

Table 1. *Diagnostic Modalities for Endometriosis.*

Diagnostic Modality	Description / Mechanism	Accuracy (Sensitivity/ Specificity)	Key Advantages	Limitations	Reference s
TVUS <i>(transvaginal ultrasound)</i>	First-line imaging for ovarian endometrioma s and DIE; detects lesions in ovaries, rectovaginal septum, bladder.	DIE sensitivity > 90%, specificity > 85% (expert hands).	Widely available, non-invasive, low cost, dynamic.	Operator-dependent; limited for small superficial lesions.	[29,31,100]
MRI <i>(magnetic resonance imaging)</i>	Multiplanar mapping; valuable for complex or pre-surgical cases.	DIE sensitivity > 90%, specificity ≈ 88%.	Excellent soft-tissue contrast, detects extrapelvic disease.	High cost; limited access; specialized interpretation.	[28-31]
Serum biomarkers <i>(CA-125, miRNAs)</i>	Reflect inflammatory/ ectopic activity.	CA-125 sens. 50–70%; miRNAs promising but heterogeneous.	Simple, minimally invasive; adjunct to imaging.	Non-diagnostic alone; no validated biomarker for routine use.	[32-35]
AI-assisted imaging	Algorithm- aided TVUS/MRI for lesion detection/ classification.	Early studies → high sensitivity (pilot data).	Reduces operator bias; speeds interpretation.	Still experimental; external validation needed.	[100-103]
Diagnostic laparoscopy <i>(gold standard)</i>	Direct visualization ± biopsy confirmation.	Specificity ≈ 100%.	Enables simultaneous diagnosis & treatment.	Invasive; anesthesia/surgical risk; cost.	[24,26,28,97]