updated systematic review and meta-analysis was performed according to the Synthesizing Evidence from Diagnostic Accuracy TEsts (SEDATE) guideline and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement[13,14]. The protocol was registered in the PROSPERO database (registration number: CRD42024581246). Institutional review board approval was waived because of the nature and design of the study.

We used data from our previous meta-analysis[11] and conducted an additional search in three databases (Web of Science, PubMed and Scopus) for studies published between January 2021 and May 2024 evaluating TVS for detecting parametrial involvement in women with suspected deep pelvic endometriosis. The search terms used in all databases were as follows: 'endometriosis', 'parametrium', 'parametrial', 'ultrasound' and 'sonography'. No language restriction was applied. The search strategy is shown in Appendix S1.

Three authors (J.L.A., C.M., C.Can.) screened the titles and abstracts of reports identified by the literature search to exclude articles not strictly related to the topic of the review, narrative reviews, Letters to the Editor and case reports. Full-text versions of the remaining articles were obtained to identify potentially eligible studies according to the following inclusion criteria: (1) participants were premenopausal women with a clinical suspicion of deep pelvic endometriosis; (2) the index test was TVS; (3) the reference standard was laparoscopy with or without histological confirmation; and (4) sufficient data were reported to construct a 2×2 table for parametrial involvement. We reviewed the reference lists of the selected studies to identify further potentially eligible articles. In the case of missing relevant data, we sought to contact the authors to solicit this information.

For each study included in the meta-analysis, the following data were retrieved: year of publication, country, study design, type of series (consecutive or not), number of patients, mean age of patients, inclusion and exclusion criteria, TVS scanning technique, sonographic definition of parametrial involvement, number of patients with parametrial involvement, laterality of parametrial involvement, numbers of true positives, true negatives, false positives and false negatives, number of participating centers, number of examiners, experience level of examiners, blinding of examiners, definition of reference standard and time elapsed between ultrasound and surgery. We focused specifically on the lateral parametrium.

Risk-of-bias assessment of the included studies was conducted using the Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2) tool[15], which includes four domains: (1) patient selection; (2) index test; (3) reference standard; and (4) flow and timing. Three authors (C.M., C.Can., C.Cat.) independently assessed the methodological quality using a standard form with quality assessment criteria. Disagreements were resolved by discussion with a fourth author (J.L.A.) to reach a consensus. The authors determined the risk of selection bias based on the description of the inclusion and exclusion criteria of the studies. The descriptions of the TVS scanning technique and criteria used to establish the presence of disease were used to assess the index test domain. To evaluate the reference standard domain, the method used to determine the presence of endometriosis in the parametrium (laparoscopy alone or with histological confirmation) was assessed. For the flow and timing domain, the time elapsed between the index test assessment and the reference standard result was evaluated. Concerns regarding applicability to the review question were evaluated for the patient selection, index test and reference standard domains.

The primary outcomes of the quantitative synthesis were the pooled sensitivity, specificity, positive likelihood ratio, negative likelihood ratio and diagnostic odds ratio of TVS in the detection of parametrial endometriosis.

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Post-test probabilities were calculated and plotted on Fagan nomograms.

Forest plots were created, and the I^2 index was used to assess for the presence of heterogeneity. Meta-regression was conducted if heterogeneity was found ($I^2 > 60\%$). The variables assessed for meta-regression were year of publication, number of patients in the series, prevalence of parametrial involvement and whether or not laterality assessment was performed. A summary receiver-operating-characteristics (sROC) curve was plotted to illustrate the relationship between sensitivity and specificity. A subgroup analysis was performed to determine the diagnostic performance of TVS according to the laterality of the parametrial involvement (left *vs* right). We decided to assess publication bias only if 10 or more studies were found.

Statistical analysis was performed using Meta-analytical Integration of Diagnostic Accuracy Studies (MIDAS) and METANDI commands in STATA version 12 for Windows (Stata Corp., College Station, TX, USA). Forest plots were developed using RevMan 5.4.1 software (Cochrane Collaboration, 2020). $P < 0.05$ was considered statistically significant.

