



# **ROLE OF MAGNETIC RESONANCE IMAGING IN ASSESSMENT OF FETAL BRAIN ANOMALIES**

*Essay*

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Radiodiagnosis*

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# دور التصوير بالرنين المغناطيسي في تقييم تشوهات مخ الجنين

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## **List of Abbreviations**

- **ACR:** American College of Radiology
- **AVM:** Arteriovenous malformation
- **CCA:** Corpus Callosum Agenesis
- **CMV:** Cytomegalovirus
- **CNS:** Central Nervous System
- **CSF:** Cerebrospinal Fluid
- **DWI:** Diffusion-weighted imaging
- **DWM:** Dandy Walker Malformation
- **DWM:** Dandy-Walker Malformation.
- **FISP:** Fast Imaging with Steady State Precession.
- **FSE:** Fast spin echo.
- **FSGPR:** Fast multi-planer spoiled gradient echo.
- **GRE:** Gradient refocused echo
- **GZ:** germinative zone

- **HASTE:** Half-Fourier acquisition single-shot turbo spin-echo.
- **HPE:** Holoprosencephaly
- **MRI:** Magnetic resonance imaging
- **NTD :** Neural Tube Defect
- **PF:** posterior fossa
- **RARE:** Rapid acquisition with relaxation enhancement.
- **SE:** Spin Echo.
- **SPR:** Society for Pediatric Radiology
- **SSFSE:** Sagittal single-shot fast spin-echo.
- **TF:** Turbo factor
- **US:** Ultrasound
- **VGAM:** Vein of Gallen Arteriovenous malformation

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### **Abstract**

The fetal brain MRI and ultrasound are complimentary imaging techniques in assessment of fetal brain anomalies. When an anomaly is visualized by ultrasound but the etiology remains uncertain due to the nature of the abnormality, or due to sonographic limitations from fetal lie, maternal body habitus, oligohydramnios, or small field of view fetal brain MRI can serve as a confirmative diagnostic and prognostic tool which characterize each type of malformation supplying definitive and complete knowledge of fetal brain pathology and prognosis of diseases also fetal cerebral parenchyma which is essential for decision making in fetal surgery and for parental counseling. T2-weighted imaging using ultrafast sequences (single shot fast spin echo) are mainly used. T1-weighted images (both with and without fat saturation), diffusion weighted imaging, and gradient images are often obtained for complementary information.

**Keywords:** Fetal brain, Magnetic Resonance Imaging, Fetal brain anomalies.