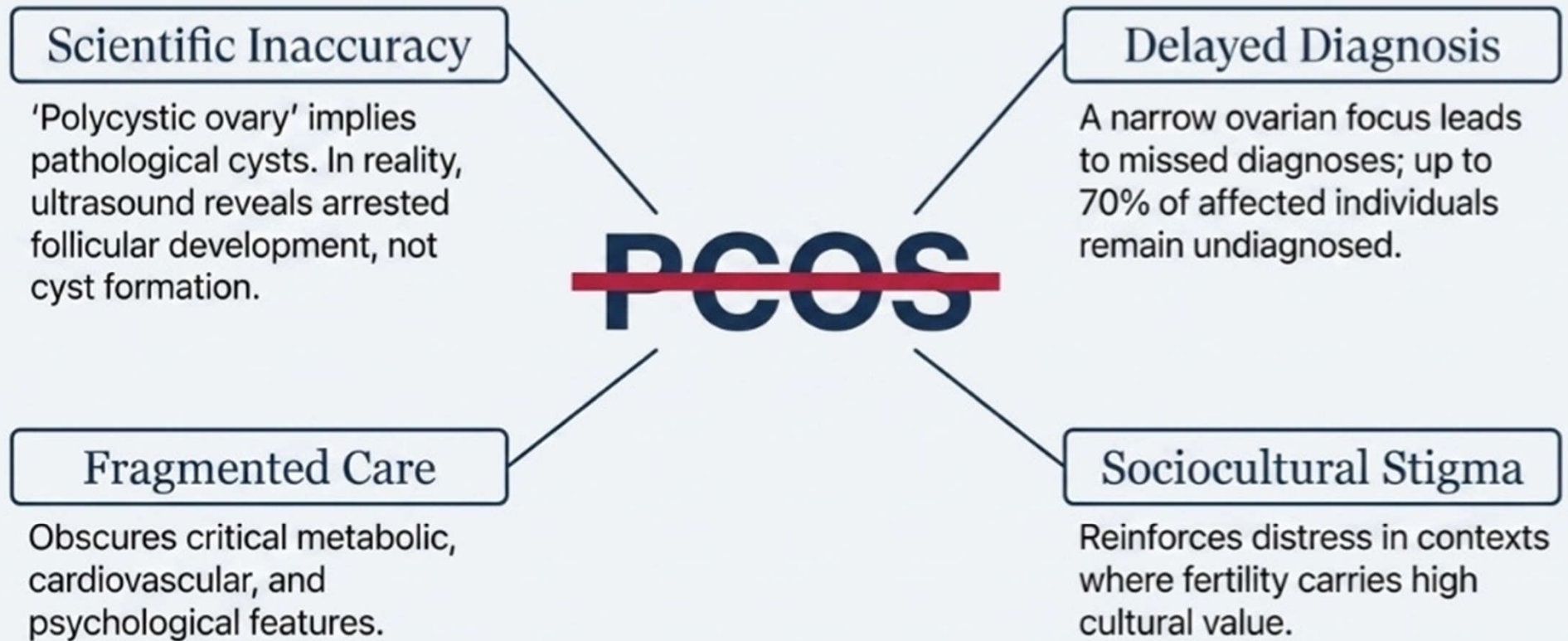


ULTRASOUND NEWS

9-2026

The Historical Misnomer of PCOS (1930s – 2026)



The 2026 Global Consensus: Introducing PMOS



By the Numbers:

14 Years of global collaboration.

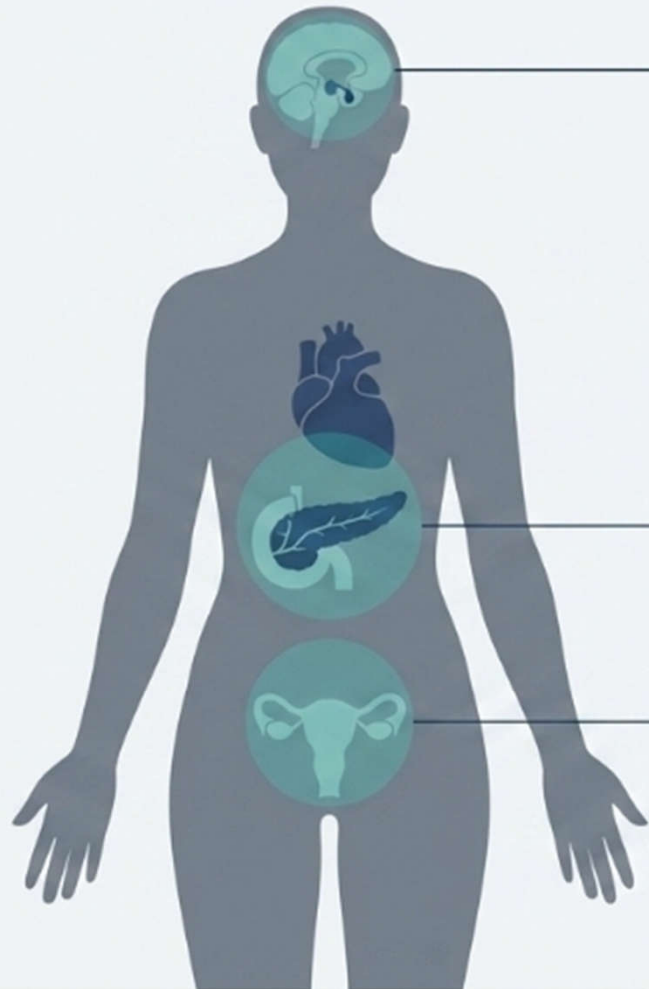
56 engaged professional and patient organizations.

14,360+ survey responses from patients and multidisciplinary health professionals.

The Result: PCOS is officially retired.

The condition is renamed Polyendocrine Metabolic Ovarian Syndrome (PMOS), published in The Lancet (May 2026).

Deconstructing PMOS: A Systemic Reality



P - Polyendocrine

Neuroendocrine abnormalities, increased GnRH pulsatility, and hyperandrogenism (elevated ovarian/adrenal androgens).

