Cohere Medical Policy - Magnetic Resonance Imaging (MRI), Fetal/Placental

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

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Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Fetal/Placental

Recommended Clinical Approach

Magnetic Resonance Imaging (MRI) of a fetus/placenta is a diagnostic tool used to provide a detailed view of suspected or known fetal anomalies, congenital in origin, while the fetus is still in-utero.[1] Anomalies of interest include neural tube defects (such as spina bifida), cardiovascular abnormalities, pulmonary differences, and certain complications associated with high-risk multiple-gestation pregnancies, including twin-to-twin transfusion syndrome. Because MRI does not use ionizing radiation, it is one of the imaging modalities of choice for pregnant patients. There are theoretical risks to the fetus; therefore MRI is reserved for only those clinical situations where the diagnostic benefits of MRI outweigh those theoretical risks. Certain conditions require in-utero invasive treatment (including fetal surgery) which relies upon adequate intrapartum imaging. Fetal MRI is of additional use in the advance planning of technically difficult deliveries, such as fetuses with compromised airways who may require complex, assisted delivery methods, like the EXIT (ex utero intrapartum treatment) procedure, to maintain oxygen and blood flow. In general, fetal MRI is considered when the resulting information would be critical in diagnosing a condition, planning the delivery, counseling the pregnant patient, or selecting appropriate surgical or nonsurgical treatment. Fetal MRI also provides a view of the placenta, which is critical for diagnosing and planning the treatment of placenta accreta spectrum disorders (PAS).

Medical Necessity Criteria

Indications

- ➔ **Fetal/Placental MRI** is considered appropriate if **ALL** of the following are **TRUE**[1-27]:
  - ◆ Ultrasonography has been performed and is indeterminate, technically inadequate, nondiagnostic, or provides an incomplete clinical evaluation; **AND**
  - ◆ **ANY** of the following is true:

- Evaluation of known or suspected fetal anomaly, including but not limited to **ANY** of the following[2]:
    - Anatomical anomaly (brain, spine, facial, neck, oropharyngeal, thoracoabdominal, cardiac, vascular, pulmonary, gastrointestinal, genitourinary, musculoskeletal, etc.); **OR**
    - Diaphragmatic hernia; **OR**
    - Other tumor or mass; **OR**
    - Other anatomical obstruction; **OR**
- Assessment of the fetal airway; **OR**
- Evaluation of known or suspected fetal infection[2]; **OR**
- Evaluation of fetus in the setting of abnormal amniotic fluid, including **ANY** of the following[3,4]:
    - Polyhydramnios; **OR**
    - Oligohydramnios; **OR**
    - Anhydramnios; **OR**
- Planning or evaluation of candidacy for fetal surgery or other in-utero intervention; **OR**
- Planning or evaluation of candidacy for complex, assisted delivery (e.g., - EXIT procedure); **OR**
- Planning or evaluation of candidacy for post-delivery neonatal surgery; **OR**
- Complications related to a multiple-gestation pregnancy; **OR**
- Assessment of fetal morbidity of remaining fetus following in-utero death of a co-twin or co-multiple; **OR**
- Maternal placental complication as indicated by **ANY** of the following[5,6]:
    - For cesarean section delivery planning/peripartum hysterectomy planning among patients with **ANY** of the following:
        - Known or suspected placenta accreta spectrum disorder (PAS: placenta increta, placenta percreta, placenta accreta); **OR**
        - At high risk of PAS, including **ANY** of the following:
            - History of cesarean section; **OR**
            - Prior uterine surgery; **OR**
            - Prior or current placenta previa; **OR**
            - Prior placenta accreta spectrum disorder; **OR**
            - Known adenomyosis; **OR**
            - Pregnancy was conceived with assisted reproductive technology (in vitro fertilization [IVF], frozen embryo transfer,

Intracytoplasmic sperm injection [ICSI]); **OR**
                - Advanced maternal age (greater than or equal to 35 years); **OR**
                - Asherman's syndrome; **OR**
                - Prior curettage; **OR**
                - Multiparity; **OR**
            - Known or suspected posterior placenta previa; **OR**
            - Known or suspected placental abruption[7]; **OR**
            - Known or suspected gestational trophoblastic disease; **OR**
            - Known or suspected adnexal lesions; **OR**
    - Evaluation, during pregnancy, of known maternal leiomyoma at high risk of degeneration or rupture, including **ANY** of the following:
        - Submucosal leiomyoma; **OR**
        - Retroplacental leiomyoma; **OR**
        - Leiomyoma which enlarges in the first trimester; **OR**
    - Screening if **ANY** of the following are true:
        - Family risk for inheritable brain abnormalities, including tuberous sclerosis, corpus callosal dysgenesis, or lissencephaly; **OR**
        - Volumetric assessment of fetal lung parenchyma among fetuses at risk for pulmonary hypoplasia; **OR**
    - Repeat imaging with fetal/placental MRI is indicated if **ANY** of the following is true:
        - In-utero fetal surgery or in-utero intervention has been performed and necessitates follow-up imaging; **OR**
        - Serial antepartum imaging is necessary for ongoing planning, management, or evaluation of the fetal or placental condition; **OR**
        - The initial study was limited, incomplete, or of poor quality due to **ANY** of the following:
            - Insufficient gestational age; **OR**
            - Small fetal size; **OR**
            - Atypical fetal position; **OR**
            - Fetal movement that degraded the image of the region of interest.

