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Value of Transvaginal Ultrasound in Diagnosing Deep Infiltrating Endometriosis of the Bowel

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Introduction

This study aimed to comprehensively evaluate the diagnostic performance, limitations, and potential pitfalls of systematic transvaginal ultrasound examination in detecting and characterizing deep endometriosis (DE) of the bowel. We sought to identify specific sonographic features that might lead to misdiagnosis and establish improved criteria for differential diagnosis.

Methods

All patients underwent detailed systematic transvaginal ultrasound evaluation using a standardized protocol focusing on the anterior and posterior compartments. Nine patients with ultrasound features suggestive of bowel DIE were included in this analysis. All patients subsequently underwent laparoscopic surgery. Ultrasound findings were compared with surgical observations and histopathological results to determine diagnostic accuracy and characterize imaging features associated with false-positive diagnoses.

Results

Of the 9 patients diagnosed with bowel DE by systematic ultrasound examination, histopathological confirmation was obtained in only 4 cases (44.4%). In 4 other cases (44.4%), the surgical and histopathological findings revealed adhesions between the bowel and posterior uterine surface. These adhesions demonstrated sonographic characteristics remarkably similar to DE, including hypoechoic irregular thickening and reduced sliding sign. The remaining case (11.2%) was unexpectedly diagnosed as a laterally spreading tumor (LST) of the rectum upon histopathological examination, which had presented sonographically as a hypoechoic, heterogeneous lesion with irregular margins mimicking DE.

Conclusion

Transvaginal ultrasound is valuable in diagnosing deep infiltrating endometriosis of the bowel, but distinguishing bowel DIE from uterine-bowel adhesions remains challenging. Combining clinical presentation and other imaging modalities can enhance diagnostic accuracy.

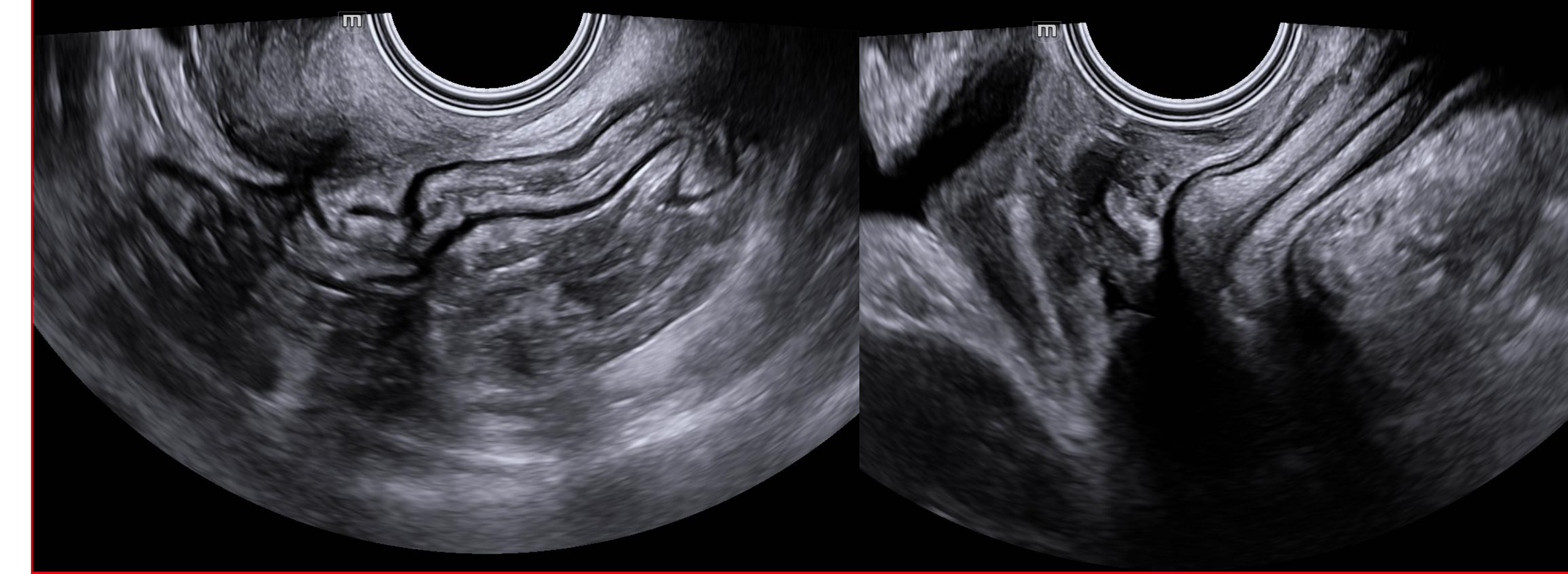


Figure 1. Normal anterior bowel wall on ultrasound: the muscularis layer appears hypoechoic, the mucosal layer is hyperechoic, and the serosal layer is hyperechoic.