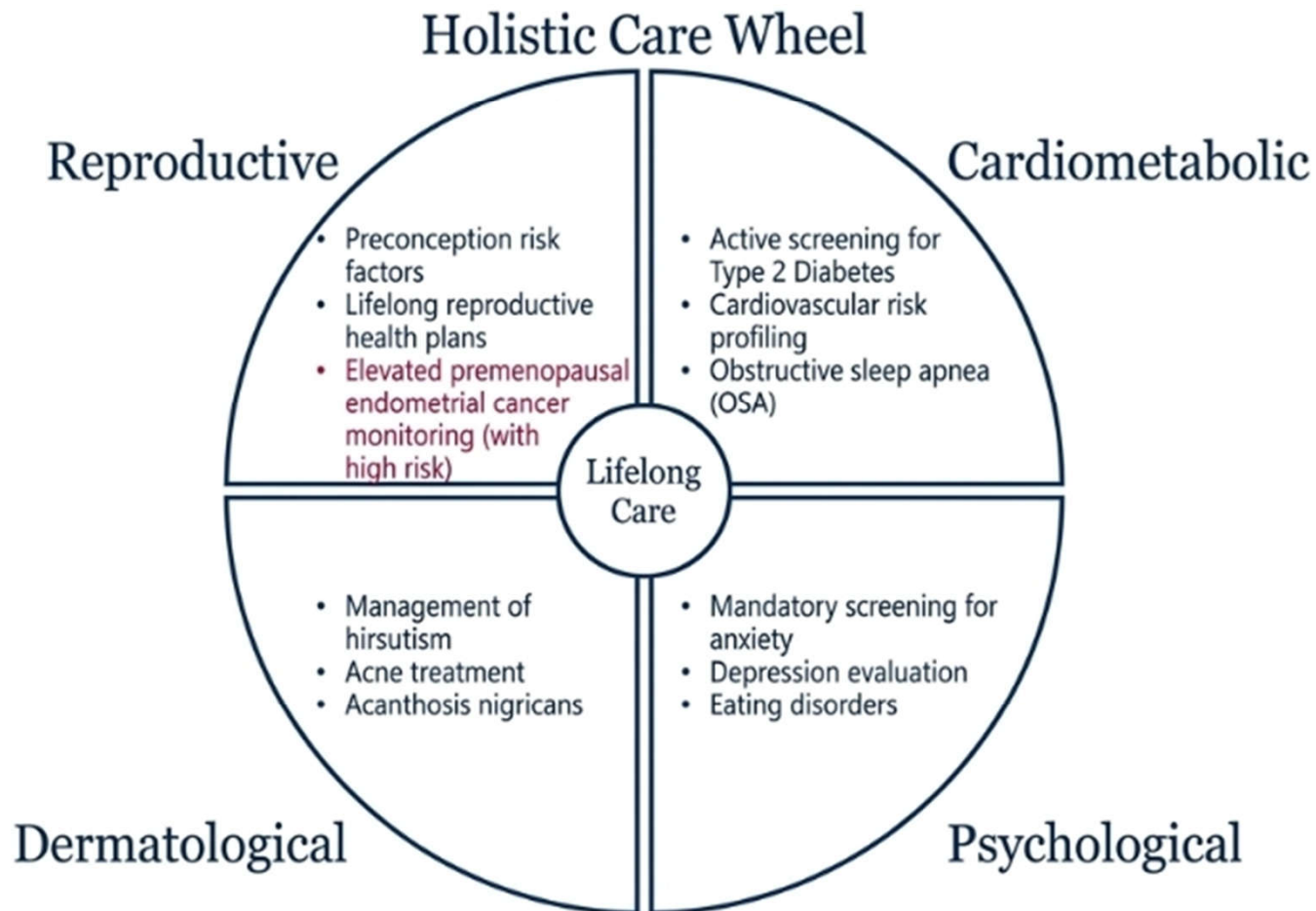
M - Metabolic

Insulin resistance (present in 85% of cases), central adiposity, dysglycemia, hypertension, and elevated cardiovascular disease risk.

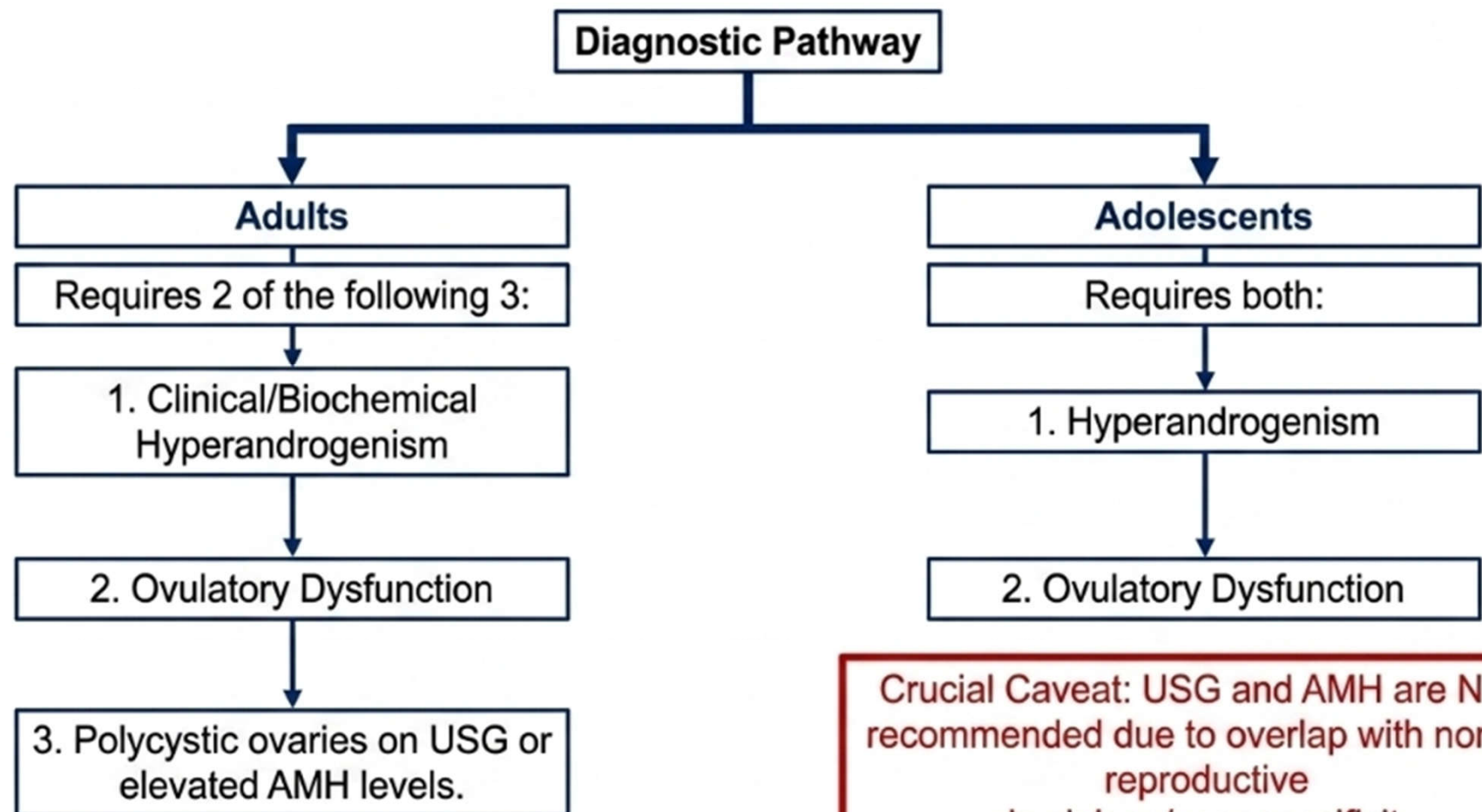
O - Ovarian

Ovulatory dysfunction, elevated AMH, and impaired follicular maturation.

Comprehensive Management of PMOS



Updated Diagnostic Criteria (2026 PMOS Guidelines)



Crucial Caveat: USG and AMH are NOT recommended due to overlap with normal reproductive physiology/poor specificity.

3 Trụ Cột Chẩn Đoán Tiêu Chuẩn Mới

Trụ 1: Cường Androgen

Biểu hiện trên lâm sàng (rậm lông, mụn) hoặc cận lâm sàng (nồng độ androgen trong máu cao).

Trụ 2: Rối Loạn Phóng Noãn

Chu kỳ kinh nguyệt thưa thớt, không đều hoặc vô kinh hoàn toàn.

Trụ 3: Hình Thái Bường Trứng / AMH

Hình ảnh buồng trứng có nhiều nang nhỏ (PCOM) trên siêu âm **HOẶC** chỉ số dự trữ buồng trứng AMH tăng cao đột biến.

Khẳng định chẩn đoán PMOS khi bệnh nhân có 2 trên 3 tiêu chuẩn này.



Chia sẻ



Số liệu



Viết gốc

Đăng tải trực tuyến: ngày 9 tháng 6 năm 2026

<https://doi.org/10.14366/usg.26117>

m LAD-NASH sử dụng siêu âm đa thông số để xác

nguy cơ MASH: so sánh trực tiếp với điểm FAST.

LAD-NASH so với FAST cho bệnh nhân MASH có nguy cơ cao

Seung-seob^{1*} , Jae Seung Lee^{2*} , Min Young Lee³ ,
Min Young Lee¹ 

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Phòng Nghiên cứu/Quỹ Hợp tác Đại học - Công nghiệp, Đại học
Yonsei, Seoul, Hàn Quốc

TÓM TẮT

Các thang điểm không xâm lấn đã được đề xuất để xác định mức độ nghiêm trọng của bệnh gan nhiễm mỡ không do rượu (NAFLD) ở những bệnh nhân có nguy cơ mắc bệnh gan nhiễm mỡ không do rượu liên quan đến rối loạn chuyển hóa (MASH) có thể hưởng lợi từ các liệu pháp dược lý. Thang điểm LAD-NASH (mô hình kết hợp dựa trên siêu âm (US) kết hợp hệ số suy giảm, độ dốc phân tán và độ cứng gan để xác định bệnh gan nhiễm mỡ không do rượu), một mô hình đa tham số dựa trên siêu âm (US) kết hợp hệ số suy giảm, độ dốc phân tán và độ cứng gan để xác định bệnh gan nhiễm mỡ không do rượu, đã được phát triển gần đây cho mục đích này. Nghiên cứu này nhằm mục đích xác thực thang điểm LAD-NASH để xác định mức độ nguy cơ MASH ở những bệnh nhân mắc bệnh gan nhiễm mỡ không do rượu liên quan đến rối loạn chuyển hóa (MASLD) đã được xác định bằng sinh thiết và so sánh hiệu quả chẩn đoán của nó với thang điểm FibroScan-aspartate aminotransferase (FAST). Nghiên cứu này tuyển chọn các bệnh nhân liên tiếp được chẩn đoán bằng siêu âm đa thông số và sinh thiết gan trong cùng một bệnh viện từ ngày từ tháng 2 năm 2023 đến tháng 4 năm 2024. MASH có nguy cơ được định nghĩa là MASH được xác nhận bằng sinh thiết với điểm hoạt động MASLD ≥ 4 và giai đoạn xơ hóa ≥ 2 . Hiệu quả chẩn đoán của điểm LAD-NASH và FAST được so sánh bằng cách sử dụng diện tích dưới đường cong đặc trưng cho hoạt động của người nhận (AUROC).

