

EP11.12/4538443

Diagnostic value of transrectal high-frequency linear array ultrasound combined with contrast-enhanced ultrasound in vaginal lesions.

Jiang Zhu

Objectives

To investigate the diagnostic value of transrectal high-frequency linear array ultrasound combined with contrast-enhanced ultrasound (CEUS) in the assessment of vaginal lesions.

Methods

Sterile coupling gel was applied intravaginally to serve as an acoustic window. A transrectal linear probe was placed into the rectum to visualize normal vaginal anatomy. For vaginal tumors, mass size, boundary, margin, morphology, and their anatomical relations to the vaginal wall, rectal wall, cervix and urethra were assessed. CEUS evaluate microvascular perfusion and differentiate benign and malignant lesions.

Results

A total of 16 lesions were enrolled, including 4 vaginal leiomyomas, 3 vaginal squamous cell carcinomas, 1 vaginal fibroma, 1 malignant melanoma, 1 vaginal fibromatosis, 1 malignant transformation of endometriotic foci, 1 metastatic signet-ring cell carcinoma, 1 adenocarcinoma, and 3 vaginal cysts.

Benign lesions had clear boundaries and intact capsules; CEUS showed observable capsular blood flow and intratumoral perfusion (hyper-, iso-, or hypo-enhancement). Malignant lesions had irregular margins; CEUS revealed rapid wash-in/wash-out, heterogeneous hyper-enhancement, and no capsular blood flow. Tumor invasion depth and extent were clearly demonstrated.

Conclusion

High-resolution high-frequency linear transducers are valuable in diagnosing thyroid nodules, breast lesions, and musculoskeletal disorders. Similarly, transrectal application of these probes delivers ultrasound beams perpendicular to superficial vaginal neoplasms, enabling cost-effective and rapid evaluation of lesion features and adjacent organ involvement. CEUS further assesses microvascular perfusion and differentiates benign from malignant lesions, providing a novel strategy for accurate evaluation of vaginal tumors.