Non-Indications

➔ **Fetal/Placental MRI** is not considered appropriate if **ANY** of the following is **TRUE**[1-27]:

- If contrast is used, history of anaphylactic allergic reaction to gadolinium contrast media with detailed guidelines for use in patients with renal insufficiency; **OR**
- The patient has metallic clips on vascular aneurysms; **OR**
- Incompatible implantable devices (e.g., pacemakers, defibrillators, cardiac valves); **OR**
- Metallic foreign body in orbits/other critical area(s) or within the field of view and obscuring area of concern; **OR**
- When complete diagnostic information can be obtained by ultrasonography; **OR**
- When used solely to evaluate preterm premature rupture of membranes (PPROM) in the absence of any other indication.

*NOTE: Gadolinium-based contrast is considered to hold unknown risk and potential harm to a fetus and is not recommended for routine administration with fetal/placental MRIs. The decision to use gadolinium in a pregnant patient should be made on an individual basis in consultation with the patient's obstetric provider.[1,12]
**NOTE: MRI in patients with claustrophobia should be requested at the discretion of the ordering provider.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
74712	Magnetic resonance (e.g., proton) imaging, fetal, including placental and maternal pelvic imaging when performed; single or first gestation
74713	Magnetic resonance (e.g., proton) imaging, fetal, including placental and maternal pelvic imaging when performed; each additional gestation (List separately in addition to code for primary procedure)

Medical Evidence

Magnetic resonance imaging (MRI) is used to diagnose anomalies and disorders of the gravid uterus, fetus, and placenta. Because of the detail and enhanced accuracy of MRI, indicated uses in this setting include known or suspected congenital abnormalities, as well as placental disorders and some complications which are present in multiple-gestation pregnancies. MRI during pregnancy is generally reserved for clinical scenarios in which the diagnostic benefit outweighs the theoretical risks to the fetus and pregnant patient.

With regard to the placenta, the primary indication for MRI is clinical suspicion for placenta accreta spectrum (PAS) disorder, which encompasses placenta increta, placenta percreta, and placenta accreta - a series of clinical entities in which the placenta grows abnormally into the wall of the uterus. Prenatal diagnosis of these conditions is critical due to the high morbidity and mortality associated with delivery, which can result in severe blood loss and death. MRI allows for better visualization of the placenta and subsequent planning for delivery, including peripartum hysterectomy.

Prenatal diagnosis of fetal anomalies is also critical due to the expanding roles of fetal surgery or in-utero intervention for some congenital conditions. Congenital diaphragmatic hernia, for example, can be successfully treated in-utero with fetoscopic endoluminal tracheal occlusion to facilitate growth of the fetus's pulmonary system. Where fetal surgery is not indicated, fetal MRI still provides valuable clinical information when planning a complex delivery, strategizing for neonatal management, and counseling patients. Prenatal diagnosis has been associated with improved outcomes and decreased perioperative mortality for certain congenital anomalies, including congenital heart disease.[25]

In 2020, the American College of Radiology (ACR) and the Society for Pediatric Radiology (SPR) published practice parameters to guide the use of fetal and placental MRI.[1] These guidelines formally support the use of MRI imaging of known or suspected fetal anomalies of numerous body systems - including the central nervous system, cardiopulmonary system, and genitourinary system, as well as complications associated with multiparity, assessment for

fetal in-utero intervention, and evaluation of placental disorders. Other medical societies - including the American Heart Association, with respect to fetal cardiac disease - similarly endorse these indications.

The American College of Obstetricians & Gynecologists issued a recommendation that MRI not be used for *initial* evaluation of placenta accreta spectrum disorders, favoring the use of ultrasonography for primary evaluation - a sentiment that is shared by every other medical society cited within this guideline. A 2016 practice overview was published by investigators at Harvard Medical School, which more strongly recommended MRI for evaluation of placenta accreta spectrum disorders - even in cases where ultrasound evaluation was equivocal - in order to plan for peripartum hysterectomy and reduce both maternal and fetal risk of morbidity and mortality.[6] Other maternal indications for fetal/placental MRI include the evaluation of specific leiomyomas (uterine fibroids) that are at high risk of degeneration and rupture, a medical emergency that would endanger both the fetus and maternal patient due to the possibility of hemorrhage or blood flow occlusion. Abnormal levels of amniotic fluid (paucity or excess) are also an indication for fetal MRI when ultrasonography is technically inadequate to image the fetus in these circumstances. A 2023 study at the Cleveland Clinic found that fetal MRI - when used in addition to standard ultrasonography - identified fetal anomalies in more than a quarter of patients, allowing for improved diagnosis and perinatal management.[4]

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