Tổng cộng có 70 bệnh nhân được chẩn đoán MASLD bằng sinh thiết được đưa vào nghiên cứu (tuổi trung bình 44 năm; 34 nam; chỉ số khối cơ thể trung bình $28,7 \text{ kg/m}^2$; nguy cơ MASH 27,1%). Điểm LAD-NASH và FAST cho thấy hiệu quả chẩn đoán tương đương trong việc xác định nguy cơ MASH (AUROC, 0,740; khoảng tin cậy 95% [CI], 0,621 đến 0,838 so với 0,739; 95% CI, 0,621 đến 0,837; $P=0,995$). Sử dụng ngưỡng loại trừ $\leq 0,264$, điểm LAD-NASH cho thấy độ nhạy 100% và giá trị dự đoán âm tính 100% đối với nguy cơ MASH.

Điểm LAD-NASH và FAST cho thấy hiệu quả chẩn đoán tương đương nhau trong việc xác định nguy cơ mắc MASH. Vì chỉ dựa trên siêu âm đa thông số, điểm LAD-NASH có thể là một công cụ loại trừ không xâm lấn hữu ích đối với nguy cơ mắc MASH.

Từ khóa :Siêu âm đàn hồi,Bệnh gan nhiễm mỡ không do rượu ,Viêm gan nhiễm mỡ không do rượu

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An international journal of clinical imaging

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Ultrasound findings in rare pulmonary and pleural disorders: a case-based review

Kathleen Möller, Christian Görg, Andrius Cekuolis, Natalia Buda, Wolfgang Blank, André Ignee, Christoph F Dietrich

Abstract

Transthoracic ultrasound (TUS) is an established imaging modality for the diagnosis and bedside monitoring of pleural effusions, pneumothorax, inflammatory pleural disease, thoracic wall lesions, peripheral pulmonary consolidations, and interstitial lung diseases. Contrast-enhanced ultrasound (CEUS) further improves lesion characterization by differentiating viable inflammatory tissue from necrosis and abscess formation. While the sonographic appearance of common thoracic diseases is well described, ultrasound findings in rare pulmonary and pleural conditions remain insufficiently documented. This review presents the characteristic transthoracic ultrasound (TUS) findings in several uncommon thoracic disorders, including abscessing fire-eater's pneumonia after paraffin aspiration, tracheal hemangioma, thoracic wall hemangioma, biliopleural fistula following percutaneous transhepatic cholangiodrainage (PTCD), bronchial rupture with hemopneumothorax, spontaneous pneumomediastinum, esophagopleural fistula, diaphragmatic cyst, and post-traumatic diaphragmatic paralysis. The sonographic findings are correlated with the clinical presentation and complementary imaging modalities.

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Ultrasound findings in rare pulmonary and pleural disorders: a case-based review

**Kathleen Möller¹, Christian Görg², Andrius Cekuolis^{3,4}, Natalia Buda⁵, Wolfgang Blank⁶,
Andre Ignee^{7,8}, Christoph F Dietrich^{9,10}**

Abstract

Transthoracic ultrasound (TUS) is an established imaging modality for the diagnosis and bedside monitoring of pleural effusions, pneumothorax, inflammatory pleural disease, thoracic wall lesions, peripheral pulmonary consolidations, and interstitial lung diseases. Contrast-enhanced ultrasound (CEUS) further improves lesion characterization by differentiating viable inflammatory tissue from necrosis and abscess formation. While the sonographic appearance of common thoracic diseases is well described, ultrasound findings in rare pulmonary and pleural conditions remain insufficiently documented. This review presents the characteristic transthoracic ultrasound (TUS) findings in several uncommon thoracic disorders, including abscessing fire-eater's pneumonia after paraffin aspiration, tracheal hemangioma, thoracic wall hemangioma, biliopleural fistula following percutaneous transhepatic cholangiodrainage (PTCD), bronchial rupture with hemopneumothorax, spontaneous pneumomediastinum, esophagopleural fistula, diaphragmatic cyst, and post-traumatic diaphragmatic paralysis. The sonographic findings are correlated with the clinical presentation and complementary imaging modalities.

Keywords: transthoracic ultrasound; contrast-enhanced ultrasound; fire-eater's pneumonia; tracheal hemangioma; thoracic wall hemangioma; biliopleural fistula; bronchial rupture

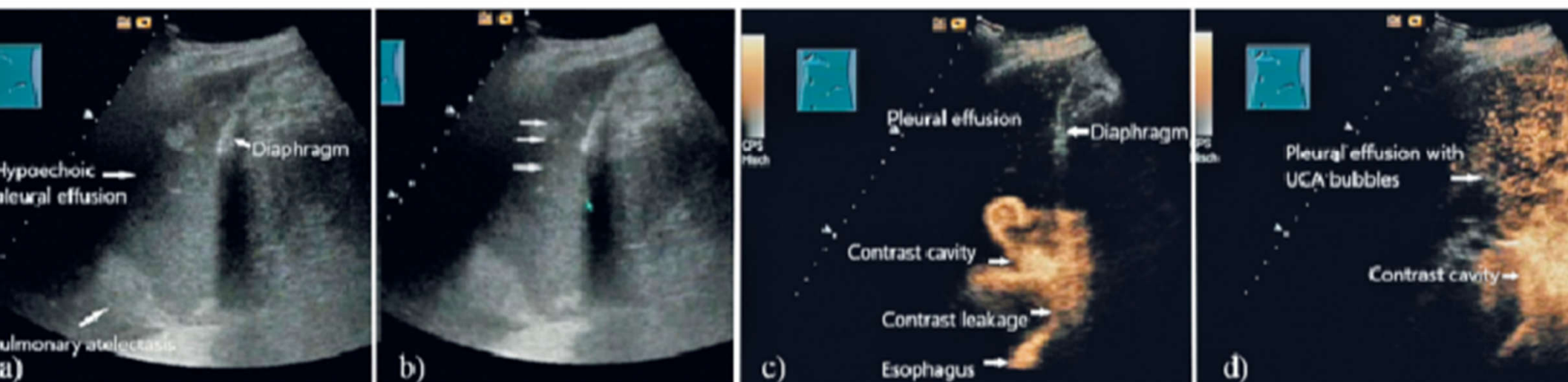


Fig 8. A patient in the intensive care unit with a history of severe reflux esophagitis, chest pain. Bedside ultrasound revealed a pleural effusion containing hypoechoic fluid (a). Ascending air bubbles were observed supradiaphragmatic (arrows) (b). Oral administration of the ultrasound contrast agent SonoVue as icCEUS. Exit of the UCA supradiaphragmatic, local accumulation paraesophageal supradiaphragmatic in a contrast "cavity" (c). The UCA bubbles disperse in the pleural effusion (d). The leakage of UCA from the esophagus into the pleural effusion was confirmed. Further diagnostic workup was performed with CT and gastroscopy. A fully covered esophageal stent was implanted. The pleural effusion was drained percutaneously.

