

Evidence Discussion (PV-15)

- Transabdominal and transvaginal obstetric ultrasound remain the preferred initial imaging for fetal evaluation of the fetus and maternal pelvic anatomy (1). Ultrasound has the benefit of being widely available and does not have exposure to ionizing radiation.
- Fetal MRI has emerged as an adjunct imaging to fetal ultrasound in cases where the initial ultrasound is unclear or additional information is needed for surgical or delivery planning. It has the benefits of not being limited by maternal body habitus, fetal position, ossification of fetal skull/bones, or oligohydramnios (1).
- There is much uncertainty surrounding the use of gadolinium in pregnancy. Gadolinium is water-soluble and can cross the placenta, reaching the amniotic fluid and fetal circulation. While the risk of fetal effects of gadolinium remains uncertain, it has been shown to be teratogenic in animal studies. Given these possible fetal risks, the use of gadolinium in pregnancy should be limited. Its use should only be in situations where the benefits clearly outweigh the risks (2).
- MRI can be used as an adjunct to ultrasound if there is suspicion for abnormal placentation. Sensitivity and specificity for placental invasion is comparable between ultrasound and MRI (sensitivity of 88% and sensitivity of 86% for ultrasound and 93% and 94% for MRI) (3). MRI has also been associated with both false positive and false negative diagnoses. Hence, a stepwise approach to evaluation, starting with ultrasound, then followed by the use of MRI for equivocal or nondiagnostic ultrasound is supported.
- Ectopic pregnancy is the leading cause of maternal mortality in the first trimester (4). Ultrasound remains the initial imaging modality for ectopic pregnancy, but MRI may add additional information, especially in cases of rare implantation-site ectopic pregnancy (e.g. Cesarean Section scar ectopic). MRI is indicated in cases where the ultrasound is nondiagnostic (4).
- There is currently insufficient evidence to support the use of imaging pelvimetry (x-ray, CT or MRI) in delivery planning (5).

References:

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