Imaging of the Placenta: A Multimodality Pictorial Review

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Abstract

The placenta is often overlooked in the routine evaluation of a normal gestation, receiving attention only when an abnormality is detected. Although uncommon, abnormalities of the placenta are important to recognize owing to the potential for maternal and fetal morbidity and mortality. Pathologic conditions of the placenta include placental causes of hemorrhage, gestational trophoblastic disease, retained products of conception, nontrophoblastic placental tumors, metastases, and cystic lesions. Sonography remains the imaging modality of choice for evaluation of the placenta. Magnetic resonance (MR) imaging can be of added diagnostic value when further characterization is required, particularly in the setting of invasive placental processes such as placenta accreta and gestational trophoblastic disease. Computed tomography (CT) has a limited role in the evaluation of placental disease owing to limited tissue characterization, compared with that of MR imaging, and the radiation risk to the fetus; this risk often outweighs the benefit. The primary role for CT is in the evaluation of trauma and gestational trophoblastic disease, for which it allows characterization of the primary lesion and distant metastases.

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