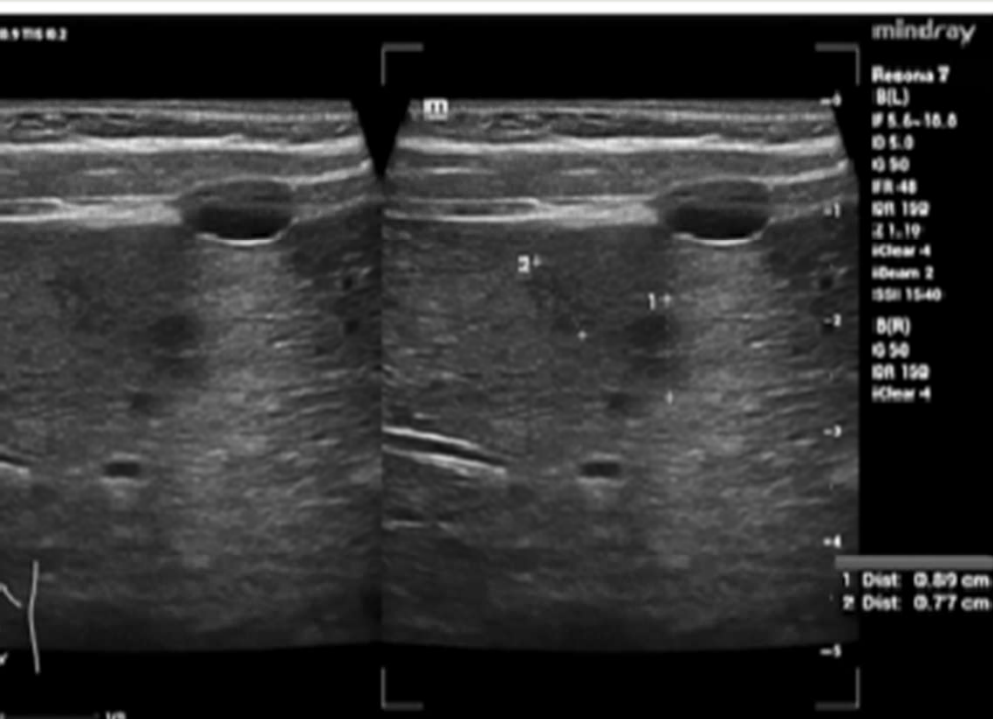


Fig 9. Diaphragmatic cyst: incidentaloma while scanning for abdominal trauma (minor fresh liver hematoma).

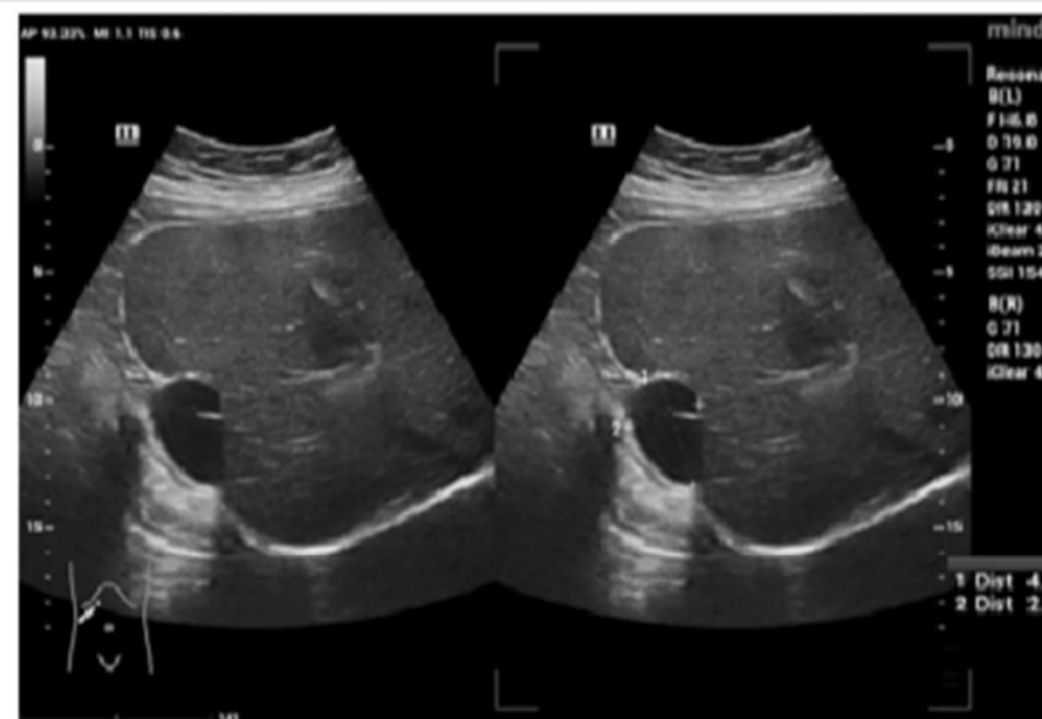


Fig 10. Diaphragmatic cyst: incidentaloma scanning for abdominal pain.

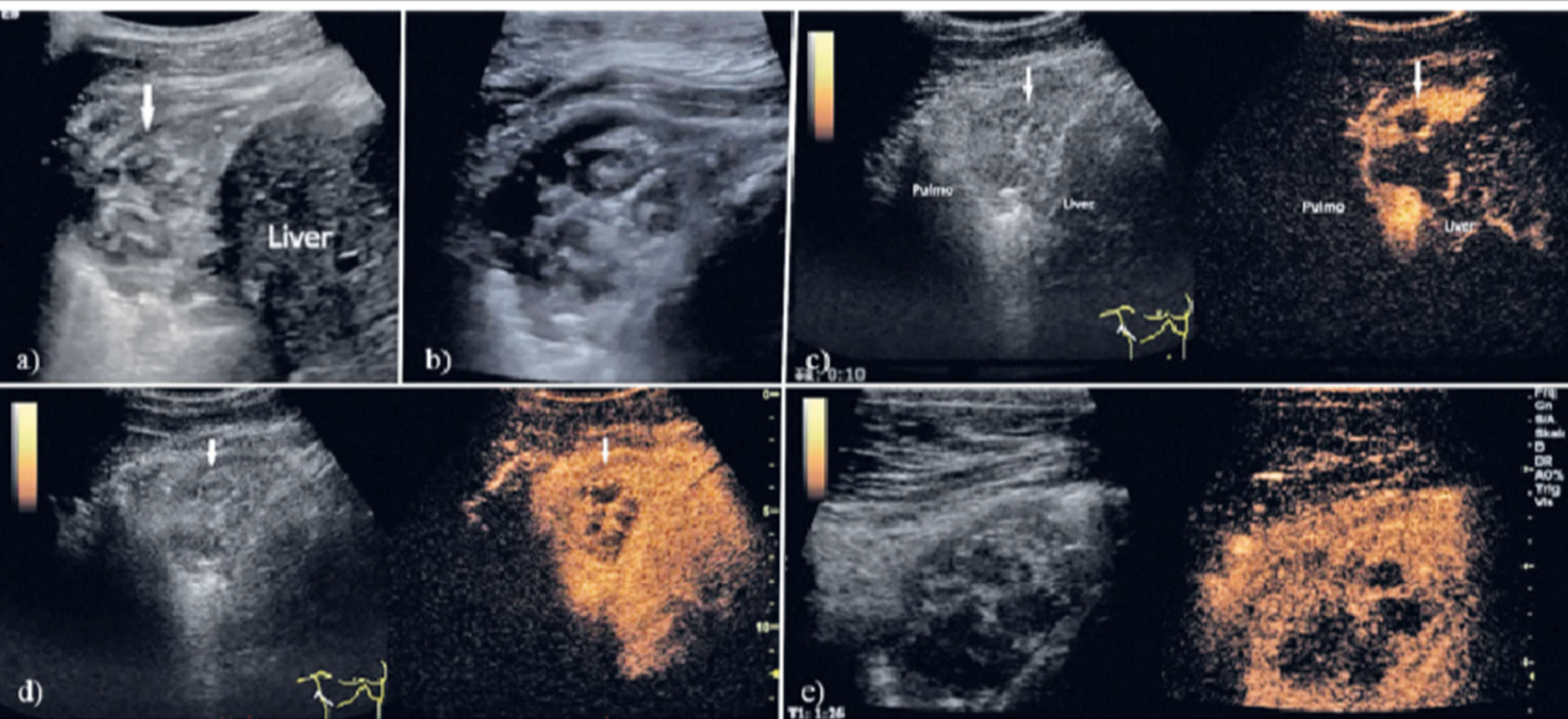
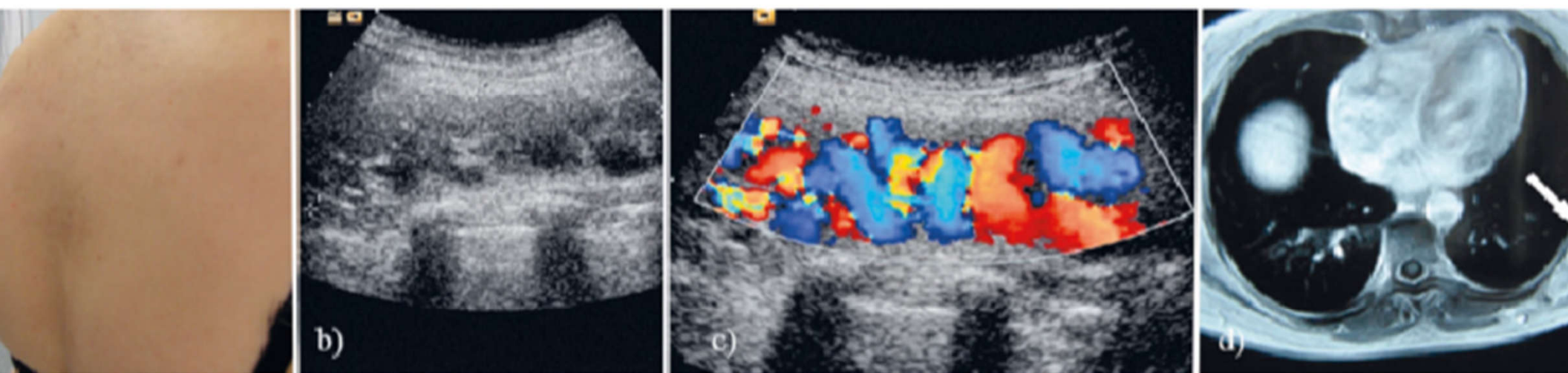


