UNC Radiology
Recommendations for Diagnostic Imaging of Pregnant Patients

Preamble:

Imaging of pregnant patients demands extreme care as both the mother (maternal breast) and fetus are at greater risk for radiation induced injury. Also, systemically administered agents (e.g. intravenous iodinated contrast, gadolinium contrast, and nuclear agents) are experienced by the fetus. The intention of the UNC Radiology policy of imaging pregnant patients is to show the utmost care in limiting exposure of ionizing radiation to the mother’s torso and limiting use of intravenous agents and radioactive pharmaceuticals. The following provides recommendations by UNC Radiology on imaging of pregnant patients.

Overview:

1. Females of child-bearing age will be asked if they may be pregnant prior to imaging of the torso or for higher radiation dose procedures. If the patient answers yes, and a pregnancy test is necessary or requested, her urine or serum will be collected and tested for pregnancy. If performed, the pregnancy test will be documented by the technologist.

2. If positive the patient will be imaged according to the policy for Diagnostic Imaging of Pregnant Patients.

3. Prior to ordering any radiologic study in a pregnant patient, the primary physician will write a note in the chart describing the indication for the study and confirming that this was discussed with the patient. Exceptions to this include any study involving body parts above the diaphragm or below the hips, including extremity films. Radiation exposure should be used judiciously and kept to a minimum.

4. Informed written consent for medical ionizing radiation or for MRI will be obtained by a radiologist or radiology resident at the time of the study. Radiation dose will be discussed with the patient and an estimate will be provided, if requested, using data provided by our radiation physicist.

5. A breast shield will be used for all CT studies that involve scanning the mother’s thorax.

Specific clinical situations:

1. Suspicion of obstructing ureteral stone
   a) <24 weeks gestation – limited IVU consisting of scout film, 10 minute film and the minimal number of additional films required
   b) >24 weeks gestation – single pass helical CT per renal colic protocol.
   c) Ultrasound or MRI in selected cases.

2. Upper or diffuse abdominal pain with suspicion of cholecystitis, pancreatitis or pyonephrosis
   a) Ultrasound of the abdomen
   b) MRI of the abdomen. Gadolinium contrast should be avoided in the first and second trimester, and will be used judiciously in the third trimester.
3. Lower abdominal pain with suspicion of adnexal mass, or appendicitis
   a) If ovarian torsion or cyst is suspected, transvaginal US
   b) If a bowel source is suspected, or in complex GU cases, MRI of the abdomen and pelvis. Gadolinium contrast should be avoided in the first and second trimester, and will be used judiciously in the third trimester.
   c) CT may be used in selected cases in consultation with a radiologist.

4. Cancer staging of abdomen and pelvis
   a) MRI, with judicious use of gadolinium determined on a case by case basis.

5. Chest imaging for pneumonia or active maternal tuberculosis
   a) PA plain film of the chest

6. Cancer staging of the chest, diagnosis of pulmonary embolism, other serious chest disease
   a) CT of the chest with appropriate protocol. Iodinated contrast will be employed judiciously.
   b) MRI of the chest for pulmonary embolism with true FISP. Gadolinium contrast should be avoided in the first and second trimester, and will be used judiciously in the third trimester.

7. Maternal trauma
   a) CT-Iodinated contrast will be used judiciously.

8. Neurological studies. Studies performed of regions outside the abdomen and pelvis will be performed in the customary fashion, with the modification that gadolinium and iodine contrast will be employed judiciously. Studies that involve the abdominal–pelvic region (e.g. lumbar spine) will be imaged with MRI.

9. Musculoskeletal Studies. Studies performed of regions outside the abdomen and pelvis will be performed in the customary fashion, with the modification that gadolinium and iodine contrast will be employed judiciously. Studies that involve the abdominal–pelvic region (e.g. lumbar spine) will be imaged with MRI.
   a) Attempt will be made to substitute US, MRI and plain X-rays for CT studies on a case by case basis.

The most updated version of the policy will appear on the UNC Radiology website

Disclaimer:
The above described policy represents the efforts of UNC Radiology to offer diagnostically accurate and safe imaging to pregnant patients in the UNC healthcare system. This policy is not meant to represent a document to be employed for medico-legal reasons either in the UNC healthcare system or other healthcare systems. In all circumstances sound medical judgment supersedes recommendations set forth in this policy. This policy may be updated at any time, and the most current version of the policy will be posted on the UNC Radiology website.