RESULTS

In this updated meta-analysis, the literature search yielded 115 records (Figure 1). After 36 duplicates had been removed, the titles and abstracts of the remaining 79 records were screened. Sixty-three records were excluded (58 were not related to the topic of the review, four were narrative reviews and one was a case report). The full texts of the remaining 16 articles were reviewed. Twelve articles were further excluded (two narrative reviews, two studies not related to the topic of the review, four studies that did not report data on the lateral parametrium, one Letter to the Editor and three studies that did not report sufficient data to construct a 2 × 2 table), and four studies were selected for inclusion[16–19].

In our previous meta-analysis, we had included four studies[20–23]. Therefore, eight studies were ultimately included in this updated meta-analysis[16–23]. Excluded studies are listed in Appendix S2.

Characteristics of included studies

The eight included studies reported data from 6728 women (13 456 parametria). The number of parametria with endometriotic involvement was 4225 (mean prevalence, 21.3% (range, 2.5–39.3%)) (Table 1).

Five studies had a prospective design[17–20,23] and three were retrospective analyses[16,21,22]. All studies had clearly defined inclusion criteria, but two did not define exclusion criteria[16,19]. All studies used TVS as the index test, but

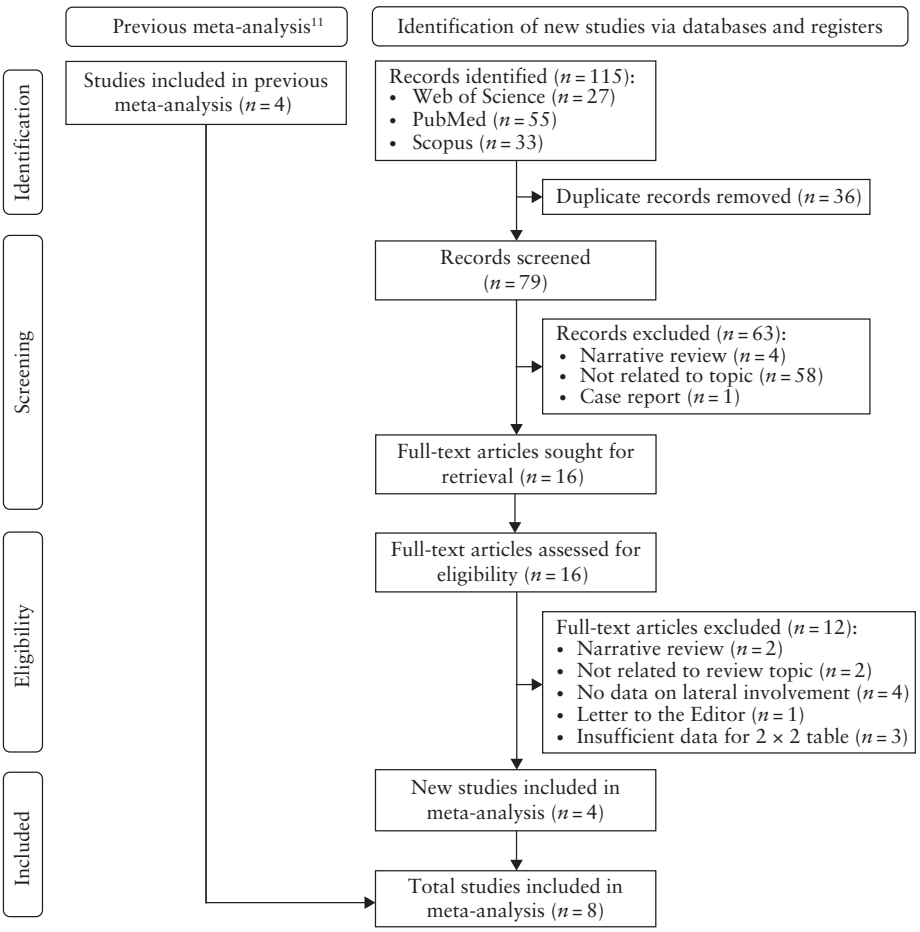

Figure 1 Flowchart summarizing inclusion of studies in meta-analysis.

