



Supplementary Figure S1. VR-based segmentation and skeletonization of three-dimensional power Doppler ultrasound volume of a first-trimester pregnancy. Panel (A) depicts a three-dimensional (3D) power Doppler (PD) ultrasound of a first-trimester pregnancy. Using virtual reality (VR)-based segmentation, myometrial tissue surrounding the trophoblast and embryonic structures in the gestational sac are erased. The VR-based segmentation of placental tissue is depicted in (B). After the removal of the grayscale ultrasound signal, a 3D PD image of utero-placental vasculature (uPVV) remains, which is depicted in (C). Then, a skeletonization algorithm is applied to the uPVV, resulting in the utero-placental vascular skeleton (uPVS), depicted in (D). Panel E depicts a magnified portion of the uPVS. Each voxel is assigned a morphologic characteristic (red = endpoint, green = bifurcation point, blue = crossing point, white = vessel point). Two other characteristics are derived from the uPVS: I. Total network length, II. Average vessel thickness. This figure was previously published ([de Vos et al., 2022](#)).