

ER 14.01 Ultrasound features predictive of tubal involvement in patients with pelvic endometriosis: a new classification



Carlotta Zorzi¹, Giulia Vittori Antisari¹, Francesco Cracco¹, Mara Albanese¹, Anna Stepniewska¹, Paola De Mitri¹, Sonja Vujosevic¹, Marcello Ceccaroni¹

1. Gynecology and Obstetrics, IRRCS Sacro Cuore Don Calabria Negrar, Verona, Italy, Italy.

Objectives

Currently, the literature lacks direct sonographic criteria for diagnosing tubal endometriosis. Tubal involvement is primarily assessed using indirect ultrasound findings, such as hydrosalpinx, ovarian endometriomas, or peri-adnexal adhesions. This study aims to propose novel ultrasound diagnostic criteria for evaluating tubal involvement in endometriosis and introduce a classification system for affected fallopian tubes.

Methods

A retrospective analysis was conducted on 968 patients (aged 18–42 years) who underwent surgical treatment for symptomatic, treatment-resistant endometriosis between January 1 and December 31, 2024. Among them, 224 patients (23.1%) underwent unilateral or bilateral salpingectomy, with intraoperative findings confirming tubal damage due to direct endometriotic infiltration or adhesions. Preoperative transvaginal ultrasound (TVUS) reports and imaging, performed by trained operators, were reviewed and compared with intraoperative findings.

Results

TVUS identified tubal anomalies in 135 cases (60.3%), whereas 89 cases (39.7%) exhibited no detectable sonographic abnormalities of the fallopian tubes. Based on sonographic morphology, affected tubes were categorized into three distinct ultrasound phenotypes:

- GROUP 1 Solid tubal involvement (n= 55, 40.7%): Tubular, solid, isoechoic structures with Color Score 1-2.
- GROUP 2 Endometriotic content (n= 38, 28.1%): Elongated formations with ground-glass echogenic content and CS 1-2.
- GROUP 3 Hydrosalpinx (n= 67, 49.6%): Tubular formations with anechoic content, incomplete septa, and CS 1-2.

Tubal involvement was significantly associated ($p<0.0001$) with the presence of ovarian endometriomas in 75 cases (55.6%) and bowel endometriosis in 91 (67.4%).

Conclusions

TVUS is a valuable tool for detecting tubal alterations secondary to endometriosis. Recognizing the sonographic characteristics of affected tubes enhances the preoperative assessment, counseling for fertility planning, and differential diagnosis.