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Table 1 Main characteristics of studies included in meta-analysis on diagnostic accuracy of transvaginal ultrasound (TVS) for detecting parametrial involvement in women with suspected deep pelvic endometriosis

Study	*Country*	*Study design*	*Centers* (n)	*Patients* (n)	*Mean age (years)*	*Parametria involved* (n/N)	*RP involved* (n)	*LP involved* (n)	*Observers* (n)	*Observer blinded*	*Index test*	*Sonographic criteria for parametrial involvement*	*Reference standard*	*Surgeon blinded*	*Days from US to surgery*
Holland (2013)[23]	UK	Prosp	2	198	35	13/396	NS	NS	2	NA	TVS	NS	LPS	Yes	NS
Exacoustos (2014)[20]	Italy	Prosp	3	104	35.6	61/208	28	33	1	NA	TVS	Infiltrating irregular hypoechogenic tissue that can be medially delimited from cervical vascular plexuses using color or power Doppler	LPS + H	No	< 90
Yin (2020)[22]	China	Retro	1	198	35.4	10/396	NS	NS	1	NS	TVS	NS	LPS*	NS	< 14
Bazot (2021)[21]	France	Retro	1	60	33	42/120	NS	NS	1	NS	TVS	Infiltrating irregular hypoechogenic tissue that can be medially delimited from cervical vascular plexuses using color or power Doppler	LPS + H	No	91 (1–395)†
Di Giovanni (2022)[16]	Italy	Retro	1	4983	NS	3737/9966	1694	2043	1	NS	TVS	Presence of irregular avascular or poorly vascularized hypoechogenic tissue disrupting normal appearance of retrocervical/parametrial area	LPS + H	NS	< 30
Barra (2024)[17]	Italy	Prosp	1	545	36	88/1090	46	42	4	NA	TVS + TAS	Mildly hypoechoic lesions and/or starry morphology infiltrating retroperitoneal space and/or irregular margins and/or low vascularization	LPS + H	No	< 14
Garzon (2024)[18]	Italy	Prosp	NS	476	NS	145/952	54	91	NA	NA	TVS	Ill-shaped or fan-shaped hypoechoic nodules	LPS + H	NS	NS
Moro (2024)[19]	Italy	Prosp	3	164	35	129/328	64	65	5	NA	TVS	Hypoechoic tissue with hyperechoic outer border, irregular margins and no vascularization	LPS + H	Yes	< 30

Only first author is given for each study. *Study did not specify whether diagnosis was confirmed by histology (H). †Median (range). LP, left parametrium; LPS, laparoscopic surgical findings; NA, not applicable; NS, not stated; Prosp, prospective; Retro, retrospective; RP, right parametrium; TAS, transabdominal ultrasound; US, ultrasound.

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one added transabdominal ultrasound[17]. Four studies were performed in a single center[16,17,21,22], three studies were multicentric[19,20,23] (although in one study, the same examiner performed all ultrasound scans[20]) and in one study this information was not available[18].

Information regarding which parametrium was involved (left and/or right) was reported in five studies[16–20]. The right parametrium was involved in 1886 women (mean prevalence, 23.9% (range, 8.4–39.0%)) and the left parametrium was involved in 2274 women (mean prevalence, 27.8% (range, 7.7–41.0%)). All studies reported data on the lateral parametrium and three also reported data on the ventral and dorsal parametria[16,17,19]. We performed the quantitative synthesis only for the lateral parametrium.

Quality assessment

Evaluation of study quality using the QUADAS-2 tool is summarized in Table 2. Four studies were considered as high risk for selection bias because of the study design, inadequate patient exclusion or lack of defined exclusion criteria[16,18,19,22]. Six studies were considered as low risk for the index test domain because they described clearly the TVS scanning technique and criteria for parametrial involvement[16–21]. One study was considered to have an unclear risk of bias in this domain because these characteristics were not described adequately[23]. The remaining study was considered high risk in this domain because the parametrium was specified as the broad ligament without describing the identification of the structure[22].