Fig 1. Multiple lung abscesses due to paraffin inhalation. A 33-year-old male professional fire-eater accidentally inhaled paraffin. Multiple lung abscesses developed. On US, these are visible in the non-ventilated basal parts of the lung (right lung in this case)



4. Hemangioma of the thoracic wall, a 48-year-old woman. A soft mass below the left shoulder blade (a). Compressible, inhomogeneous mass in the thoracic wall (b). In CDI multiple vessels, mostly veins. Suspected diagnosis: hemangioma (c). The preoperative view with the diagnosis hemangioma (d). The final histological diagnosis was without signs of malignancy. R: Rib.

Clinical application of O-RADS combined with CEUS and HE4 in the diagnosis of adnexal masses

Qian Fu, Ying Yuan, Zhaohui Zhou, Yi Huang, Yan Lin, Duanyuan Ouyang, Wenjuan Shi

Abstract

Aim: This study aimed to evaluate the diagnostic value of combining Ovarian-Adnexal Reporting and Data System (O-RADS), contrast-enhanced ultrasound (CEUS) scoring, and serum human epididymis protein 4 (HE4) in differentiating benign and malignant adnexal masses.

Material and methods: A retrospective analysis was performed on 41 surgically resected adnexal masses confirmed by pathology between May 2022 and July 2025. All patients underwent routine ultrasound, CEUS, and preoperative serum HE4 testing. Adnexal masses were classified using O-RADS and assessed with three CEUS qualitative scores (initial enhancement time, enhancement intensity, and washout pattern) alongside HE4 levels.

Results: O-RADS alone showed a sensitivity of 69.2% for borderline and malignant adnexal masses (AUC 0.794). Adding CEUS increased sensitivity to 88.5% (AUC 0.906), and including HE4 further raised it to 96.2% (AUC 0.947). CEUS parameters differed significantly between benign and malignant adnexal masses ($p < 0.001$). The combined model markedly improved classification of intermediate-risk adnexal masses and reduced misclassification. Interobserver agreement was excellent (Kappa > 0.85).

Conclusion: The integration of O-RADS with CEUS scoring and HE4 testing significantly improves the diagnostic accuracy for adnexal masses. This improvement is particularly notable in intermediate-risk adnexal masses. Our findings support the clinical utility of this integrated approach for risk stratification and decision-making.

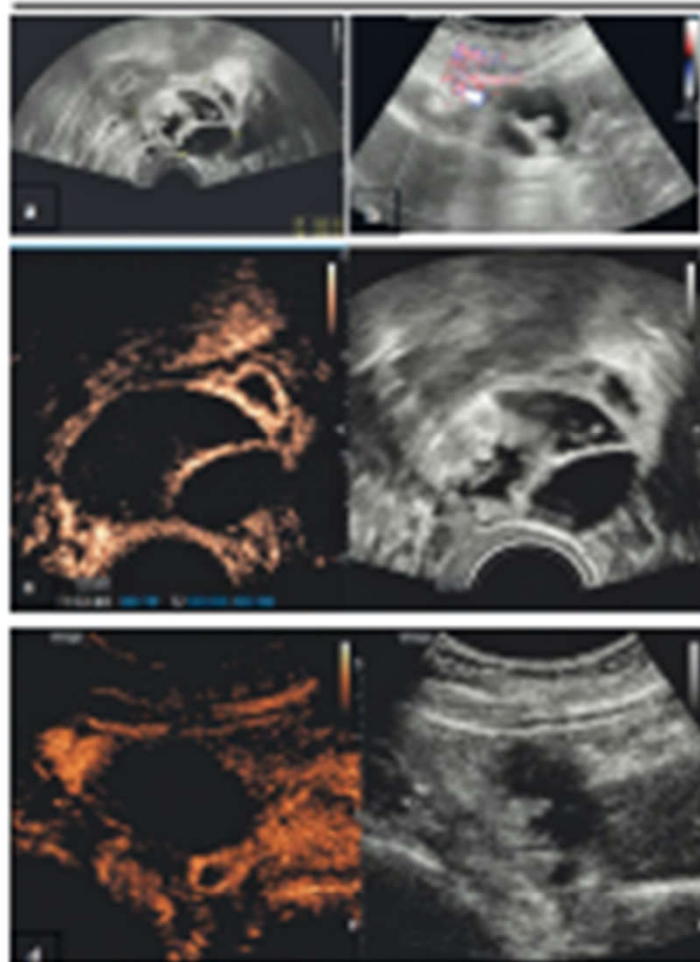


Fig 2. Benign mature teratoma in a 43-year-old premenopausal patient: downgrading of O-RADS category by CEUS. a, b: Conventional grayscale (a) and color Doppler (b) ultrasound images revealed a multilocular cystic mass with solid-appearing components in the right ovary. The initial O-RADS category was 4; c, d: CEUS performed via transvaginal (c) and transabdominal (d) approaches demonstrated a complete lack of enhancement in the solid-appearing areas. This pattern resulted in a CEUS score of 0, prompting a downgrade to O-RADS category 3. Postoperative histopathology confirmed a benign mature teratoma.

Measurement A of the CAIUS & POC 3 adnexal masses were taken

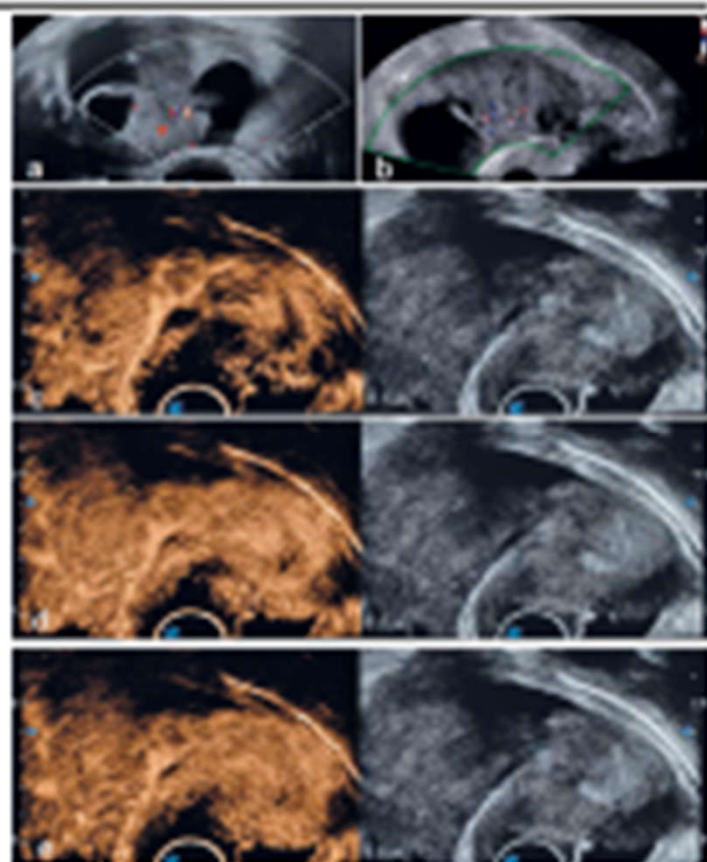


Fig 3. High-grade serous adenocarcinoma in a 67-year-old postmenopausal patient: Upgrading of O-RADS category by contrast-enhanced ultrasound. a, b: Conventional grayscale (a) and color Doppler (b) ultrasound images showed a large multilocular cystic-solid mass in the right adnexal region, initially classified as O-RADS 4; c-e: Transvaginal contrast-enhanced ultrasound (CEUS) sequences demonstrated characteristic malignant features: early enhancement (c), hypoenhancement (d), and early washout (e). This pattern resulted in a CEUS score of 6, prompting an upgrade to O-RADS category 5. The final pathological diagnosis was high-grade serous adenocarcinoma (Stage IIIA2).

