Pitfalls in the First Half of Pregnancy

Charlotte Page Wills, MD
Associate Program Director
Alameda Health System-Highland Hospital EM Residency, Oakland, CA
Associate Clinical Professor of Emergency Medicine
University of California, San Francisco School of Medicine
10 weeks pregnant
Severe abdominal pain and vaginal bleeding
BP 70/30   HR  130  RR 22  O2 98% POC glu 98
ETA 3 minutes
Ectopic Pregnancy

Pregnant + Bleeding + Pain = Ectopic
Goals!

• Go beyond the basics, and highlight diagnostic challenges with uncommon types of ectopic.

• Raise awareness of when pregnancy may make common complaints and conditions more dangerous.

Ectopic Pregnancy in 2014

• Increasing rates of EP with increasing rates of STIs.
• 1.5-2% of pregnancies
• Mortality 0.5/1000 pregnancies.
• Remains the cause of 6% of maternal deaths.
Ectopic Pregnancy
Bleeding
Pain
Ectopic

Visit 1
Pregnant
Pain
Visit 1

- Normal vital signs
- No bleeding
- Mild suprapubic tenderness

Pain

WBC 8K
Hgb 11.9

WBC 10-20
+ LE
Visit 1

Pregnant Pain

cervical ectopic
Ectopics Hiding Near the Uterus

- More difficult to diagnose - both can appear intrauterine.
- More likely to cause catastrophic bleeding.
- Higher rates in ART patients.
Cervical Scar Ectopic

- Embryonic implantation at the site of a cesarean section scar in the lower uterine segment.
- ULS: uterine cavity and cervical canal empty.
- Complications include massive bleeding, uterine rupture, hysterectomy - early in the first trimester.
Heterotopic Pregnancy

- 1 in 4,000 pregnancies
- 1 in 100 pregnancies in patients using assisted reproductive technology
  - cervical
  - ovarian
  - abdominal
  - cornual

Gestational Sac Pitfalls

- Pseudo-gestational sac
- Irregular shape
- Lack of decidual reaction
Scan Transabdominally: Free Fluid
Avoiding Ultrasound Pitfalls

• Make sure you are oriented correctly!
• Find the uterine cavity.
• Find the endocervical canal.
• Always look in the adnexa and ovaries.
• Look for free fluid.

14 weeks pregnant
Headaches and nausea, GCS 15, no weakness
BP 146/90 HR 120 RR 22 O2 98% POC glu 80
ETA 5 minutes
More Volume Under Less Pressure

Vital Signs

- Blood pressure: decreases 10-15 mm Hg
- Heart rate: increases 10-15 bpm
- SVR: decreases by 10-15%
- Cardiac output: increases by 30-50%
- Blood volume: increases by 30-50%
- Hematocrit: decreases to 32-34%

Cardiovascular Changes

Maternal Cardiovascular Changes

Maternal Intraocular Volume Changes
Respiratory Changes

- Alveolar ventilation
- Minute ventilation
- Tidal volume
- Respiratory rate

Weeks Gestation

Percentage change (%)

Pregnant
Vomiting
Nausea
Vital Signs
Pyelonephritis

- May complicate 2% of pregnancies.
- Asymptomatic bacteriuria occurs in a third.
- E.coli, Klebsiella, Group B strep.
- Crucial to culture the specimen and know local resistance patterns.
- Treatment: avoid quinolones.
- Disposition: frequently admitted.
Pneumonia

• Incidence is the same but the complications are worse.
• Organisms are the same.
  – *S. pneu*mo
• Tendency to avoid imaging which then delays diagnosis/treatment.

High Risk Pneumonia

• *Varicella*
  – Higher rates of morbidity and mortality; complications to the fetus
• *Influenza*
  – High rates of respiratory failure
• *Coccidiomycosis*
  – Higher rates of dissemination
Influenza and H1N1

- Increased susceptibility.
- Increased complications.

<table>
<thead>
<tr>
<th>Seasonal influenza vaccine in 2008-09 season</th>
<th></th>
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<tbody>
<tr>
<td>Yes</td>
<td>3 (9%)</td>
</tr>
<tr>
<td>No</td>
<td>19 (56%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>12 (35%)</td>
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Antiviral drugs
- Oseltamivir*: 17 (50%)
- Started within 2 days of symptom onset: 8 (24%)

Table 1: Characteristics and reported treatment of 34 pregnant women with pandemic H1N1 influenza virus infections in the USA, from April 15 to May 18, 2009

Appendicitis

- Perforation rates increase with trimester
- 9% > 13% >26%
- Unreliable exam: displacement of the normal position of the appendix.
- Labs generally unhelpful.
- Associated morbidity and mortality to the fetus with rupture.
Pregnant
Headache
Nausea
Visit 1

- Hypertensive
- Intermittent bleeding
- Severe nausea and vomiting

Pregnant

WBC 8K
Hgb 11.9
trace prot
One More Lab

βhCG: 364,356
Pregnant

Headache Nausea

Molar Pregnancy

Gestational Trophoblastic Disease

• Hydatiform mole
• Invasive mole
• Choriocarcinoma
• Trophoblastic tumor
Moles in the ED

• One of the few causes of pre-eclampsia occurring prior to 20 weeks.

• Should be suspected with:
  • new onset hypertension
  • very elevated hCG levels
  • abnormal ULS
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