Six studies were considered to have low risk of bias for the reference standard[16–21]. One study was considered to have an unclear risk, as it did not specify whether the diagnosis was confirmed by histology[22]. In the remaining study, confirmation was obtained only by surgery, and it was therefore considered high risk[23].

Regarding flow and timing, two studies did not provide relevant information and so were considered to have unclear risk of bias in this domain[18,23]. One study was considered as high risk because it included patients for whom surgery was performed more than 180 days after ultrasound evaluation[21]. The remaining five studies were considered as low risk[16,17,19,20,22].

Table 2 Quality assessment of studies included in meta-analysis using Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2) tool

Study	*Patient selection*	*Index test*	*Reference standard*	*Flow and timing*
Holland (2013)[23]	Low risk	Unclear	High risk	Unclear
Exacoustos (2014)[20]	Low risk	Low risk	Low risk	Low risk
Yin (2020)[22]	High risk	High risk	Unclear	Low risk
Bazot (2021)[21]	Low risk	Low risk	Low risk	High risk
Di Giovanni (2022)[16]	High risk	Low risk	Low risk	Low risk
Barra (2024)[17]	Low risk	Low risk	Low risk	Low risk
Garzon (2024)[18]	High risk	Low risk	Low risk	Unclear
Moro (2024)[19]	High risk	Low risk	Low risk	Low risk

Only first author is given for each study.

Regarding applicability, all studies were deemed to include patients who were relevant to the review question. For the index test domain, six studies were considered to have low concern for applicability, as the index test was described sufficiently well for study replication. One study was considered to have high concern because of the anatomical area assessed (broad ligament)[22] and one study was considered as unclear[23]. All studies had low concern regarding applicability for the reference standard domain.

Quantitative synthesis

The pooled sensitivity, specificity, positive likelihood ratio, negative likelihood ratio and diagnostic odds ratio of TVS for detecting endometriotic infiltration of the parametrium were 63% (95% CI, 31–86%), 98% (95% CI, 96–99%), 35.0 (95% CI, 13.2–96.5), 0.40 (95% CI, 0.17–0.87) and 94.9 (95% CI, 21.3–423.3), respectively (Figure 2). Heterogeneity was high for both sensitivity ($I^2 = 99.2\%$) and specificity ($I^2 = 97.7\%$). Meta-regression identified laterality assessment and prevalence of parametrial involvement as explanatory variables for heterogeneity in sensitivity and specificity, respectively.

The sROC curve for parametrial involvement is shown in Figure 3. The area under the curve was 0.97 (95% CI, 0.96–0.98). The Fagan nomogram showed that a positive result on TVS increased significantly the probability of identifying parametrial endometriotic involvement on laparoscopy, from 21% pretest to 90% post-test, while a negative TVS result decreased the probability from 21% pretest to 10% post-test (Figure 4).

Publication bias was not assessed owing to the number of included studies being less than 10.

Subgroup analysis for parametrial laterality

Subgroup analysis was conducted including only the five studies that reported whether the left and/or right parametria were involved[16–20]. The pooled sensitivity, specificity, positive likelihood ratio, negative likelihood ratio and diagnostic odds ratio of TVS for detecting endometriotic infiltration of the left parametrium were 85% (95% CI, 64–95%), 98% (95% CI, 92–99%), 35.5 (95% CI, 9.2–137.1), 0.15 (95% CI, 0.06–0.42) and 230 (95% CI, 31–1727), respectively (Figure S1). Heterogeneity was high for both sensitivity ($I^2 = 98.5\%$) and specificity ($I^2 = 97.7\%$). The area under the sROC curve for the left parametrium was 0.98 (95% CI, 0.96–0.99) (Figure S2). The Fagan nomogram showed that a positive result on TVS increased significantly the probability of left parametrial endometriotic involvement, from 28% pretest to 93% post-test, while a negative TVS result decreased the probability from 28% pretest to 6% post-test (Figure S3).

