

**Protocol #27** –Maternal Fetal medicine, University of New Mexico

**Appendicitis in Pregnancy:**

**Objective:** Appendicitis is the most common cause of a surgical abdomen in pregnancy (1 in 2,000 pregnancies). It is difficult to diagnosis on a clinical basis with the failure to intervene in a timely fashion having significant morbidity and mortality for the mother and fetus. However surgical intervention during a pregnancy is also with obstetrical risk. The timely and accurate diagnosis of appendicitis in labor is critical.

**Diagnosis:**

History – Few patients complain of constipation.

Clinical – Pain is often generalized with a slight increase in the RLQ. Rebound and guarding are not useful in diagnosis. Temperature can be normal or low grade

Laboratory – Often **no** elevation in white count over the normal background elevation seen in pregnancy.

**Imaging:**

Ultrasound: In the first trimester has high sensitivity and specificity for the diagnosis of appendicitis as well as other causes of an acute abdomen such as ovarian cyst, ovarian torsion, ectopic pregnancy, etc. This sensitivity and specificity however decreases in the second trimester and is much lower in the third trimester.

Abdominal CT:

Currently the amount of radiation exposure during a CT scan is very variable and there is often no standard approach to the amount utilized during a CT scan of a pregnant woman. Abdominal CT in the diagnosis of appendicitis in pregnancy has 92% sensitivity, 99% specificity and negative predictive value of 99%. Radiation exposure from a CT with cause a radiation induced cancer death in 0.04% of all cancer deaths in children exposed.

MRI: Studies do show that this is also effective in diagnosing appendicitis potentially without the radiation exposure. However this test modality is often not available 24/7 and interpretation by a radiologist expert in MRI reading is often not available 24/7. This along with the cost makes MRI currently not the most effective method in such a time critical situation.

Imaging does decrease the negative exploratory laparotomy rate.

A laproscopic appendectomy is associate with a risk of fetal loss of 1.5% in an uncomplicated appendicitis and 35% if rupture has occurred. (Alfozan)

**Recommended Protocol:**

Once a patient presents with abdominal pain and a clinical history concerning for appendicitis a general surgery consult should be made to see if they feel the presentation is classic enough that they do not need imaging studies.

If imaging studies are needed –

- If first trimester or early second trimester consider pelvic ultrasound first, especially if the differential includes adnexal pathology. This minimizes radiation to the fetus early in the pregnancy
- If second (especially late) or third trimester consider going straight to CT scan since this is more helpful and is available 24/7 and easier to interpret by physician staff at night and weekends than an MRI.

If CT scan to be done –

- Ob provider needs to counsel patient on the small risk of radiation induced cancer later in life. They need to realize that obesity in childhood or as an adult is far more likely to result in a cancer related death than 1 CT scan. Also allowing your child to ride in a car increases the risk of childhood or young adult death more than the risk of radiation induced cancer from 1 CT scan. Or only 0.04% of childhood cancers are cause from radiation exposure from a childhood CT scan – 4 in 10,000 children who get cancer from other causes.
- Radiology provider will attempt to minimize the settings for the CT scan to minimize radiation exposure while getting an adequate image.
- Surgical provider will move to operative evaluation if the clinical presentation is compelling enough without requiring imaging.

## References:

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