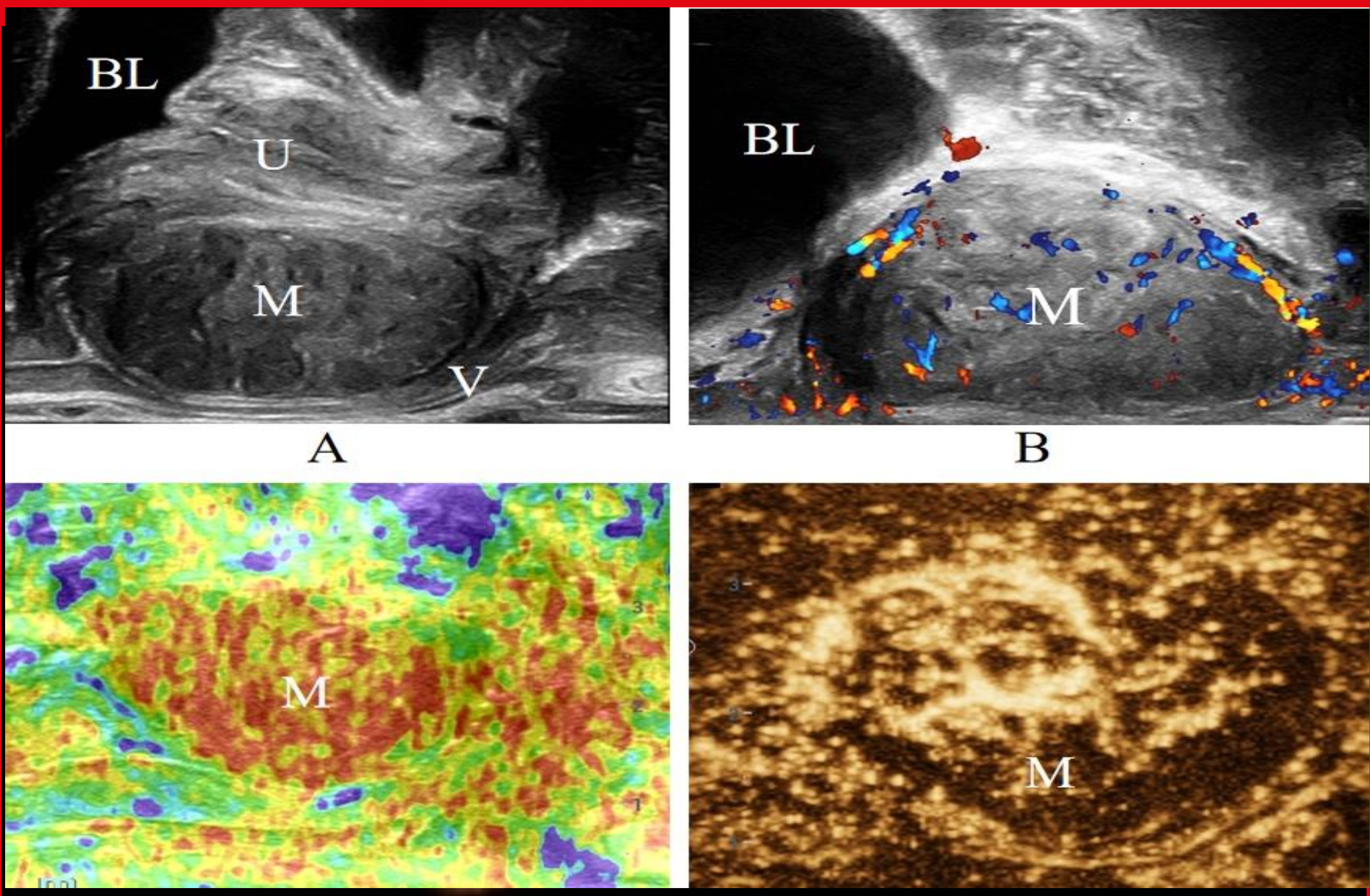


Figure 1. vaginal leiomyomas

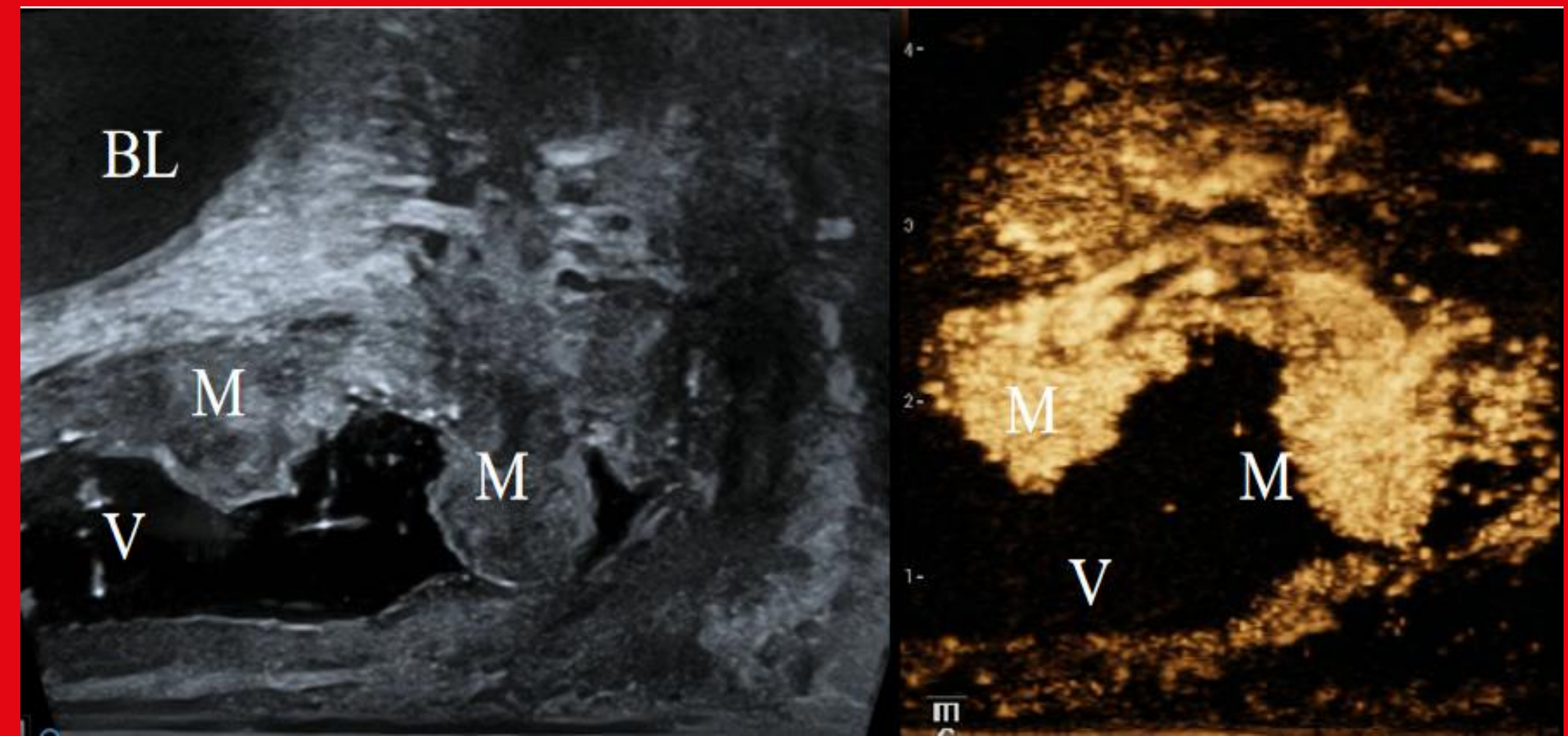