The pooled sensitivity, specificity, positive likelihood ratio, negative likelihood ratio and diagnostic odds ratio of TVS for detecting endometriotic infiltration of the right parametrium were 84% (95% CI, 61–94%), 97% (95% CI, 92–99%), 30.0 (95% CI, 9.1–97.1),

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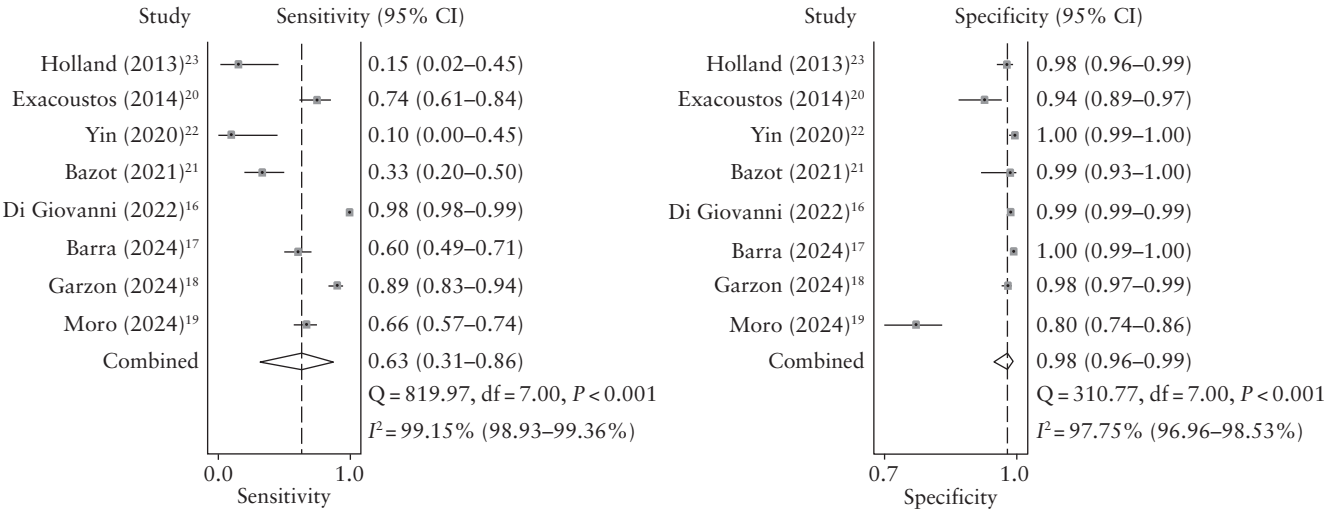

Figure 2 Forest plots of sensitivity and specificity of transvaginal ultrasound for detection of parametrial involvement in women with suspected deep pelvic endometriosis. Only first author is given for each study.

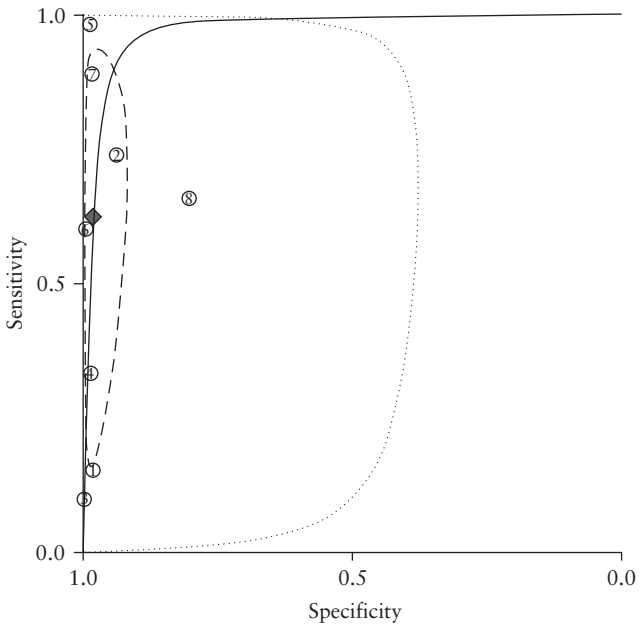

Figure 3 Summary receiver-operating-characteristics curve (——) for transvaginal ultrasound in detecting parametrial involvement in women with suspected deep pelvic endometriosis. – –, 95% confidence contour; ·····, 95% prediction contour; ○, observed data; ◆, summary operating point (sensitivity, 0.63 (95% CI, 0.31–0.86); specificity, 0.98 (95% CI, 0.96–0.99)).