hancement. Among malignant adnexal masses, 17 were reclassified to category 5 while one remained in category 4. This adjustment reduced the sensitivity for malignant

Sigmoid wall thickness correlates with fecal calprotectin during irritable bowel syndrome exacerbation

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¹Department of Internal Medicine, Faculty of Medicine, Al-Balqa Applied University, Salt, Jordan, ²National Centre for Ultrasound in Gastroenterology, Haukeland University Hospital, Bergen, Norway, ³Institute of Clinical Medicine, University of Bergen, Bergen, Norway

Abstract

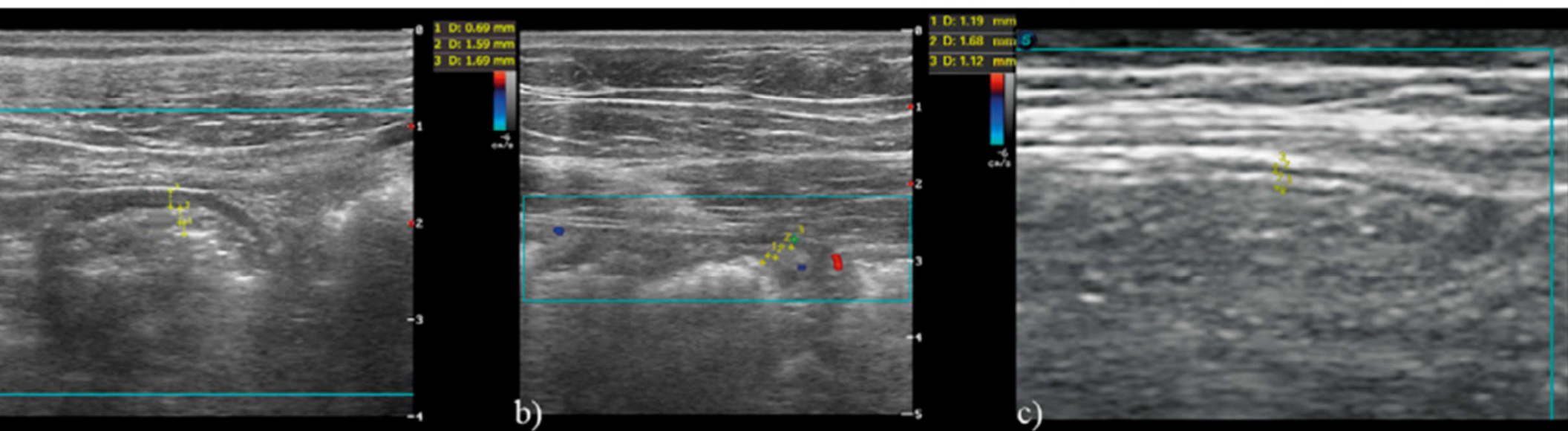
Aim: Patients with diarrhea-predominant irritable bowel syndrome (IBS-D) who present with symptom exacerbation (defined by a high IBS-Symptom Severity Scale (IBS-SSS)) may have increased fecal calprotectin (FC). Intestinal ultrasound (IUS) is used to measure bowel wall thickness (BWT). The aim of our study was to measure BWT in IBS-D patients, ulcerative colitis (UC) and healthy controls (HC), and compare BWT, IBS-SSS score, and FC level. **Material and method:** Patients with IBS-D and symptom exacerbation ($n=100$), active UC ($n=25$), and HC ($n=30$) were included. FC was measured in all groups. IBS-D patients with an IBS-SSS score >75 and FC level >50 $\mu\text{g/g}$ underwent IUS and colonoscopy. **Results:** Patients with IBS-D had a (mean $\pm$ SEM) IBS-SSS score of 268 ± 11 , FC level of 260 ± 46 $\mu\text{g/g}$, and a normal colonoscopy. IUS showed a significant difference ($p<0.0001$) between sigmoid BWT for IBS-D (3.16 ± 0.09 mm) and HC (1.6 ± 0.12 mm). Color Doppler signals were also absent. A significant correlation between sigmoid BWT and FC level ($r=0.48$, $p=0.0012$) was found in patients with IBS-D. **Conclusion:** Compared to HC, sigmoid BWT was significantly increased in IBS-D patients with symptom exacerbation. Sigmoid BWT correlates significantly with FC levels during IBS-D symptom exacerbation.

Keywords: Bowel wall thickness; Color Doppler; Intestinal ultrasound; Irritable Bowel Syndrome Symptom Severity Scale; Fecal calprotectin; Ulcerative colitis

Introduction

ation and is associated with changes in stool frequency

Conclusion Patients with IBS-D and symptom exacerbation presenting with high IBS-SSS score and slightly increased FC level may present with BWT >3 mm in the sigmoid colon on IUS. Compared to healthy controls, BWT of the sigmoid colon is significantly increased in IBS-D patients. The use of IUS with color Doppler, may be beneficial in clinical practice to help in differentiating between exacerbating symptoms of conditions such as those occurring in IBS-D and UC patients. This study is the first to find a significant association between the FC level and BWT using IUS in patients with IBS-D.



Ultrasonography with color Doppler signal of the bowel wall thickness: a). a patient with diarrhea-predominant irritable bowel syndrome during symptom exacerbation; b) a patient with ulcerative colitis; c) a healthy control. 1: thickness of mucosa (mm); 2: thickness of submucosa layer (mm); 3: thickness of proper muscle layer (mm).

Exploration of a Multimodal Machine Learning Model Integrating Ultrasound and Clinical Indicators for the Diagnosis of Diabetic Peripheral Neuropathy

Bo-yu She, MD , Meng-lu Song, MD, Wen-bin Chen, MD, Kun-bin Wu, MD, Zhen-han Lai, MD 

Received December 11, 2025, from the Department of Ultrasound, Zhangzhou Affiliated Hospital of Fujian Medical University, Zhangzhou, China (B.-Y.S., M.-L.S., W.-B.C., K.-B.W., Z.-H.L.). Manuscript accepted for publication March 10, 2026.

This study received approval from the Ethics Committee of Zhangzhou Hospital Affiliated to Fujian Medical University (2022KY299). The authors declare no conflicts of interest. The authors extend their sincere gratitude to all individuals who participated in this study. We would also like to thank Zhangzhou Hospital Affiliated to Fujian Medical University for their invaluable assistance in data collection. Furthermore, we appreciate the support and constructive feedback from all colleagues, which significantly enhanced the quality of this research. This study was supported by Fujian Provincial Natural Science Foundation (Grant No. 2022J011477) and Fujian Provincial Training Program for Young and Middle-aged Backbone Talents in Health (Grant No. 2020GGA074). [Correction added on 11 April 2026, after first online publication: The preceding sentence has been added in this version.]

