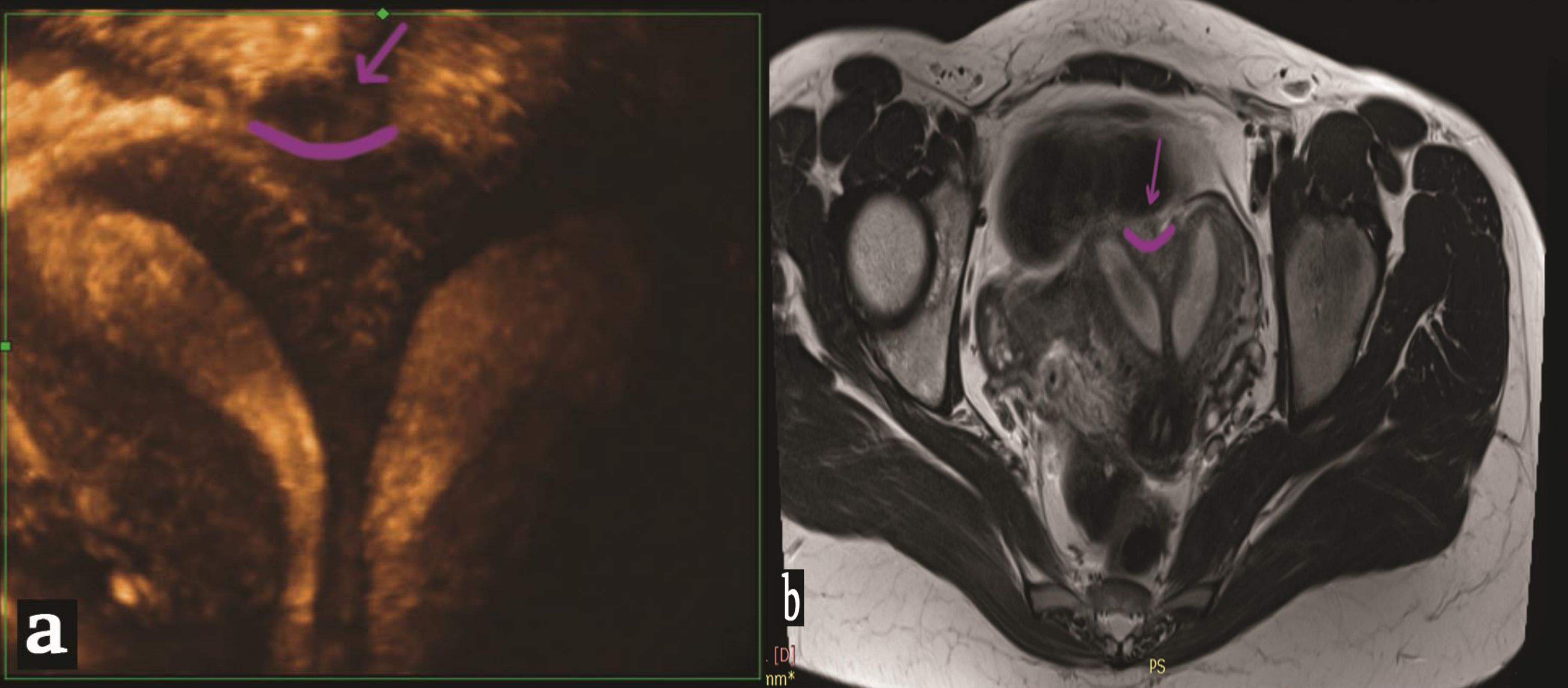


Clinical dilemmas in Mullerian anomalies: role of 3D transvaginal ultrasound