0.17 (95% CI, 0.06–0.46) and 177 (95% CI, 26–1288), respectively (Figure S4). Heterogeneity was high for both sensitivity ($I^2 = 98.3\%$) and specificity ($I^2 = 96.9\%$). The area under the sROC curve for the right parametrium was 0.98 (95% CI, 0.96–0.99) (Figure S5). The Fagan nomogram showed that a positive result on TVS increased significantly the probability of right parametrial endometriotic involvement, from 24% pretest to 90% post-test, while a negative TVS result decreased the probability from 24% pretest to 5% post-test (Figure S6).

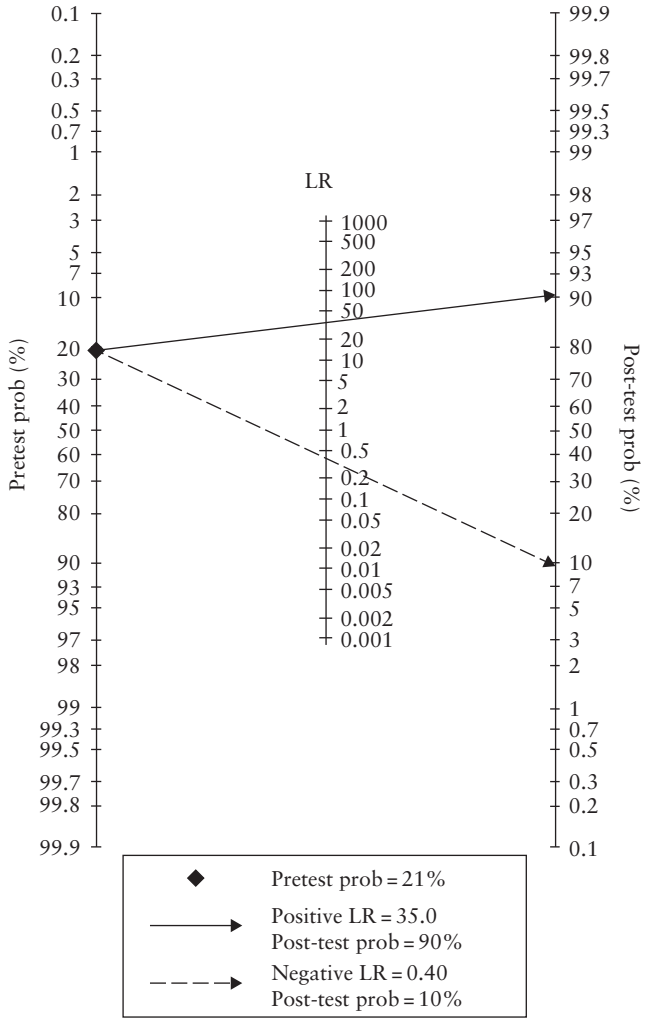

Figure 4 Fagan nomogram for transvaginal ultrasound in detecting parametrial involvement in women with suspected deep pelvic endometriosis. LR, likelihood ratio; prob, probability.

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Despite finding high heterogeneity, meta-regression was not performed because of the limited number of studies.

DISCUSSION

In this updated meta-analysis, the pooled sensitivity of TVS for detecting endometriotic involvement in the lateral parametrium in women with suspected deep pelvic endometriosis was significantly higher than that reported in our previous meta-analysis (63% *vs* 31%). Furthermore, subgroup analysis including studies that assessed parametrial laterality reported higher pooled sensitivity (85% for left parametrium and 84% for right parametrium). This can be explained by the fact that the studies included in the previous meta-analysis did not follow a standardized approach for TVS scanning of the parametrium, whereas the studies reported more recently employed a defined scanning protocol[16–19]. This protocol was not identical in all the studies but shared significant similarities. It is apparent that, when the examiner follows a standardized TVS scanning approach, the chance of identifying lesions is much higher. In our opinion, this is the main difference between the 'old' and 'new' studies included in this meta-analysis.

