AAST Acute Care Surgery Didactic Curriculum

Obstetrics/Gynecology

Jamie Knell, MD
Kazuhide Matsushima, MD

The Diagnosis of Surgical Disease and Use of Laparoscopy in Pregnancy

Highlights:

- Appropriate diagnostic tests should not be delayed in pregnant patients as this can lead to unnecessary maternal complications and fetal loss. Earlier diagnosis leads to better prognosis.
- The American College of Obstetricians and Gynecologists state that radiation exposure of <5 rads is not associated with an increased risk of fetal abnormalities or pregnancy loss.
- Standard imaging tests, including a standard "Pan Scan" (CT head, neck, chest, abdomen, and pelvis) and Endoscopic Retrograde Cholangiopancreatography (ERCP) can all be performed with <5 rads of radiation exposure. Techniques, such as placing a lead shield below the patient for fluoroscopy during ERCP or intra-operative cholangiogram can reduce radiation exposure to the fetus.
- Both Hassan entry and Veress entry through Palmer's point are appropriate options. In the late second and third trimesters, the size of the uterus may increase the technical difficulty of laparoscopy. Port placement in laparoscopy should be adjusted based on fundal height.
- Left lateral decubitus or partial left lateral decubitus positioning should be used when feasible to minimize inferior vena cava compression and maternal hypotension and decreased placental perfusion.
- Preoperative and postoperative monitoring of the fetal heart rate for a viable pregnancy should be performed.
- There is no role for prophylactic tocolytics in pregnant patients undergoing surgery. Tocolytics should be used as needed based on the clinical status of the patient.

Acute Appendicitis

- Appendicitis is the most common surgical emergency in pregnancy.
- Rates of fetal loss approach 40% in patients with perforated appendicitis.
- Imaging studies for diagnosis include ultrasound, followed by MRI and, if needed, CT scan.

- The utility of non-operative management for acute appendicitis remains unknown in pregnant women. Laparoscopic appendectomy is considered as the mainstay of treatment.

Biliary Disease

- Pregnant patients have higher rates of biliary disease due to weight gain, biliary stasis, and hormonal changes.
- The majority of pregnant women who present with biliary colic will have recurrence of symptoms, many of them during the same pregnancy.
- The most recent data suggests that cholecystectomy should be considered in pregnant patients, particularly during the first and second trimester with symptomatic cholelithiasis to reduce the risk of recurrent hospitalization, preterm deliveries, fetal morbidity, and development of complications such as gallstone pancreatitis.
- Classically, the second trimester has been considered the optimal time for cholecystectomy, but more recent literature suggests laparoscopy is safe in all trimesters.
- Compared to non-operative management, laparoscopic cholecystectomy is associated with a lower risk of maternal and prenatal complications in pregnant patients with acute cholecystitis.
- Cholangitis requires urgent treatment and diagnosis can be confirmed with Magnetic Resonance Cholangiopancreatography (MRCP), which has been shown to be safe in pregnancy if ultrasound is unable to confirm the diagnosis.

Small Bowel Obstruction

- Small bowel obstruction in pregnancy is associated with higher rates of mortality than in non-pregnant patients.
- Most bowel obstructions in pregnancy are caused by adhesions, but volvulus can occur in up to 25% of patients compared to 5% of the non-pregnant population.
- Management should be the same as in non-pregnant patients, with the majority responding to conservative management with bowel rest and nasogastric decompression.

Tubo-ovarian Abscess (TOA)

Highlights:

- The majority of patients can be managed with antibiotics alone if they are hemodynamically stable without evidence of rupture. Antibiotic regimens should include treatment for sexually transmitted pathogens.
- Abscesses greater than 7 cm typically require drainage.
- In post-menopausal patients, there are high rates of malignancy. Frozen section should be taken intra-operatively and if malignancy is found, a full staging procedure should be performed.
- Ruptured TOA can lead to sepsis and shock and requires urgent percutaneous or surgical drainage.

- Surgical intervention includes removing as much of the abscess cavity as possible and abdominal wash out. Fertility preservation should be considered in pre-menopausal patients. Total abdominal hysterectomy with bilateral salpingo-oophorectomy can be considered in post-menopausal patients.

Ovarian Torsion

Highlights:

- Ovarian torsion can occur at any age, including in neonates and children, but is most common in reproductive age women.
- The presence of an ovarian mass increases the risk of torsion.
- The imaging modality of choice is ultrasound. MRI and CT scan are rarely utilized.
- Ovarian torsion requires surgical intervention to reduce torsion of the ovary and restore blood flow, prevent necrosis, and prevent adhesions.
- Ovarian necrosis is rare and most torsed ovaries should be considered potentially viable. Resection should be reserved for patients in whom malignancy is suspected.
- Surgical intervention includes detorsion and cystectomy if a benign mass is present.
- If malignancy is suspected, salpingo-oophorectomy should be performed. Pre-operative tumor markers, ultrasound findings and intra-operative frozen section should be utilized when possible.