

Pre-Operative Imaging:

Pascoal, E., et al. "Strengths and limitations of diagnostic tools for endometriosis and relevance in diagnostic test accuracy research." *Ultrasound in obstetrics & gynecology* 60.3 (2022): 309-327. <https://obgyn.onlinelibrary.wiley.com/doi/10.1002/uog.24892>

Key Points:

- "Practically and ethically speaking, preoperative imaging findings are essential for guiding surgical techniques."
- "Preoperative understanding of disease extent may prevent unpredictable, incomplete or abandoned surgical attempts and suboptimal resection of endometriosis."
- "Awareness of disease extent preoperatively through imaging allows surgeons to predict the complexity of the operation and consider the need for involvement of a multidisciplinary team, and to better estimate surgical risks."
- "It is imperative to utilize diagnostic tools that can diagnose endometriosis subtypes, location and disease extent accurately to guide appropriate treatment."
- "When moderate-to-severe endometriosis is found on imaging, operative laparoscopy may be delayed so that adequate surgical expertise can be sought and the patient can be prepared appropriately and consent to treatment."

Advanced TVS Ultrasound Mapping:

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Key Points:

- "Imaging techniques, including transvaginal ultrasound (TVS), transrectal ultrasound (TRS) and magnetic resonance imaging (MRI), can bridge the gap between clinical and surgical diagnosis by **providing a visual diagnosis that is non-invasive and can be achieved more quickly, safely and accessibly compared with surgery.**"
- "Endometriosis can **manifest in non-gynecological organs** including the gastrointestinal tract and, less commonly, the urinary tract, **diaphragm and thorax.**"
- "It is imperative to utilize diagnostic tools that can diagnose endometriosis subtypes, location and disease extent accurately to guide appropriate treatment."

- “Ultrasound and MRI were evaluated as complementary imaging techniques in a prospective observational study and were together found to identify bowel DE correctly in 90.5% of cases.”
- “Ultrasound (TVS) was able to detect retrocervical, ovarian and bladder endometriosis with similar sensitivity to diagnostic laparoscopy.”

MRI:

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Key Points:

- “If advanced ultrasound techniques are not available at a healthcare center, MRI may fill the void and act as a non-invasive diagnostic tool.”
- “MRI performs well in detecting sacral nerve root deep infiltrating endometriosis while no comparable data exist for ultrasound.”
- “MRI can visualize extrapelvic lesions that are not visible with ultrasound.”

Kido, Aki, et al. "MRI in the Diagnosis of Endometriosis and Related Diseases." *Korean journal of radiology* 23.4 (2022): 426. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8961012/>

Key Points:

- “Because of its high contrast resolution and objectivity, MRI can contribute to the early and accurate diagnosis of ovarian endometriotic cysts and deeply infiltrating endometriosis without the need for any invasive procedure or radiation exposure”
- “Moreover, MRI can assist gynecologists in evaluating the precise location of the endometriosis and severity of adhesions”

Laparoscopy/Surgery:

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Key Points

- “Gynecologists should ethically consider their level of surgical expertise and ensure optimal preoperative planning, including staging with non-invasive imaging, before performing operative

laparoscopy for endometriosis.”

- “Notably, diagnostic laparoscopy was unable to detect vaginal endometriosis, whereas it was detected on TVS with a sensitivity of 86% and specificity of 99% (compared against histology as reference standard).”

Imaging Protocols:

- **How to perform an ultrasound to diagnose endometriosis:**

Leonardi, Mathew, and George Condous. "How to perform an ultrasound to diagnose endometriosis." *Australasian journal of ultrasound in medicine* 21.2 (2018): 61-69. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8409846/>

- **MRI of intestinal endometriosis:**

Bazot, Marc, et al. "MRI of intestinal endometriosis." *Best Practice & Research Clinical Obstetrics & Gynaecology* 71 (2021): 51-63. <https://pubmed.ncbi.nlm.nih.gov/32653334/>

- “MRI is often performed in suspected complex cases of endometriosis or before surgery because it is considered to be highly accurate.”
- “Magnetic resonance imaging (MRI) is recommended as a second-line technique in the preoperative workup of DE, especially for gastrointestinal endometriosis.”
- “An optimal MRI protocol is required for a complete mapping of endometriotic lesions.”