Diagnosis of Angular Pregnancy With 3D Ultrasound

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This case report features an underappreciated clinical entity—angular pregnancy. What do you know about this rare obstetric complication?

Despite its description by Kelly\(^1\) in 1898, angular pregnancy is still a relatively unknown entity. Angular pregnancy is defined as a pregnancy implanted in one of the lateral angles of the uterine cavity. It has been classified as ectopic, nearly ectopic, or intrauterine. Unlike an interstitial pregnancy, which implants in the intramural portion of the fallopian tube, an angular pregnancy can progress to term. However, 38% terminate spontaneously in miscarriage. Moreover, there is also an increased risk for both placenta accreta and uterine rupture.\(^2\)

Some authors have even suggested that angular pregnancy is a misnomer and that the term should not be used.\(^3\) We disagree and present a case of angular pregnancy, which was diagnosed with three-dimensional multiplanar ultrasound.

Case Report

Our patient RV is a 36-year-old woman P0000 who presented with a 5-week history of amenorrhea and pelvic pain. She had been to the ED, where an ultrasound revealed no evidence of either adnexal mass or an intrauterine gestational sac. Her beta hCG titer was 450 mIU/mL. Because her clinical condition was stable, she was referred to her ob/gyn for further management. Pelvic examination four days later was again unremarkable. Serial beta hCG levels were 1065 mIU/mL and 1310 mIU/mL respectively. A transvaginal ultrasound with three-dimensional multiplanar imaging was performed, which revealed a 4-mm gestational sac-like structure implanted eccentrically in the right decidual angle (Figure 1).
Because the sac was intrauterine, the patient was followed expectantly, and a subsequent ultrasound demonstrated slow growth in the gestational sac. The patient then reported increasing vaginal bleeding and another sonogram demonstrated again a markedly eccentric (but still contiguous with the decidua) gestational sac (Figure 2). The poor progress in the growth of the sac
Figure 2
The location of the gestational sac raised the possibility of angular pregnancy. For these reasons, the patient received intramuscular methotrexate and, subsequently, expelled products of conception two days later.

Discussion
Munro Kerr\(^4\) described two cases in 1934 as “examples of that rare variety of gestation designated ‘angular’ pregnancy, which we are inclined to think has never received sufficient recognition as a definite clinical entity.” In fact, angular pregnancy appeared even earlier in Kelly’s *Operative Gynecology* in 1898.\(^1\) Despite this, the mention of angular pregnancy usually results in blank looks and quizzical expressions. It is nowhere to be found in many modern textbooks. Jurkovic,\(^3\) in fact, opined that the term should be discarded as a historical relic.

Another confounding factor is that the terms cornual, interstitial, and angular are lumped together as simply cornual. In fact, a cornual pregnancy is simply pregnancy in one horn of a bicornuate uterus.\(^2\) Once we limit the use of cornual, we are left differentiating interstitial, always ectopic, and angular, which can behave as ectopic.

Anatomically, the feature that distinguishes the two is the relationship between the pregnancy and either the uterine cavity or, at laparoscopy, the round ligament. Angular pregnancy implants in the angle of the uterine cavity, while the interstitial pregnancy implants just laterally. At laparoscopy, the “bulge” of angular pregnancy is medial to the round ligament, whereas that of an interstitial being lateral.

With our case, the early manifestation within the decidua, best seen in the coronal plane of the three-dimensional ultrasound along with the pattern of growth, were keys to the diagnosis. While the diagnosis can be made early by ultrasound, as the pregnancy grows and the sac expands, diagnosis becomes progressively more difficult. Recently, MRI has been utilized in some of these cases.\(^5\) As the difficulties with diagnosis increases, so do the difficulties with management. Although expectant management can be successful, the desire for a wanted pregnancy must be balanced with the risk of catastrophic rupture. In our case, the patient’s clinical signs and symptoms led to the appropriate management.

So, is the angular pregnancy intrauterine or ectopic? Jansen\(^2\) offered that angular pregnancy does not seem to be a part of the pathologic continuum of the ectopic pregnancy. Our feeling is that the answer to that question should be both.

**References:**


**Links:**