Rap #9, 05/16 Regions Rap Summary (OB/GYN)

Saturday, April 23 2016, 10:46 AM

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Trauma in Pregnancy (Core EM 12/15/16, Authored by Anand Swaminathan)- Reviewed by Kendal Farrar

- Trauma: Leading cause of maternal death in US.
    - 5% of all trauma patients
    - Car accidents account for most of these patients
    - Assault and domestic violence accounts for almost 25%!!! Be on the lookout
- Physiologic changes in pregnancy affecting trauma patients:
    - Cardiac output increases
    - HR goes up 10 to 15 BPM
    - Systemic vascular resistance falls. Decrease of systolic and diastolic by about 10mm Hg
    - Plasma volume increases by about 50%, leading to dilutional anemia
- Take home points
    - Uterine compression of the IVC can significantly decrease venous return.
        - Tilt patient to left lateral decub
        - OR manually displace uterus to the left side
    - Uterus pushes up on thoracic cavity.
        - Decreases lung volumes/functional residual capacity.
        - Oxygenation can be more difficult, particularly when pre oxygenating and then intubating. Safe apnea time will be decreased
        - If you can, keep these patients sitting up instead of flat on back (or reverse trendy) when pre oxygenating (and in general)
        - Have a smaller ET tube available, as you should expect airway edema
        - Lower esophageal sphincter tone and growing uterus makes vomiting and aspiration more likely. Be aware.
    - Growing uterus displaces internal organs and changes injury pattern
        - Liver, spleen, bladder more likely to be injured
    - Baseline hemodilution/physiologic anemia of the pregnant patient
        - Pregnant women can lose 45% of their circulating blood volume without mounting a tachycardia
        - Low threshold for transfusion of blood products
    - Trauma to the fetus
        - Shearing forces that separate placenta from uterus can decrease fetal oxygenation
        - Abruption is somewhat common
            - 8 to 13% of patients!
        - Early involvement of Ob/Gyn for fetal monitoring
    - Radiation
        - Max dose of all imaging you might want (CXR, pelvic XR, CT head, c spine, chest/abd/pelvis) is just above teratogenic threshold
            - Nice link with radiation doses of common imaging
        - In cases of significant trauma, don't let fear of radiation stop you from imaging
    - Perimortem c-section
        - Think of it as a resuscitative hysterotomy.
        - Improves mom's venous return and oxygenation
        - Potentially take a mortality of 200% and make it 100%
- **Evaluation**

- Air Grade:

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Your Score	3		7		7		5		1

Early OB (FOAMCast Episode 9, Authored by Jeremy Faust & Lauren Westafer) - Reviewed by Brian Hahn

- Podcast review of EMCrit Episode #3
  - ACEP's Clinical Policy on 1st Trimester Vaginal Bleeding
    - Discriminatory Zone depends on imaging modality
    - Previously used to determine whether or not imaging would be indicated
    - Guidelines now state if there is no documented IUP on a prior ultrasound, an ultrasound is indicated
    - Ectopics may have bHCG that are lower than expected and therefore cannot rule out ectopic based on bHCG level alone
    - If you cannot see intrauterine pregnancy on bedside ultrasound, a formal ultrasound read by radiology should be obtained, if this is indeterminate, then either consult OB or ensure close OB follow up
  - Methotrexate Administration
    - Should be given either by OB in ED or on floor by OB
      - This is an abortive treatment and should not be done by an emergency provider alone
    - They need to have very close follow up, full explanation of medication and what to expect, which may not always be done correctly by ED provider
    - Determining location of pregnancy can sometimes be difficult early on, another reason why OB should be involved if considering methotrexate
- Accompanying blog post covers some good core topics including:
  - Causes of 2nd/ 3rd trimester bleeding
    - Abruption
    - Previa
  - Non-OB causes of abdominal pain in pregnancy
  - Infectious OB-related topics
    - Septic abortion
    - Chorioamnionitis
  - Pre-eclampsia/ Eclampsia
- **Evaluation**

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Your Score	3		7		7		6		7

Post-Partum Hemorrhage (EM in 5, 7/7/14, Authored by Anna Pickens) - Reviewed by Liz Roeber