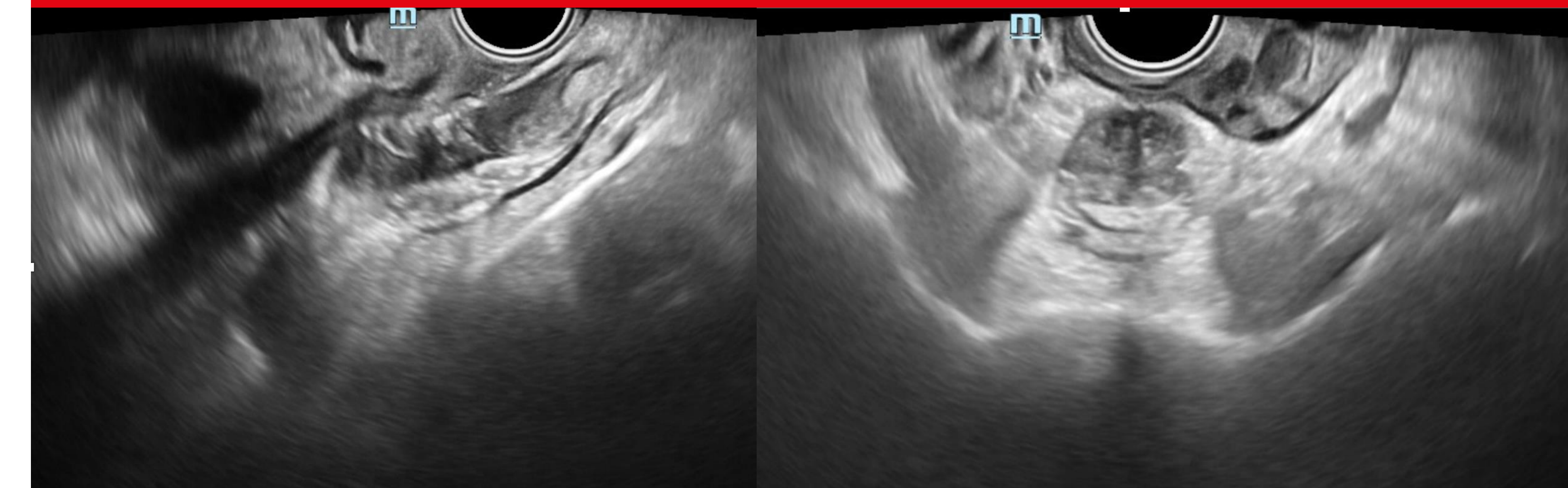


Figure 2. Deep infiltrating endometriosis of the bowel: a hypoechoic mass is seen in the anterior bowel wall, with the mucosal layer spared.

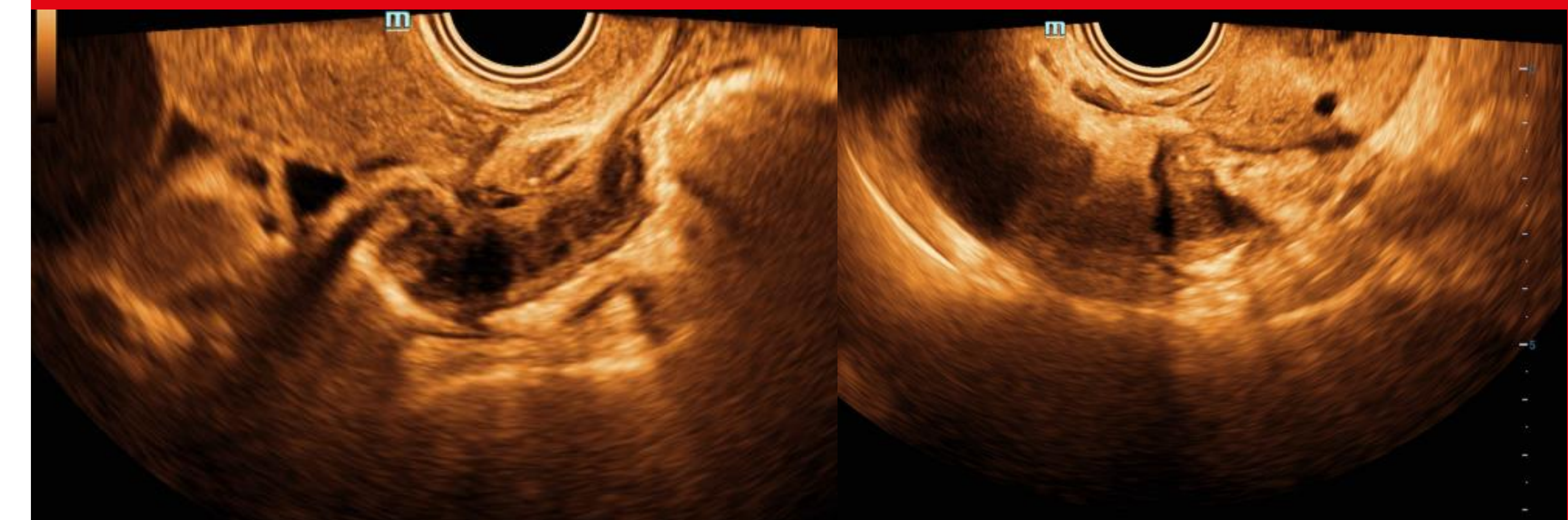


Figure 3. Ultrasound misdiagnosis of deep infiltrating endometriosis: imaging showed a lesion that did not involve the mucosa and had a relatively regular contour; however, surgical pathology revealed a rectal LST (laterally spreading tumor).