Ia Chapidze PHD, Giorgi Bogveradze

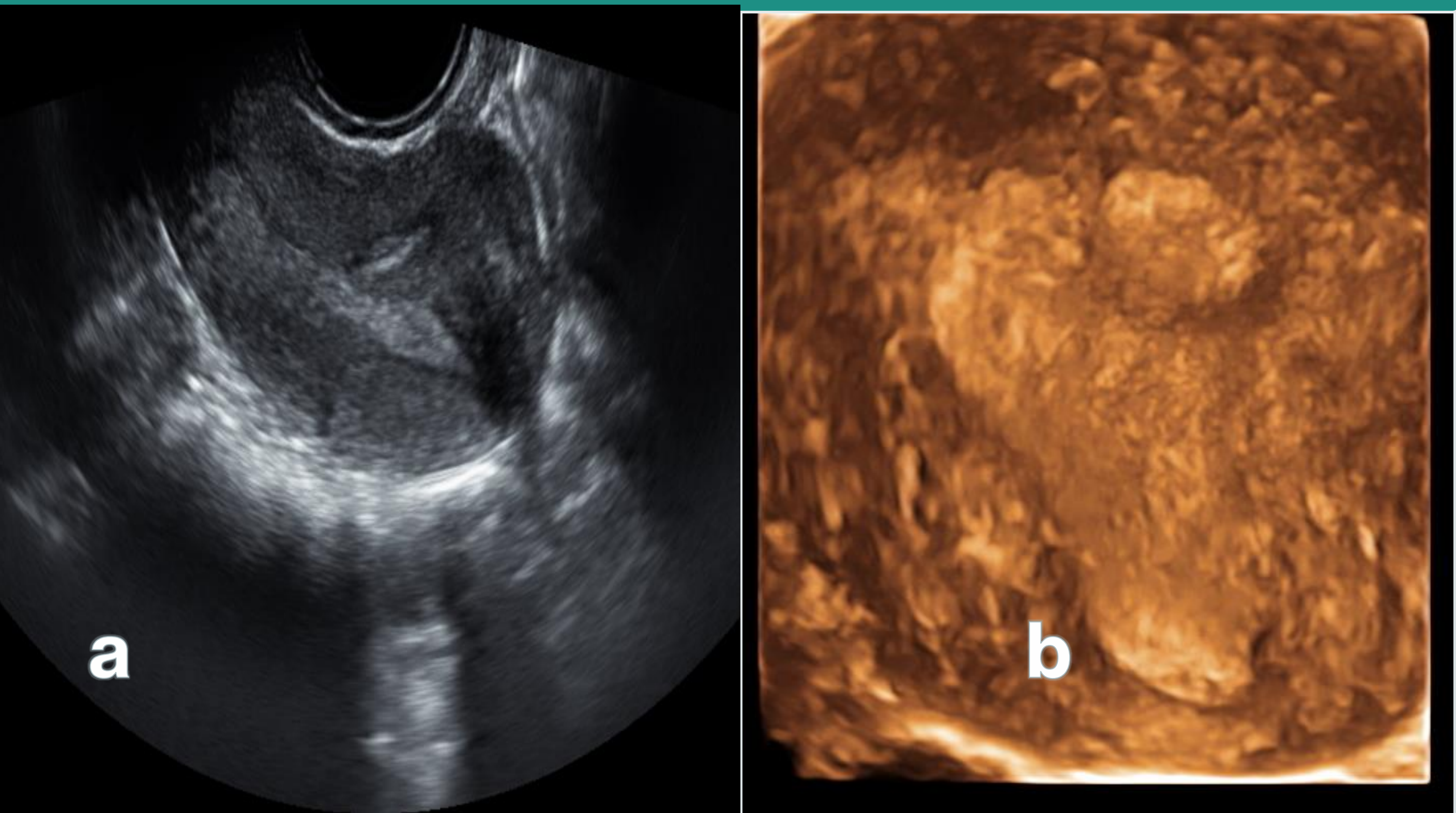
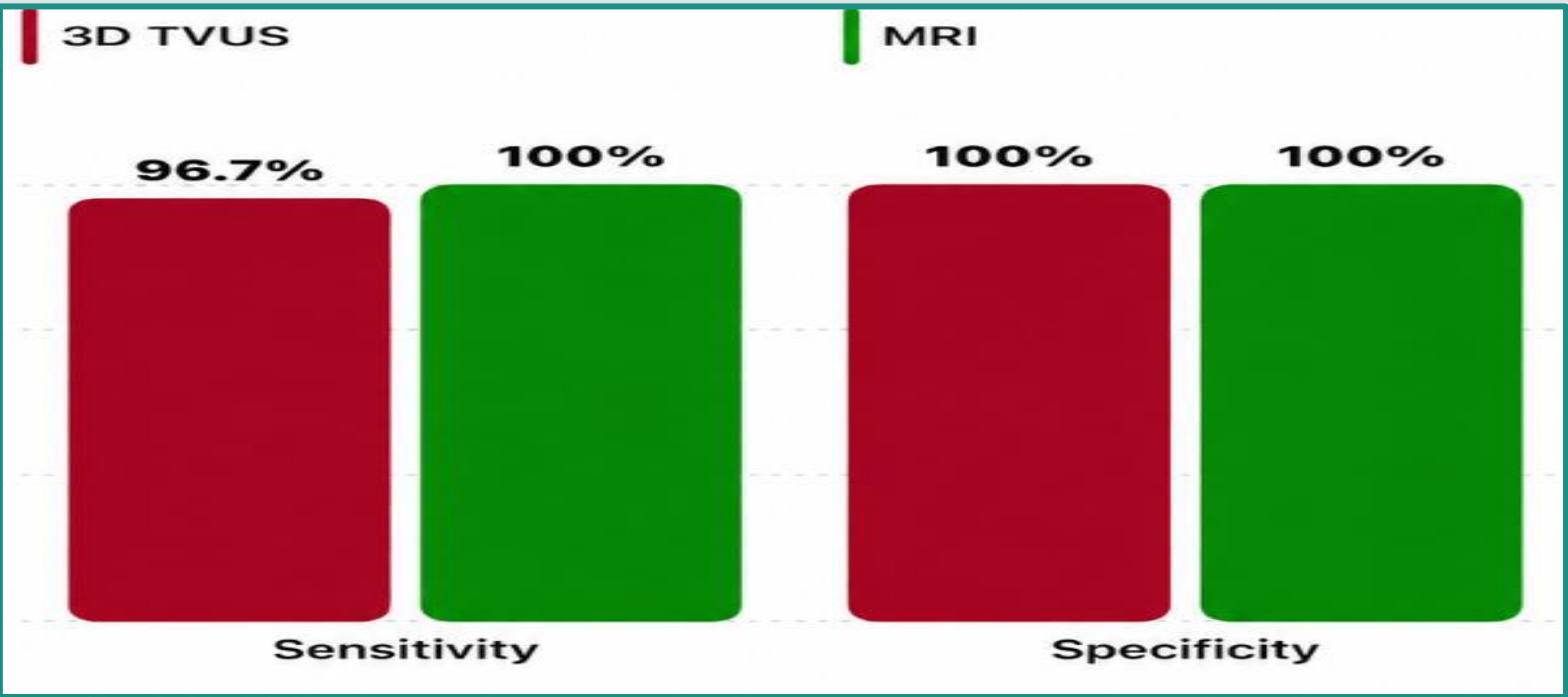
Department of Reproductive Medicine, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia.