- Postpartum Hemorrhage (PPM) Definition
  - >500 ml blood loss
  - Hard to measure
- Post Partum Hemorrhage Management
  - Don't be a cowboy if you have the choice, consult OB early
  - 2 large bore IVs
  - Labs
  - Type & Screen
  - Massive transfusion protocol
  - Other specific steps below
- Causes (4 Ts)
  - Tone:
    - uterine atony
    - Accounts for ~70% of PPH
    - Management
      - Uterine massage
      - **Pitocin 10-40 units in 1 L NS at 200-500 ml/hr or 10 U IM**
        - Prevents up to 40% of PPH
      - Cytotec 1000mcg rectal
      - Bimanual uterine massage
  - Tissue: retained placenta
    - Try to prevent by controlled delivery of placenta by slow gentle traction on umbilical cord
  - Trauma:
    - Lacerations
    - Hematomas
  - CloTTing:
    - DIC, TTP, ITP, HELLP, von Willebrands disease
- Prevention:
  - Control umbilical cord
  - Prophylactic Pitocin - Sources vary as to when to administer
    - After the anterior shoulder is delivered vs after the placenta delivered
  - Uterine massage
- Timing of stages of delivery:
  - It is considered normal for stage three of labor (delivery of the placenta) to take 10-30 minutes.
  - PPH is more common in the 4th stage of labor (1st hour after placental delivery)
- **Evaluation**

- Air Grade:

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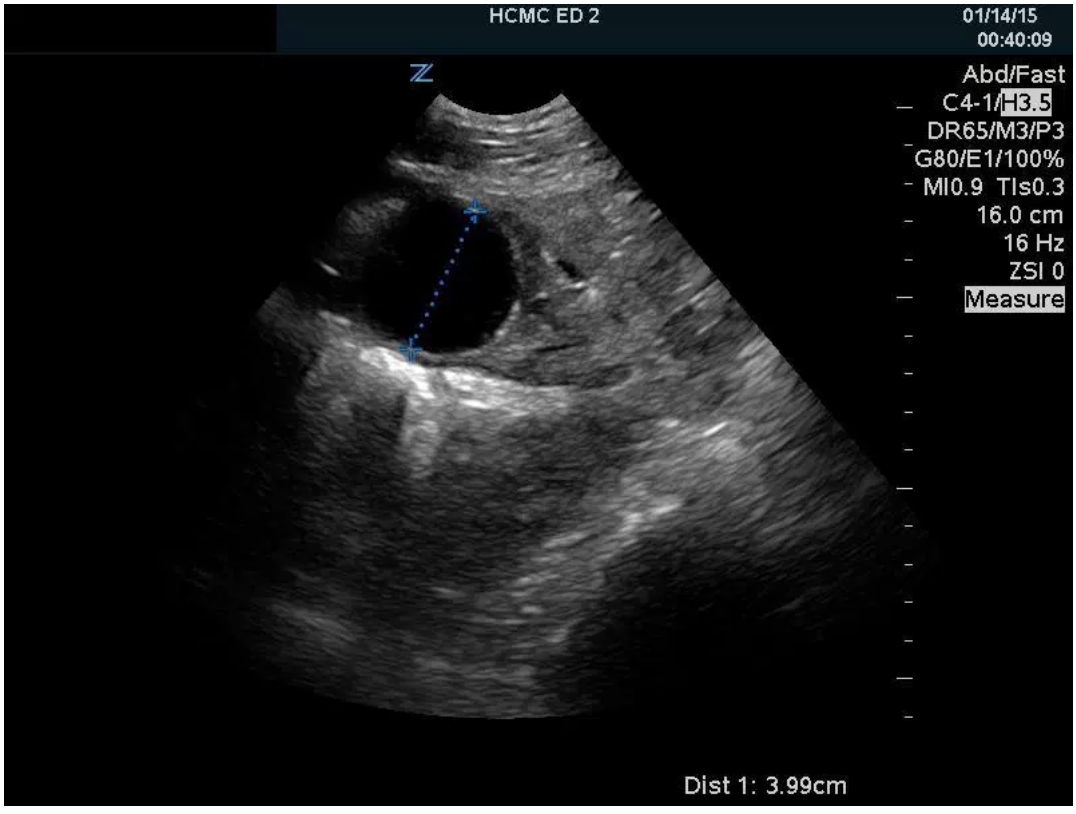
Your Score	5		6		4		5		6

