Early First Trimester Diagnostic Criteria for Nonviable Pregnancy

Peter M. Doubilet, MD, PhD

On October 23-24, 2012, the Society of Radiologists in Ultrasound convened a 15-person international multispecialty consensus panel, consisting of radiologists, obstetrician/gynecologists, and emergency physicians, to establish sonographic criteria for nonviable pregnancy in the early first trimester. [Note on terminology: we use the term "viable pregnancy" to mean a pregnancy that has a possibility of resulting in the birth of a live infant; a failed intrauterine pregnancy ("miscarriage") or ectopic pregnancy is "nonviable".]

Key recommendations of the panel included:

1. In a woman with a positive hCG, any saclike structure (i.e., one with rounded edges) in the central echogenic part of the uterus (i.e., the decidua) is highly likely to represent a gestational sac, whether or not it demonstrates a "double sac sign" or "intradecidual sign". In the presence of such a saclike structure, treatment that could damage an embryo, such as D&C or systemic methotrexate, should be avoided until the possibility of a viable intrauterine pregnancy has been ruled out.

2. The finding of an embryo with crown-rump length $\geq 7$ mm and no heartbeat on a transvaginal scan is definitive for failed pregnancy. The finding of an embryo with CRL $< 7$ mm and no heartbeat is suspicious, but not definitive, for failed pregnancy.

3. The finding of a mean sac diameter $\geq 25$ mm and no embryo on a transvaginal scan is definitive for failed pregnancy. The finding of a MSD of 16-24 mm and no embryo is suspicious, but not definitive, for failed pregnancy.

4. In a woman with a pregnancy of unknown location (positive pregnancy test and no intrauterine or ectopic pregnancy seen on transvaginal ultrasound) whose hCG is $< 3000$ mIU/ml, interventions such as methotrexate or D&C should not be undertaken, in order to avoid the risk of interrupting a viable intrauterine pregnancy.