Role of MRI in assessment of placenta accreta

Essay

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List of Abbreviations

- **ABCP:** ATP-binding cassette proteins.
- **BCRP**: Breast cancer resistance protein.
- **DWI:** Diffusion-weighted imaging.
- **DWM:** Dandy-Walker Malformation.
- **FISP:** Fast Imaging with Steady State Precession.
- **FSE:** Fast spin echo.
- **FSGPR:** Fast multi-planer spoiled gradient echo.
- **HASTE:** Half-Fourier acquisition single-shot turbo spin-echo.
- **GRE**: Gradient refocused echo
- **MDR1:** multi-drug resistance protein1.
- **MRP:** multi-drug resistance-associated protein.
- **MRI:** Magnetic resonance imaging.
- **MXR:** Mitoxantrone resistance-associated protein.
- **PA:** Placenta accreta
- **Pc:** Post conception
- **RARE:** Rapid acquisition with relaxation enhancement.

- **SE:** Spin Echo.
- **SSFSE:** Sagittal single-shot fast spin-echo.
- **TF:** Turbo factor.
- **US:** Ultrasound

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Abstract

Placenta accreta (PA) is a severe pregnancy complication which occurs when the chorionic villi (CV) invade the myometrium abnormally. Optimal management requires accurate prenatal diagnosis. Ultrasonography (USG) and magnetic resonance imaging (MRI) are the modalities for prenatal diagnosis of PA, although USG remains the primary investigation of choice. MRI is a complementary technique and reserved for further characterization when USG is inconclusive or incomplete. Breath-hold T2-weighted half-Fourier rapid acquisition with relaxation enhancement (RARE) and balanced steady-state free precession imaging in the three orthogonal planes is the key MRI technique. Markedly heterogeneous placenta, thick intraplacental dark bands on half-Fourier acquisition single-shot turbo spin-echo (HASTE), and disorganized abnormal intraplacental vascularity are the cardinal MRI features of PA. MRI is less reliable in differentiating between different degrees of placental invasion, especially between accreta vera and increta.

Keywords: Abnormal placental vascularity, dark intraplacental band, MRI, placenta accreta.

Introduction