

EP05.128 EzVolume: An AI-Powered Next-Generation 3D Ultrasound Tool for First-Trimester Pregnancy

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01 Background & Methodology

Background

- Reliant on physician experience
- Subjective variability and time-consuming
- Difficult to visualize tiny fetal structures (5–12 weeks)

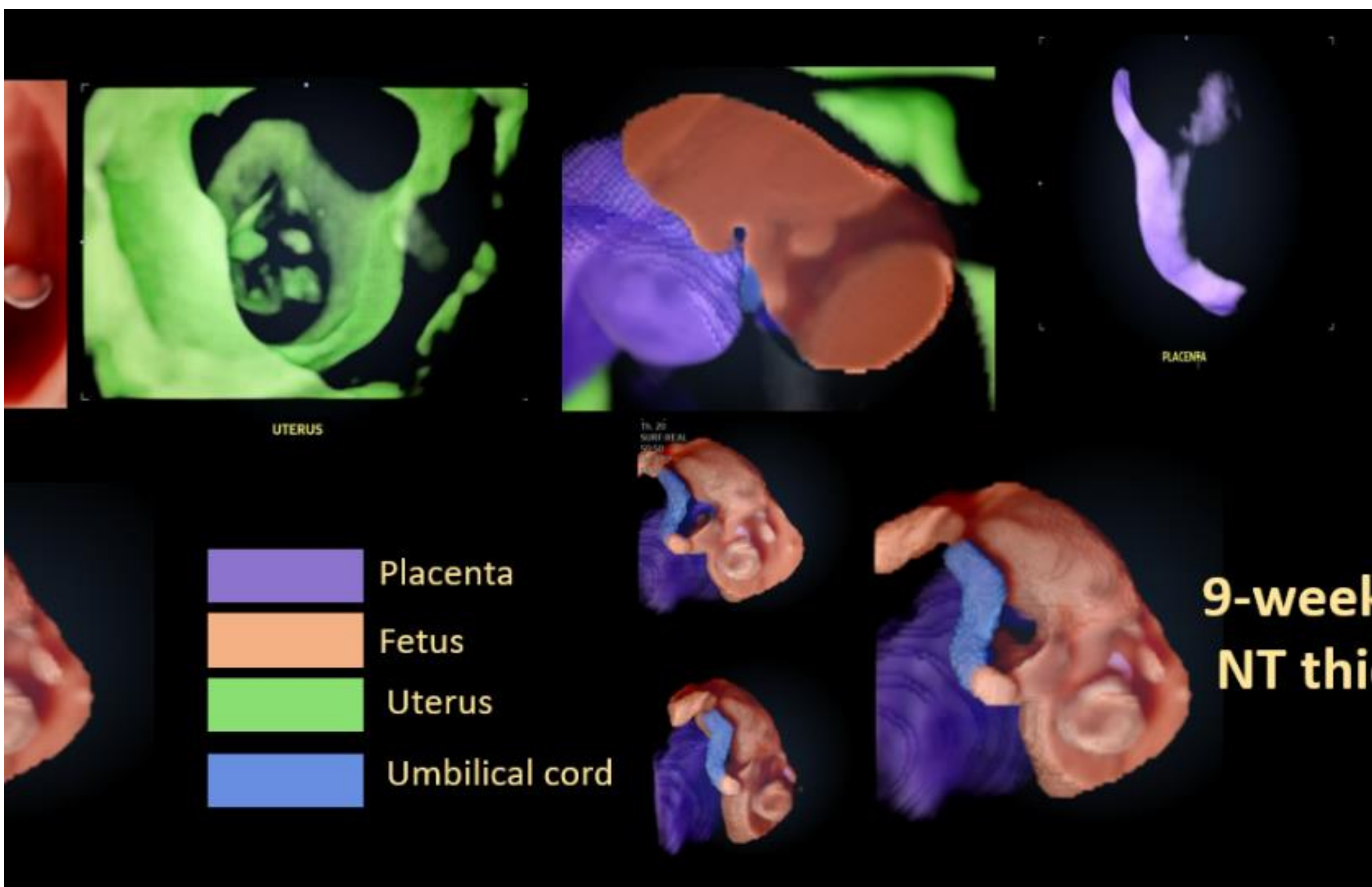
Objectives

Validate EzVolume's utility in automating anatomical identification and segmentation for first-trimester screening.

Study Design

- **Sample:** 33 pregnant women (5–12 weeks)
- **Technology:** AI-driven 3D ultrasound segmentation
- **Process:** Capture → AI Analysis → Labeling → Assessment
- **Endpoints:** Recognition accuracy & time efficiency

02 AI Visualization & Findings



Achieves **automated segmentation** and color-coded visualization of critical embryonic structures with high spatial clarity.

Uterus

Placenta



03 Clinical Value & Conclusion

Clinical Implications

- **Automated:** Reduces operator time and variability
- **Comprehensive:** 3D overlays for holistic anatomical view
- **Confidence:** Enhances diagnostic accuracy

Conclusion

EzVolume represents a paradigm shift in first-trimester imaging, providing an efficient and accurate solution for early pregnancy assessment and anomaly screening.

Case Study: 9-Week NT Thickening

Clearly delineated fetal contours and highlighted NT region, enabling precise measurement of potential chromosomal risk markers (high-risk screening utility).