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E-mail: zhlai@fjmu.edu.cn

Abbreviations

2hC-P, 2-hour postprandial C-peptide; AIC, Akaike information criterion; AUC, area under the curve; BMI, body mass index; CIC, clinical impact curve; CPN, common peroneal nerve; CSA, cross-sectional area; DCA, decision curve analysis; DPN, diabetic peripheral neuropathy; HbA1c, glycated hemoglobin; IIFUS, high-frequency ultrasound; IQR, interquartile range; LR, logistic regression; MRI, magnetic resonance imaging; NEE, neuroelectrophysiological examination; RF, random forest; ROC, receiver operating

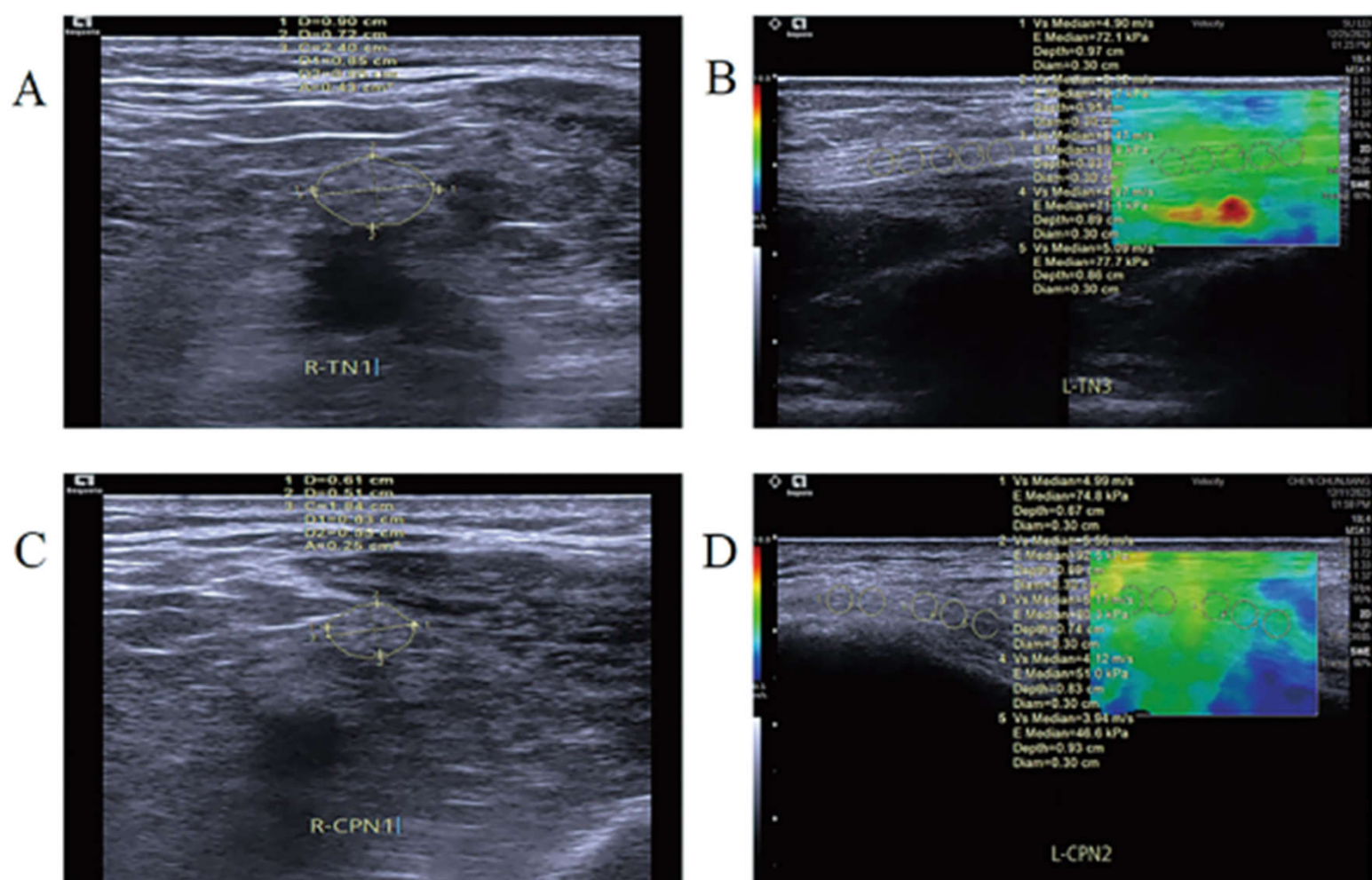
Objectives—Based on ultrasound technology and clinical indicators, this study intends to develop multiple risk prediction models for diabetic peripheral neuropathy (DPN), conduct comparative analyses of these models, and further evaluate and validate the diagnostic efficacy of the optimal model for DPN as well as its potential in clinical application.

Methods—The study included 235 patients grouped according to criteria for diagnosis of DPN. Ultrasound and clinical data were collected concurrently. The dataset was randomly partitioned into training and testing sets at a 7:3 ratio. Four machine learning models were developed: logistic regression (LR), extreme gradient boosting (XGBoost), random forest (RF), and support vector machine (SVM). These models were evaluated using a 10-fold cross-validation, comparing accuracy and areas under the curve (AUC) to determine the most optimal model. Based on SHAP (Shapley additive explanation) value visualization, decision curve analysis (DCA) and clinical impact curve (CIC) were employed to assess clinical utility.

Results—Comparisons of different models indicate that the RF model performed best overall across all models, reaching an AUC of 0.852 in the test set while also producing the highest recall rates and F1 scores. SHAP analysis revealed key risk factors identified in the RF model, in order of importance: body mass index (BMI), 2-hour C-peptide (2hC-P), diabetes duration, triglycerides (TG), CSA-CPN1, and age. In addition, DCA and CIC demonstrate the model's clinical utility.

Conclusions—The RF model demonstrated optimal performance for DPN prediction and shows significant potential for clinical application in DPN risk assessment.

Figure 2. Ultrasonic parameters of common tibial and peroneal nerves. **A**, Two-dimensional ultrasound measurement of the tibial nerve; **B**, Elastography measurement of the tibial nerve; **C**, Two-dimensional ultrasound measurement of the common peroneal nerve; **D**, Elastography measurement of the common peroneal nerve.



AIUM Practice Parameter for the Performance of Peripheral Arterial Ultrasound Using Color and Spectral Doppler, 2025 Revision

The American Institute of Ultrasound in Medicine (AIUM) is a multidisciplinary association dedicated to advancing the safe and effective use of ultrasound in medicine through professional and public education, research, development of clinical practice parameters, and accreditation of practices performing ultrasound examinations.

The AIUM Practice Parameter for the Performance of Peripheral Arterial Ultrasound Using Color and Spectral Doppler was revised by the AIUM in collaboration with other organizations whose members use ultrasound for performing this examination(s) (see “Acknowledgments”). Recommendations for personnel requirements, the request for the examination, documentation, quality assurance, and safety may vary among the organizations and may be addressed by each separately.

This practice parameter is intended to provide the medical ultrasound community with recommendations for the performance and recording of high-quality ultrasound examinations. The parameter reflects what the AIUM considers the appropriate criteria for this type of ultrasound examination but is not intended to establish a legal standard of care. Examinations performed in this specialty area are expected to follow the Parameter with the recognition that deviations may occur depending on the clinical situation.

This practice parameter is intended to assist practitioners performing noninvasive evaluation of the peripheral arteries using color and Doppler waveform analysis ultrasound. The sonographic examination of patients with peripheral vascular disease will, in general, complement the use of other physiologic tests, such as pressure measurements, plethysmographic recordings, and continuous wave Doppler. In selected cases a tailored examination is used to answer a specific diagnostic question. Although it is not possible to detect every abnormality, adherence to the following practice parameter will maximize the probability of detecting most of the abnormalities that occur in the extremity arteries.

Ultrasound for Predicting Endometrial Neoplasia in Premenopausal Abnormal Uterine Bleeding

Grubman, MD, MAS, Delaina Bling, MS, Haania Kakwan, MD, Shubhangi Mehra, MD, MS, Alicia Kiszka, MD, Diego H. Castrillon, MD, PhD, Elysia Moschos, MD

2026, from the Department of Obstetrics and Gynecology, UT Southwestern Medical Center, Dallas, Texas, USA (J.G., D.B., A.G., S.M.); Parkland Health, Dallas, Texas, USA (K., D.H.C., E.M.); University of Texas Medical School, Dallas, Texas, USA (S.M.); Department of Pathology, UT Southwestern Medical Center, Dallas, Texas, USA (J.G., D.B., A.G., S.M.); Department of Obstetrics and Gynecology, Health Houston McGovern Medical Center, Houston, Texas, USA (S.M.); and Department of Obstetrics and Gynecology, Baylor Scott and White Health, Temple, Texas, USA (H.K.). Manuscript accepted July 27, 2026.

We acknowledge the Parkland Health Administration, especially Dr. Christopher Clark, for their support in the implementation and data provision. We received funding from the National Institutes of Health Program for Scholars in Obstetrics and Gynecology, UT Southwestern, whose support was invaluable. None of the authors has any financial interest.

Correspondence to Jessica Grubman, MD, Department of Obstetrics and Gynecology, UT Southwestern Medical Center, Dallas, Texas, USA (jgrubman@utsouthwestern.edu).

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College of Obstetrics and Gynecology, UT Southwestern Medical Center, Dallas, Texas, USA; DPE, disordered proliferative endometrium; EAH/EIN, endometrial atypia/hyperplasia; endometrioid intraepithelial neoplasia; EC, endometrial cancer; EMB, endometrial biopsy; EMC, endometrial cancer; EMR, endometrial medical record; EMT, endometrial thickness; IETA, International Endometrial Tumor Analysis; IRB, Institutional Review Board; NAH, non-atypical hyperplasia.

