Surgical emergencies in pregnancy

POS rounds

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Objectives

• Discuss implications of pregnancy and surgery
• Outline physiologic changes in pregnancy and their implication in surgical presentations
• Discuss common general surgical, traumatic and obstetric emergencies
Discussion

- Two patients involved in the medical assessment
- Altered physiology of pregnancy may present challenges to diagnosis and treatment
Physiologic

- Hematological
- Cardiac
- Respiratory
- Gastrointestinal
- Renal
Hematological

- Plasma volume increases by 45%
- Red blood cell mass increases by 20-30%
- Relative leukocytosis (12,000-14,000)
- Hypercoagulable (increased factor I fibrinogen, VII, VIII, IX, X, decreased protein S)

- Result
  - Significant blood volume loss may occur before tachycardia and hypotension signal pathology
  - Leukocytosis may mislead to diagnosis of nonsurgical infection (pyelonephritis)
  - Hypercoagulability risk for DVT and PE
Cardiovascular

- Increased cardiac output by 30-50%
- Increased HR
- Lower SVR
- Lower BP
- Result:
  - Larger cardiac silhouette on CXR
  - EKG changes q in III and AVF
  - Shift in qrs to left axis
Respiratory

- Increased O2 Consumption
- Increased resting ventilation
- Increased tidal volume
- Respiratory alkalosis

- Result:
  - Lowered pCO2 causes dyspnea of pregnancy
GI

- Decreased GI motility
- Constipation due to decreased transit time
- Decreased LES pressure
- Reduced acid secretion
- Laxity of abdominal muscles
- Cholestasis

**Result:**
- Constipation
- Nausea and vomiting
- GER
- Lower symptomatic PUD
Renal

- Dilatation of ureters and renal pelvis: hydroureter
- Bladder expansion
- Diminished ureteral peristalsis
Challenges

- Diagnostitic
  - Altered presentation
  - Delayed diagnosis
  - Fetal
    - Risk of imaging
    - Medication C/I
Diagnostics

• Acog
  - Exposure to less than 5 rad not associated with increased fetal anomalies or loss of pregnancy
  - Concern of high dose radiation should not supersede necessary imaging for diagnosis and treatment
  - When possible use low risk investigations U/S and MRI
Management

- ABC, vitals, bloodwork
- Fetal Monitoring
  - Recommended for 24 wks gestations and above
- Analgesia
  - Avoid ASA and NSAID
  - Narcotics may be used
  - Antibiotics as needed
    - Clindamycin, penicillin and cephalosporins (not cefaclor or cephradine) considered safe.
Emergencies

• Surgical
  - Appendicitis
  - Bowel obstruction
  - Hepatobiliary
  - Pancreas

• Obstetric
  - Ectopic
  - Previa
  - Abruptio
  - HELLP
  - Myomas

• Urologic
Appendicitis

- Most common nonobstetric surgical emergency
- 1/7550 to 1/3000
- Occurs more often in 2nd and 3rd trimesters
- Challenging diagnosis
  - N,V leukocytosis already present
- High risk
  - Diagnostic delay leads to fetal loss and preterm labour
  - Fetal losses up to 36% in perforation
Appendicitis

- Pain may be either classic presentation or upward from RLQ in 3rd trimester
- Fever has often been found to be absent.
- Laboratory confusion
  - Leukocytosis
- U/S
  - 86% sensitivity
  - May consider helical CT
    - 15 minute protocol.
    - 0.3 RAD exposure
Cholecystitis

- 2nd most common non-obs emergency.
- 50% women develop Sx of gallbladder disease
  - 20% eventually have major complications
- Present similar to non-pregnant Pts.
- Ddx challenging
  - HELLP, pneumonia, appendix
  - Lab values may not help
    - ALP already up
    - WB?A already up
    - Bilirubin and lipase helpful
- U/s for diagnosis
Cholecysititis

- **R/o HELLP**
- **Acute cholecystitis**
  - Initial: conservative, fluids hydration, analgesia, ABX
  - May delay surgery in biliary colic
  - Unresponsive acute cholecystectomy should undergo surgical treatment
  - Recently laprascopic procedure demonstrated to be safe.
Small bowel obstruction

- 1/1500-3000 pregnancies
- Etiology
  - Adhesions 60-70%
  - Volvulus 25%
  - Hernia cancer, intussusception
SBO

- Often delayed diagnosis
- Due to confounding Sx
  - Cramping, nausea, constipation, vomiting
  - Gravid uterus affect tympany and girth
  - May have absence of peritoneal signs
- Diagnosis
  - ABDseries
  - CT if still unsure
SBO

- Treatment
  - Decompression
  - Bowel rest
  - Fluid, lytes
  - Surgery for
    - Perforation
    - Failed medical tx.
    - Fetal mortality approaches 25% maternal mort. 6% laparotomy is performed.
Adnexal torsion

- 7-28% of pregnancies
- Diagnosis
  - Sudden lower abd pain, colicky with radiating to back or flank
  - U/S
  - Usually mass around 5cm or more in diameter
  - May be missed in 3rd trimester
  - Doppler may help identify tortuous flow vs. cyst
- Tx:
  - Laparoscopy 1st trimester
  - Laparotomy in 2-3rd trimester
  - Cystectomy or oophorectomy
HELLP

- microembolic fibrin
- periportal necrosis
- Hepatic rupture surgical emergency
- Can present with high fetal mortality.
- Adenomas in pregnant Pt. At risk from tumor rupture
- OCP associated with hepatic adenomas
- Confirm with U/S or CT
- May consider angio
Perinephric Psoas abcess

- Pyelonephritis 1-2% of all pregnancies.
- Fever N/V CVA pain
- Diagnosis
  - U/A, culture
- Abcess
  - Persistent flank pain
  - Prolonged fever
  - Failed Abx
  - May have obstruction
- Dx
  - MRI
Renal

- Renal cortical abscess
  - Secondary to hematogenous spread
- Spontaneous rupture of hydronephrotic kidney is indication for surgical tx
Summary

- Difficult to diagnose surgical emergencies
- Radiation concerns should be considered with reason
- Consequences of missed surgical diagnosis warrant appropriate work up, vigilance.
- Consequences of missed diagnosis should be considered when deciding to operate.