The pooled number of patients included in the updated meta-analysis was significantly higher than that in the previous review (6728 *vs* 560 women). Improved knowledge of pelvic sonographic anatomy, particularly that of the parametrium, might have contributed to the better diagnostic performance observed herein, as sonographers may now be more skilled at identifying this structure[24]. These results reinforce the value of the IDEA group's addendum regarding the ultrasound evaluation of the parametrium in women with suspected pelvic endometriosis[12].

A major limitation of our review is that we conducted our literature search in only three databases, which means that some studies addressing the review question could have been missed. Indeed, despite representing an improvement over the previous meta-analysis, the number of included studies is still low. Moreover, we observed that the quality of the included studies is limited, particularly with regard to patient selection, with two failing to define exclusion criteria[16,22]. We also consider as a limitation the fact that all included studies published since 2022 came from the same country and from expert groups of examiners, which could call into question the generalizability of our findings. Furthermore, no study assessed the intra- or interobserver reproducibility of TVS assessment. In addition, we observed high heterogeneity in sensitivity and specificity between the included studies. Despite performing meta-regression and sensitivity analyses, heterogeneity remained high. We identified laterality assessment and prevalence of parametrial involvement as sources of heterogeneity in sensitivity and specificity, respectively. As such, our results should be interpreted with some caution. Finally, most of the studies did not adhere to standardized IDEA terminology, but instead used their own methodology.

Despite these limitations, our findings are encouraging and demonstrate that parametrial involvement can be assessed using TVS with a high degree of accuracy. This is particularly relevant for surgeons, as knowledge of the extent of parametrial endometriotic involvement may help to tailor surgical management of these patients.

We believe that our data support the adoption of a standardized scanning protocol for assessing parametrial involvement in all women suspected to have deep pelvic endometriosis, as proposed recently by the IDEA group[12]. There has been recent debate regarding the adoption of simplified scanning protocols for endometrial assessment[25–27]. However, our data reveal that parametrial involvement is not uncommon (it is found in one in five women suffering from deep endometriosis), and the clinical implications might be important (for example, ureteral involvement with silent loss of renal function). We believe that specific training programs for sonographers for assessing the parametrium in women with suspected deep pelvic endometriosis should be developed.

Questions remain regarding TVS assessment of the parametrium in women with suspected deep pelvic endometriosis, such as operator training and the learning curve required to obtain competence. Future research should focus on assessing interobserver reproducibility, delineating the learning curve and comparing the diagnostic performance of TVS with that of other imaging techniques, such as MRI.

In conclusion, this updated meta-analysis found that standardized assessment of the parametrium by TVS has high accuracy for detecting endometriotic lesions. Our results call for the adoption of standardized protocols for ultrasound scanning of the parametrium in clinical practice and the performance of further validation studies.

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SUPPORTING INFORMATION ON THE INTERNET

The following supporting information may be found in the online version of this article:

Appendix S1 Search strategy.

Appendix S2 Studies excluded from meta-analysis.

Figures S1–S3 Forest plots (Figure S1), summary receiver-operating-characteristics curve (Figure S2) and Fagan nomogram (Figure S3) of transvaginal ultrasound for assessment of left parametrial involvement in women with suspected deep pelvic endometriosis.

Figures S4–S6 Forest plots (Figure S4), summary receiver-operating-characteristics curve (Figure S5) and Fagan nomogram (Figure S6) of transvaginal ultrasound for assessment of right parametrial involvement in women with suspected deep pelvic endometriosis.

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Ecografía transvaginal para la detección de la afectación parametrial en casos de sospecha de endometriosis pélvica profunda: metaanálisis actualizado

RESUMEN

Objetivo. Actualizar un metaanálisis con el que evaluar el desempeño diagnóstico de la ecografía transvaginal (ETV) para detectar la afectación parametrial lateral en mujeres con sospecha de endometriosis pélvica profunda.