Objectives—Although ultrasound is the first line imaging modality for abnormal uterine bleeding (AUB), there is a lack of consensus on its predictiveness for premenopausal endometrial pathology. This study aims to determine the predictiveness of pelvic ultrasound for endometrial neoplasia and cancer precursor lesions in premenopausal patients accounting for type of AUB.

Methods—This is a cross-sectional study of premenopausal individuals at a safety-net hospital from 2013 to 2021 with AUB who underwent pelvic ultrasound followed by endometrial sampling within 24 hours. AUB was classified by International Federation of Gynecology and Obstetrics PALM-COEIN terminology. Endometrial atypical hyperplasia/endometrioid intraepithelial neoplasia and carcinoma comprised neoplasia and disordered proliferative endometrium and hyperplasia without atypia constituted endometrial cancer precursor lesions. Chi-square, sensitivity, specificity, and positive and negative predictive values compared ultrasound and pathology findings. Odds of pathology type were obtained with logistic regression.

Results—A total of 3791 patients were included; 23.6% had anovulatory-type AUB (AUB-O) alone, 30.5% AUB-O with another etiology, and 45.9% no AUB-O. Ultrasound had significant positive and negative predictive value for abnormal histopathology. Several findings, including endometrial thickness (EMT), correlated to histopathology regardless of AUB type. No endometrial hyperplasia or cancer was found with EMT <4 mm. With multiple sonographic abnormalities, the probability of neoplasia or preneoplasia neared 1. Without abnormalities, the negative predictive value of ultrasound approached 1. Correlation of abnormal ultrasound findings to premalignant and malignant pathology was strongest with AUB-O alone.

Conclusions—Pelvic ultrasound is highly predictive of endometrial histopathology in the setting of premenopausal AUB, especially with AUB-O. Ultrasound should be used to help guide patient counseling and management in premenopausal individuals with AUB.

Key Words—endometrial cancer; endometrial hyperplasia; endometrial precancer; endometrioid intraepithelial neoplasia; ovulatory dysfunction; ultrasound

In conclusion, our study establishes ultrasound as a reliable tool for the assessment of premenopausal endometrial pre neoplasia and neoplasia, which should be used to help guide patient counseling and clinical management. We have previously described that ultrasound is the most common initial assessment modality for patients with AUB prior to endometrial malignancy diagnosis, but that endometrial sampling is often delayed despite ultrasound completion, and under-recognition of AUB related to delayed role in endometrial malignancy delayed diagnosis. Our findings in this study cement the importance of prompt endometrial sampling in clinically high-risk individuals, especially in those with abnormal endometrial findings on ultrasound. In those without abnormal ultrasound findings, decision making of deferred sampling in those without ultrasound risk factors for endometrial malignancy and a normal-appearing endometrium with EMT <4 mm

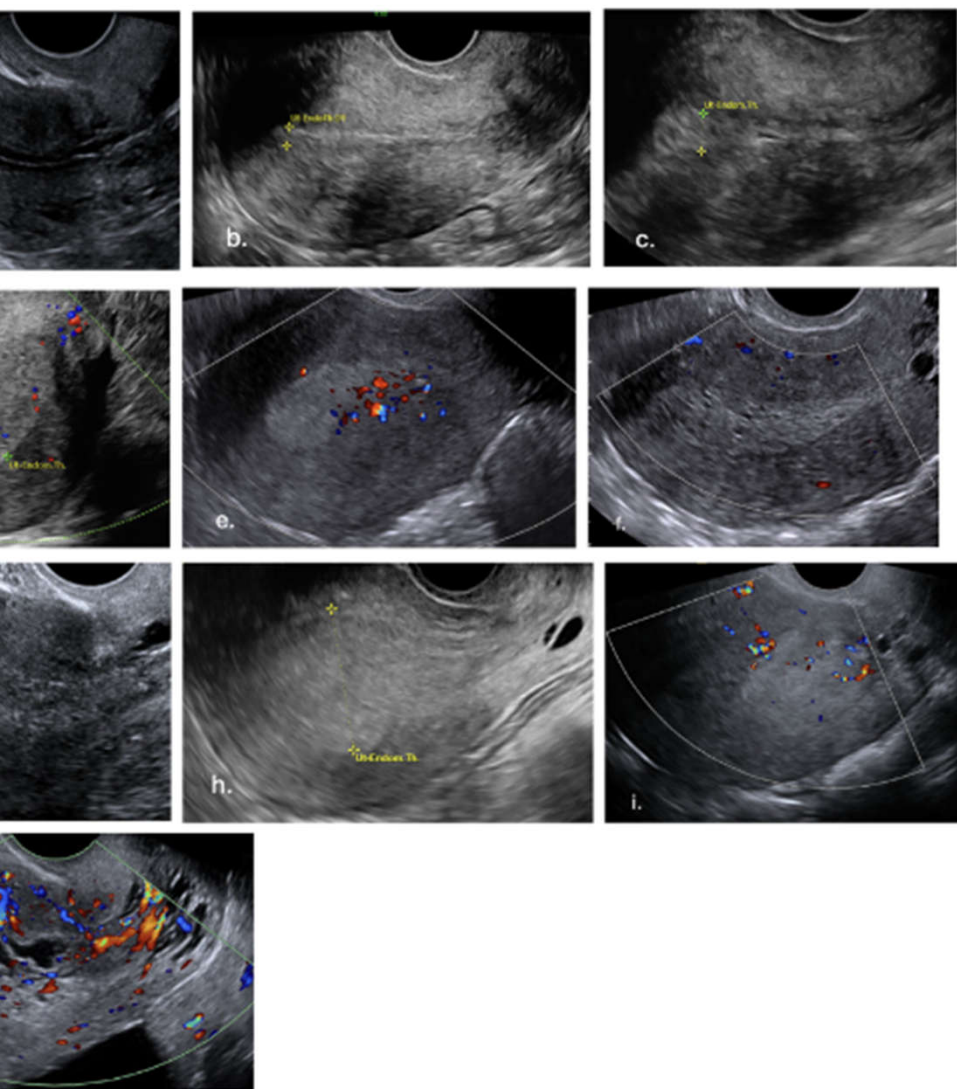


Figure 3. Representative transvaginal ultrasound (US) images demonstrating various endometrial characteristics of interest, with according histopathologic results. A, US: Normal endometrium. HP: Benign proliferative endometrium. B, US: Normal endometrium. HP: Benign menstrual endometrium. C, US: Normal endometrium. HP: Benign menstrual endometrium. D, US: Irregular/heterogeneous endometrium, but not thickened. HP: Disordered proliferative endometrium (DPE). E, US: Irregular/heterogeneous and thickened endometrium without increased endometrial vascularity. HP: Endometrial atypical hyperplasia (NAH). F, US: Irregular/heterogeneous and thickened endometrium with increased vascularity. HP: Endometrial atypical hyperplasia/endometrioid intraepithelial neoplasia (EAH/EIN). G, US: Irregular/heterogeneous, thickened, hyperechogenic endometrium with cystic areas but no increased vascularity. HP: Disordered proliferative endometrium (DPE). H, US: Irregular/inhomogeneous, thickened, hyperechogenic endometrium with cystic areas and reading faculty concern for hyperplasia or cancer. HP: Endometrial atypical hyperplasia/endometrioid intraepithelial neoplasia (EAH/EIN). I, US: Endometrial mass, not consistent with submucosal fibroid or polyp ("other" endometrial mass), and reading faculty concern for hyperplasia or cancer. HP: Endometrial atypical hyperplasia/endometrioid intraepithelial neoplasia (EAH/EIN) bordering on FIGO grade 1 endometrial cancer. J, US: Endometrial mass, not consistent with submucosal fibroid or polyp ("other" endometrial mass), ill-defined endomyometrial junction, increased vascularity, and reading faculty concern for hyperplasia or cancer. HP: FIGO grade 1 endometrial cancer. K, US: Thickened, hyperechogenic endometrium with cystic areas, ill-defined endomyometrial junction, and reading faculty concern for cancer. Note patient also had a prolapsing cervical mass which was read on ultrasound as prolapsing fibroid versus possible malignancy. HP: FIGO grade 2 endometrial cancer on both the endometrial biopsy and prolapsing cervical mass, which was removed prior to the endometrial biopsy.