Ultrasonographic Soft Markers of Aneuploidy in Second Trimester: Echogenic Bowel

Authors and Disclosures

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Echogenic Bowel

Fetal echogenic bowel refers to the presence of hyperechoic bowel, as compared with the echogenicity of the adjacent iliac bone.[31] The diagnosis of echogenic bowel is made when the bowel appears to be at least as echogenic as adjacent bone at the time of second-trimester ultrasound (**Figure 2**).

(Enlarge Image)

Figure 2.

Sagittal image of fetal abdomen shows echogenic bowel. The image should include fetal bowel, liver and iliac bone for comparison. Bowel is considered echogenic if the echogenicity of the bowel is more or equal to that of adjacent iliac bone. Source: Pilu G, Nicolaides K, Ximenes R, Jeanty P. Diagnosis of fetal abnormalities. The 18-23 week scan. Diploma in Fetal Medicine. ISUOG Educational Committee. Copyright 2002 © by the authors and ISUOG. Reprinted with permission.

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Echogenic bowel in the third trimester is a relatively common finding with uncertain clinical significance.[31] Technical factors are very important, and the frequency of the transducer should be 5 MHz or lower. Once an echogenic bowel is suspected, the gain of the ultrasound unit is lowered gradually until only bone or bowel is visible. Echogenic bowel can be classified as focal, multifocal, or diffuse. A grading system has been proposed by several authors to quantify the degree of echogenicity of fetal bowel to decrease the interobserver variation.[32,33]

Slotnick and colleagues[33] categorized echogenicity of the bowel into 3 grades, and the echogenicity of the bowel is compared with the echogenicity of the iliac crest. Grade 1 echogenic bowel refers to echogenicity of the bowel that is less than that of the iliac crest; grade 2 echogenic bowel is equal to that of the iliac crest; and grade 3 echogenic bowel is more echogenic than the iliac crest. The association of echogenic bowel with aneuploidy and adverse pregnancy outcome is strongest with moderate to severe echogenicity (grades 2 and 3).[33]

Echogenic bowel is diagnosed in 0.2% to 1.4% of all second-trimester ultrasounds.[34] It is associated with normal fetuses, fetuses with aneuploidy, intrauterine growth retardation (IUGR), bleeding, cystic fibrosis (CF), congenital viral infections, and thalassemia.[31,34-38] The association of echogenic bowel with aneuploidy, particularly trisomy 21, has been demonstrated in several studies.[34-37] The presence of echogenic bowel at the time of second-trimester ultrasound is an important finding. A detailed ultrasound of the fetus should be performed, and an amniocentesis for karyotype for evidence of cytomegalovirus (CMV), toxoplasmosis, and parvovirus infection should be recommended. CF carrier testing for both parents and maternal serologic testing of recent CMV and toxoplasmosis should also be performed (IgG and IgM).[31] Follow-up with serial growth scans is recommended, as these fetuses are at risk for IUGR.[31]

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