Métodos. Se realizó una búsqueda bibliográfica en las bases de datos Web of Science, PubMed y Scopus desde enero de 2021 hasta mayo de 2024 de estudios que evaluaran la ETV como el método de detectar la afectación parametrial en mujeres con sospecha de endometriosis pélvica profunda, utilizando como estándar de referencia la laparoscopia, con o sin histología. La información recopilada se combinó con los datos de un metaanálisis anterior sobre este tema. La sensibilidad y la especificidad combinadas se calcularon en conjunto y mediante análisis de subgrupos, teniendo en cuenta la lateralidad parametrial. La calidad de los estudios se evaluó con la herramienta de Evaluación de Calidad de los Estudios de Precisión Diagnóstica-2 (QUADAS-2, por sus siglas en inglés).

Resultados. Tras las exclusiones, se identificaron cuatro nuevos estudios que cumplían los criterios de selección. Combinados con los cuatro estudios incluidos en el metaanálisis anterior, se incluyeron ocho estudios con un total de 6728 mujeres (13456 parametrios). La prevalencia media de afectación parametrial fue del 21,3%. La sensibilidad y la especificidad combinadas de la ETV para la detección de la afectación parametrial fueron del 63% (IC 95%, 31–86%) y del 98% (IC 95%, 96–99%), respectivamente. Si se consideran únicamente los cinco estudios que reportaron lateralidad, los valores correspondientes fueron 85% (IC 95%, 64–95%) y 98% (IC 95%, 92–99%) para el parametrio izquierdo y 84% (IC 95%, 61–94%) y 97% (IC 95%, 92–99%) para el parametrio derecho. La heterogeneidad fue elevada para el análisis en conjunto y para los análisis de subgrupos.

Conclusiones. El desempeño diagnóstico de la ETV para detectar la afectación parametrial en mujeres con sospecha de endometriosis pélvica profunda es mejor que el reportado previamente. Esto puede atribuirse al uso de una técnica de exploración estandarizada por ETV y a un mejor conocimiento de la anatomía ecográfica pélvica. Una evaluación parametrial precisa podría mejorar la planificación quirúrgica y el resultado de la paciente.

经阴道超声检测可疑盆腔深部子宫内膜异位症宫旁受累：更新的荟萃分析

摘要

目的 进行一项更新的荟萃分析，以评估经阴道超声（TVS）在检测可疑盆腔深部子宫内膜异位症女性侧方宫旁受累中的诊断性能。

方法 在Web of Science、PubMed和Scopus数据库中检索了2021年1月至2024年5月期间评估经阴道超声用于检测可疑盆腔深部子宫内膜异位症女性宫旁受累的研究，以腹腔镜检查（伴或不伴组织学检查）作为参考标准。所收集的信息与我们先前就该主题进行的荟萃分析数据相结合。计算了汇总的敏感性和特异性，包括总体分析以及考虑宫旁侧别的亚组分析。使用诊断准确性研究质量评估工具-2（QUADAS-2）评估研究质量。

结果 经筛选，确定了四项符合选择标准的新研究。结合我们先前荟萃分析中纳入的四项研究，共八项研究被纳入，总计包括6728名女性（对应13456个宫旁区域）。宫旁受累的平均患病率为21.3%。经阴道超声检测宫旁受累的汇总敏感性和特异性分别为63%（95%置信区间，31–86%）和98%（95%置信区间，96–99%）。若仅考虑报告了侧别信息的五项研究，对于左侧宫旁，相应的敏感性和特异性分别为85%（95%置信区间，64–95%）和98%（95%置信区间，92–99%）；对于右侧宫旁，则分别为84%（95%置信区间，61–94%）和97%（95%置信区间，92–99%）。总体分析与亚组分析均存在高度异质性。

结论 经阴道超声在检测可疑盆腔深部子宫内膜异位症女性宫旁受累方面的诊断性能优于先前的报告。这可能归因于标准化经阴道超声扫描技术的应用以及对盆腔超声解剖认识的提升。准确的宫旁评估有助于改善手术规划并优化患者结局。

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