



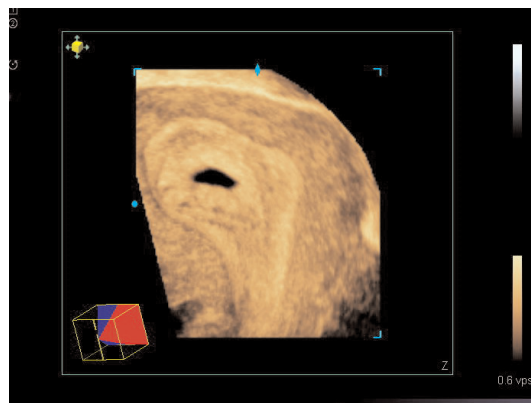
Case Study

Early Pregnancy Evaluation with 3D and 4D Ultrasound

Patient History

A 28-year-old female presents at the ER with bleeding and abdominal pain and cramping symptoms that started four hours previously. Initially the patient thought that she was menstruating after not having done so for over two months. Temperature, pressure and pulse measurements were within normal limits. The abdomen is soft, with minimal lower-quadrant tenderness and no rebound or guarding. Pelvic examination reveals blood in the vaginal vault and a closed cervix. Palpation reveals neither cervical motion tenderness nor adnexal masses. Uterus size is found to be consistent with six weeks gestation, and a urine pregnancy test yields a positive result. Based on clinical symptoms and findings, threatened abortion is suggested, although ectopic pregnancy must also be ruled out. With first-trimester bleeding occurring in 20-30% of all pregnancies, and blighted ovum causing about 50% of first-trimester miscarriages, an ultrasound evaluation, including 3D and 4D imaging is suggested.

Image Findings



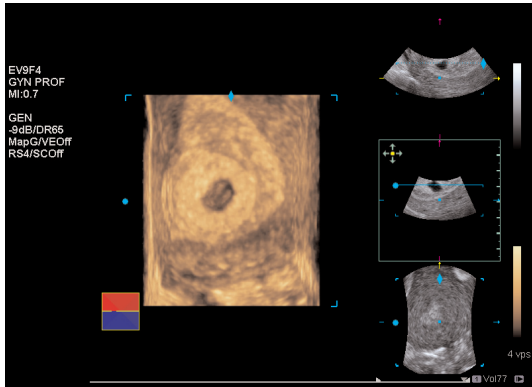
3D Autosweep provides a high-resolution 3D volume in sagittal view, demonstrating a flattened gestational sac without embryonic echo or yolk sac.

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4D real-time imaging in the coronal view demonstrates round-shape gestational sac with some peri-implantational bleeding in close proximity.

Clinical Outcome

Clinical picture is consistent with threatened abortion. Ultrasound virtually excluded the diagnosis of ectopic pregnancy. 3D/4D ultrasound clearly outlined an intrauterine gestational sac, although without visualization of an embryo within, a diagnosis of blighted ovum is suggested. Signs of peri-implantational bleeding are observed, explaining the symptoms of bleeding and pain. Since most cases presenting with early pregnancy bleeding are thought to be due to implantation bleed, no immediate

treatment, such as D & C is recommended. Bed rest and continued clinical and ultrasound monitoring are advised. There is a minute chance that a subsequent ultrasound scan in seven days will visualize a yolk sac and embryonic echo.

Ultrasound Solution

fourSight™ 4D ultrasound imaging technology brings added dimension to the imaging capabilities of the ACUSON Antares™ ultrasound system, premium edition. *fourSight* 4D imaging permits simultaneous display of comprehensive, real-time images of anatomical structures in multiple spatial dimensions. In addition, these visualizations help the clinician more effectively communicate with the patient about her condition.

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