Aim: to evaluate the diagnostic utility of three-dimensional transvaginal ultrasound (3D TVUS) in differentiating types of Müllerian anomalies (MA) and to explore how 3D imaging findings influence clinical decision-making in women with reproductive disorders.



The 3D TVUS(a) and MRI(b) images of the septate uterus are virtually identical

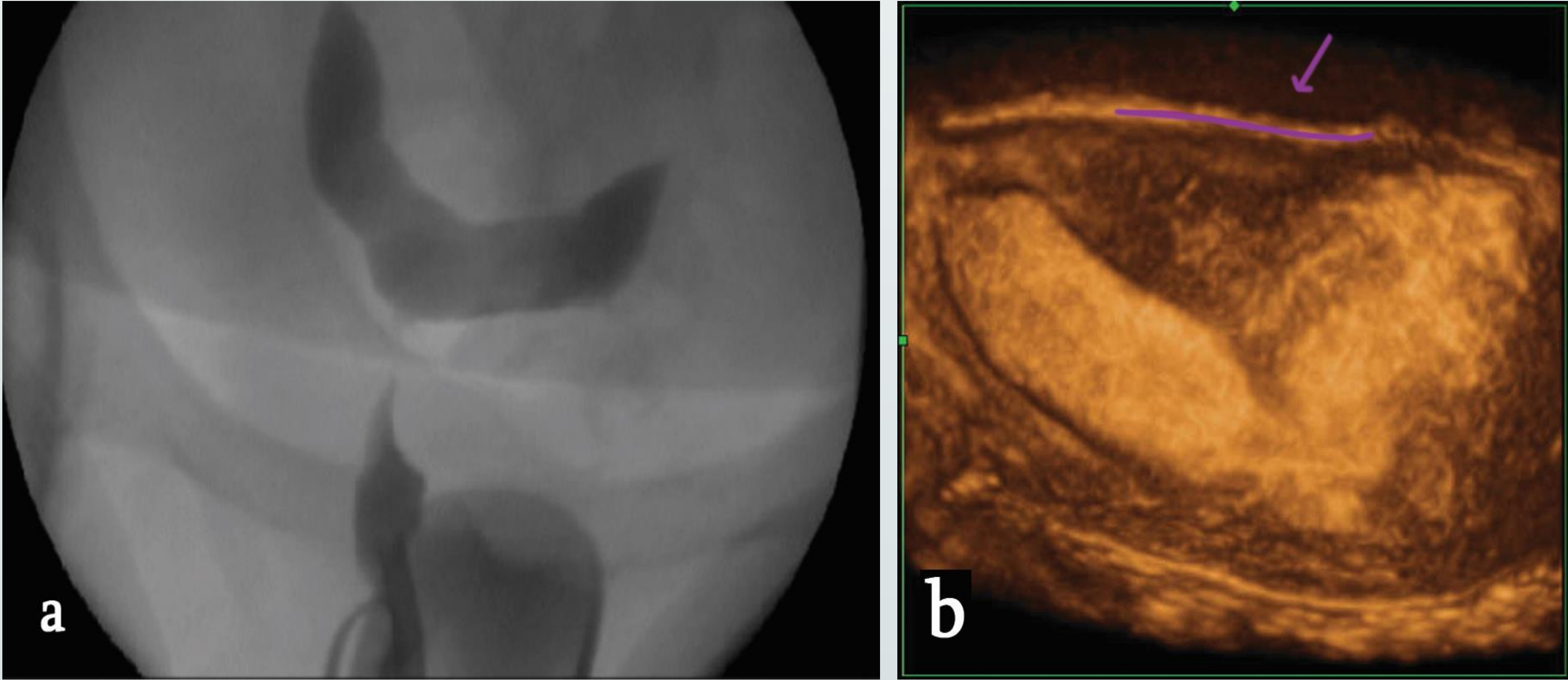
Diagnostic accuracy of 3D TVUS compared with MRI



Rare, unclassified Mullerian anomaly:an additional,communicating uterine cavity in the anterior-left uterine wall,lined by functional endometrium [2D(a) and 3D TVUS(b) images]

Results: 3D TVUS demonstrated a high level of agreement with MRI and hystero-laparoscopy in identifying septate and other types of Müllerian anomalies (Kappa >0.97). The modality allowed for improved differentiation between septate and bicornuate uterus and guided individualized management decisions, such as surgical correction or conservative follow-up. Compared to conventional 2D imaging, 3D TVUS findings altered clinical management in approximately 12% of evaluated cases

Methods: A secondary analysis was performed using data from a prospective cohort of 3,973 women aged 16–45 years assessed between 2019–2023 for various reproductive disorders, including infertility, recurrent pregnancy loss, and primary amenorrhea. Diagnostic accuracy measures of 3D TVUS were reviewed in comparison with reference imaging methods (MRI, hysterosalpingography, and hystero-laparoscopy), and its contribution to clinical management strategies was evaluated



HSG(a) incorrectly diagnosed a bicornuate uterus. 3D TVUS(b) demonstrated a wide septum.External uterine contour was found to be straight, confirming a septate uterus

Conclusions: Three-dimensional transvaginal ultrasound is not only a precise and non-invasive diagnostic tool for Müllerian anomalies but also a valuable instrument for clinical decision-making. Its integration into reproductive medicine workflows enhances patient selection for surgical intervention and reduces the need for additional imaging.

Contact information
Ia Chapidze
Reproductive Medicine Center,„Universe”,
Invitro Life Clinic
iachapidze253@gmail.com