



Al-Mustaqbal University
College of Health and Medical Technologies
Radiological Techniques Department

Magnetic Resonance Imaging

First Semester

Lecture 27 : MRI IN Obstetrics

By

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Introduction :

MRI is very useful to diagnose pregnancy-associated obstetric and gynecological complications. It will be an important complementary tool to sonography and thereby facilitate better patient management.

Scientific Content:

Obstetric MRI allows for **detailed imaging of the developing fetus in utero. Fast sequences are required due to fetal movement.** Fetal MRI is most commonly utilized when ultrasound findings are equivocal. Fetal anatomy can be evaluated in detail including **the brain, upper aerodigestive tract, thorax, pelvis and abdomen.** Imaging can be performed from the **second trimester** . Biosafety and small fetal size in the first trimester makes fetal MRI of equivocal/controversial use prior to the second trimester.

• **Indications:**

- 1- **Abnormality suspected on ultrasound** but poorly seen due to fetal position or limited field of view.
- 2- **Abnormality on ultrasound** is poorly defined or equivocal and further clarification is required for ongoing management or prognostication.
- 3- The fetus is considered to be at high risk for a pathology that cannot be evaluated on ultrasound.
- 4- Suspected brain and spine anomalies on ultrasound requiring further evaluation.

• **Limitations:**

- 1-Maternal weight/size exceeds table recommendations or MRI caliber.**
- 2-Claustrophobia.**
- 3-Implanted ferromagnetic devices**
- 4-Assessment of cardiac structures is limited by rapid fetal heart rate and fetal movement.**

• **MRI Sequences**

1.	SSFSE sequence (Single Shot Fast Spin Echo)	(Slice thickness 3-5mm) Useful : (provides high resolution imaging of the fetus and maternal pelvis. It provides detailed anatomical information).
2.	SSFP sequence (Steady-State Free Precession)	(Slice thickness 3-5mm) Useful : (can be used for imaging of the heart and blood vessels).
3.	T1WI	(Slice thickness 3-5mm) Useful : (demonstration of fetal anatomy).