Figure 2. vaginal squamous cell carcinomas

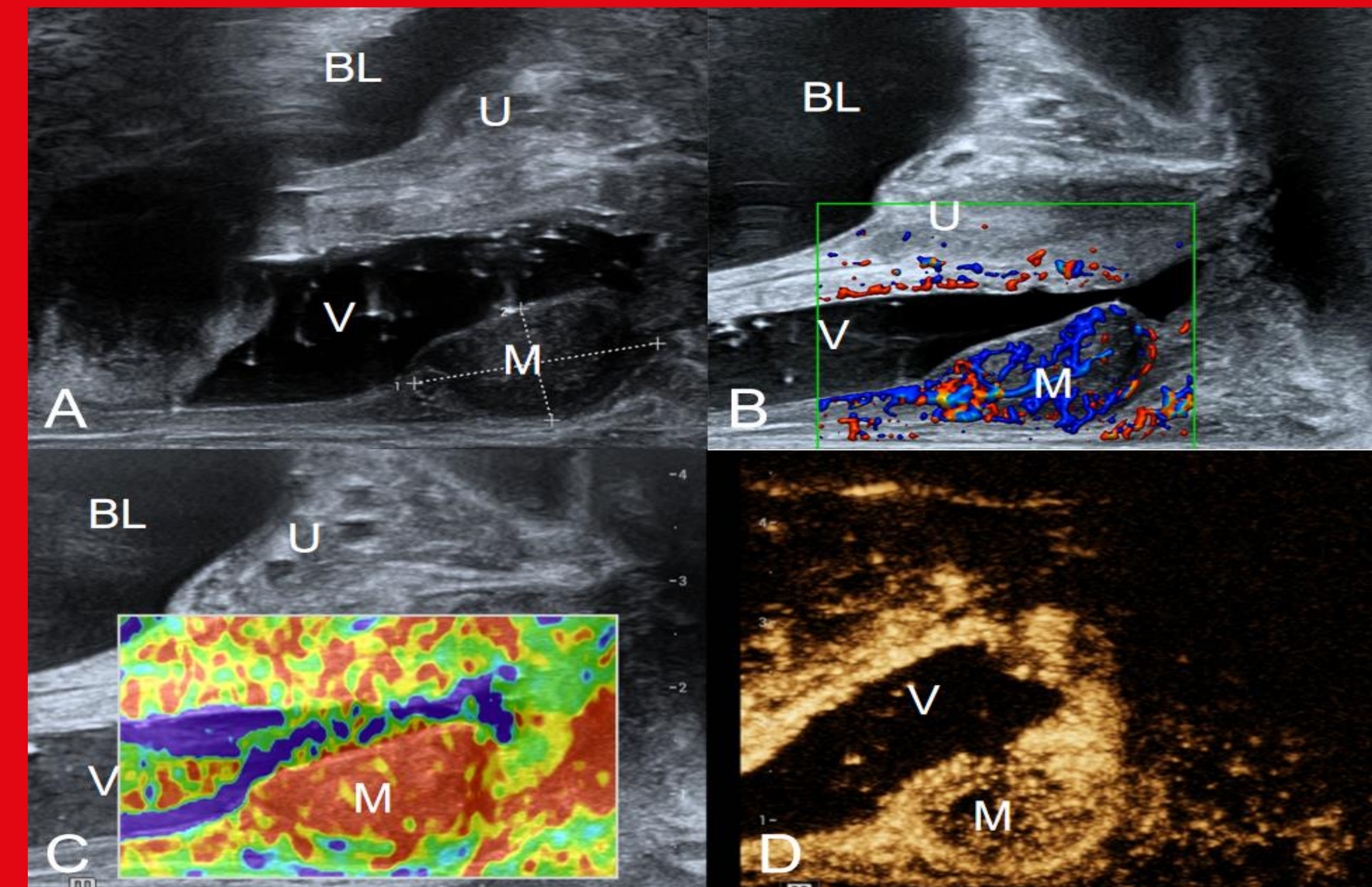


Figure 3. vaginal malignant melanoma