

Three-dimensional measurement of gestational and yolk sac volumes in threatened and missed abortion

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Along with crown-rump length (CRL), the volume of embryonic structures such as gestational sac volume (GSV) and yolk sac volume (YSV) may have prognostic value for first trimester.

The aim of this study was to investigate whether first-trimester volume calculations of these structures using transvaginal three-dimensional ultrasound technique may have value as predictors of adverse reproductive outcome.

Between January 1, 2004, and September 31, 2004, fifty-nine patients with singleton pregnancies were included in this prospective study. Thirty examinations were performed in case of pregnancies with normal, 16 with threatened abortion, 13 with missed abortion.

In normal, the mean GSV, as measured by 3-dimensional sonography, was 15.5 ± 21.9 ml, the YSV was 0.0599 ± 0.0492 ml, ratio of YSV/GSV was 0.8634 ± 0.7248 . In threatened abortion, the mean GSV was 6.0 ± 7.6 ml, the YSV was 0.0383 ± 0.0194 ml, ratio of YSV/GSV was 1.2489 ± 0.8256 ($p > 0.05$). In missed abortion, the mean GSV was 5.6 ± 7.6 ml, the YSV was 0.1924 ± 0.2942 ml, ratio of YSV/GSV was 6.3453 ± 10.6089 ($p = 0.0033$). The ratio of YSV/GSV differ significantly between the normal and missed abortion groups ($p = 0.0033$).

The ratio of YSV/GSV predicts the outcome of expectant management of missed miscarriage within first trimester pregnancy of the diagnosis.

Keywords: three-dimensional ultrasonography, gestational sac, yolk sac