Challenges in Ultrasound Diagnosis of Müllerian Malformations

CUME CLASSIFICATION: A PRACTICAL OVERVIEW

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Three-dimensional transvaginal ultrasound (3D-TVS) is a reliable method for classifying uterine malformations. The acquisition should be performed in the periovulatory or luteal phase of the menstrual cycle, assessing the midcoronal plane of the uterus using the 3D Uterine Trace feature or Advanced VCI (Volume Contrast Imaging) with OmniView and HD*live*™ render mode. Specific reference points and measurements should be used: the intercornual line, internal fundal indentation depth, mean of left and right lateral indentation angle, depth, and T-angle. Previously suggested measurements and cut-offs (fundal indentation angle, indentation-wall ratio) are less reliable and accurate.
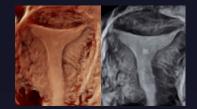
First published in 2018, the CUME (Congenital Uterine Malformation by Experts) classification is the only reliable classification method that addresses controversies associated with previous guidelines in the diagnosis and classification of congenital anomalies of the female genital tract, particularly the classification of the normal/arcuate, septate[1] and T-shaped uterus.[2] Provided are descriptions, graphics, and ultrasound images to help identify and classify the most challenging uterine malformations using the CUME diagnostic criteria.
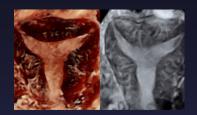
SEPTATE UTERUS

VS.

NORMAL/ARCUATE UTERUS

VS.

T-SHAPED UTERUS

Septate uterus:
– Internal fundal indentation depth ≥ 10 mm
– Indentation fundal angle < 140°
– Indentation-to-wall thickness ratio > 110%

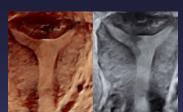**Septate uterus:**
Internal indentation depth (main criterion) must be ≥ 10 mm
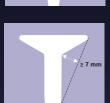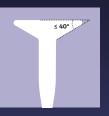
Normal/Arcuate uterus:
– Internal indentation depth < 10 mm
– Indentation angle > 130°
– Indentation-to-wall thickness ratio < 110%
– None or one of the three criteria for T-shaped uterus

T-shaped uterus:
– Lateral indentation angle ≤ 130°
– Lateral indention depth ≥ 7 mm
– T-angle ≤ 40°

T-shaped uterus: All three criteria must be present
Borderline T-shaped: Two of the three criteria must be present

References:
1. Ludwin A et al. CUME: better criteria for distinguishing between normal/arcuate and septate uterus? Ultrasound Obstet Gynecol. 2018
2. Ludwin A, et al. CUME: diagnostic criteria for T-shaped uterus. Ultrasound Obstet Gynecol. 2020

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