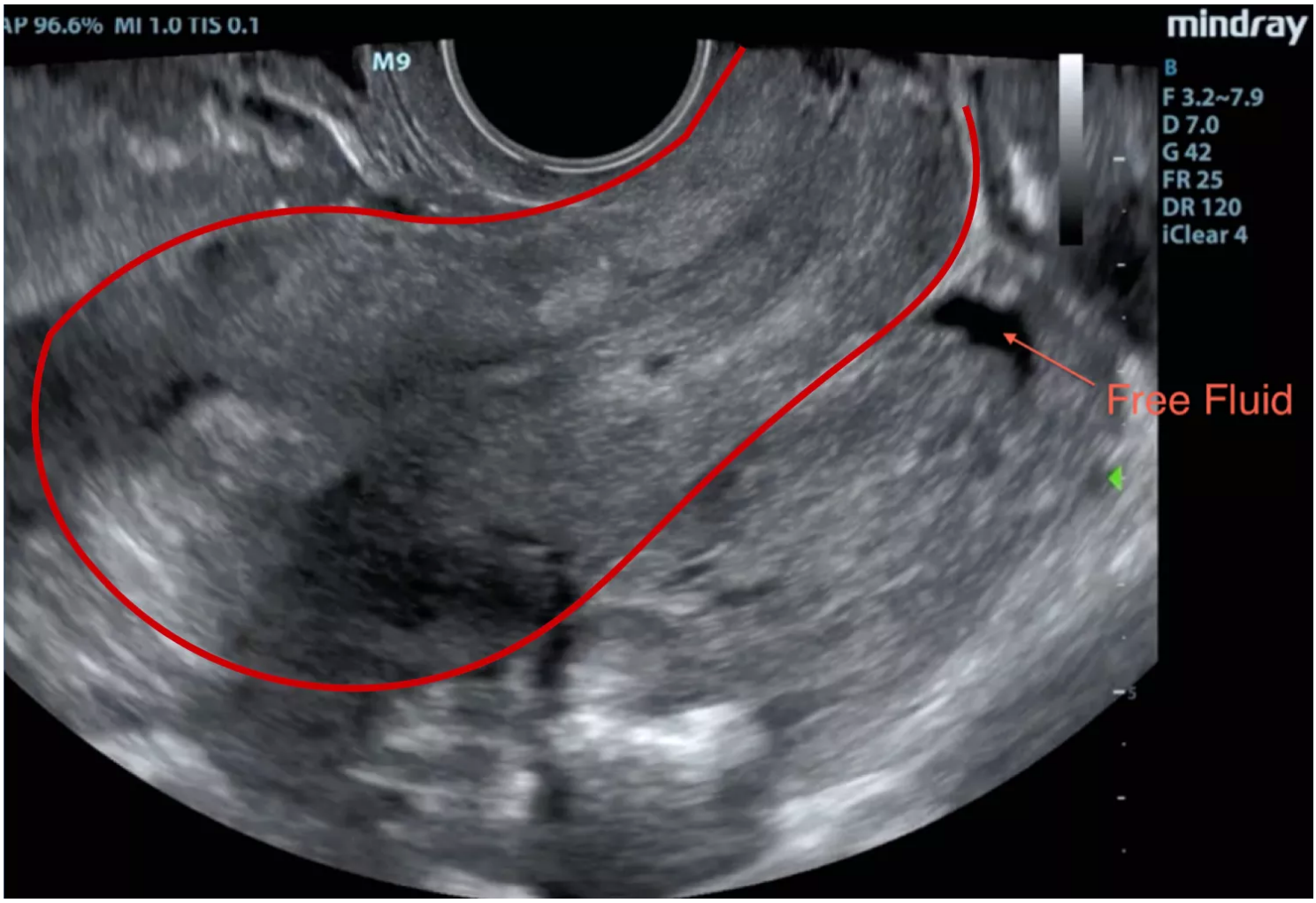
Ectopic v Torsion (Hennepin Ultrasound 4/13/15, Authored by Andie Rowland-Fisher) - Reviewed by Maria Bergstrand

- Patient Info:
  - 36 yo F w/ 4 days of LLQ pain, acutely worsening one hour prior to arrival
  - LMP 23 days prior
  - No associated symptoms
  - Initial VS: BP 123/86, HR 86, T 97.7 F, RR 19, SpO2 100% on RA
  - Exam: Uncomfortable appearing, exquisite LLQ tenderness
- ED Course:
  - History & Physical
  - Bedside pelvic US showing large left ovarian cyst, no free fluid in pelvis
    - Concern for torsion



  - Lab work, fluids, pain meds
  - Lightheaded when standing for urine sample

- Bedside RUQ US showing free fluid
  - Now concern for ectopic



  - Consulted OB/GYN
  - Bedside transvaginal US showing clot around uterus and small free fluid
  - UPT returned positive
  - To OR with OB/GYN
    - Left-sided ectopic, salpingectomy, 3 L blood evacuated

- Learning Points:
  - Consider obtaining hepatorenal view on all patients with suspected ectopic
  - Free fluid in hepatorenal space in pregnant women is highly suggestive of ectopic

- **Evaluation**

- Air Grade:

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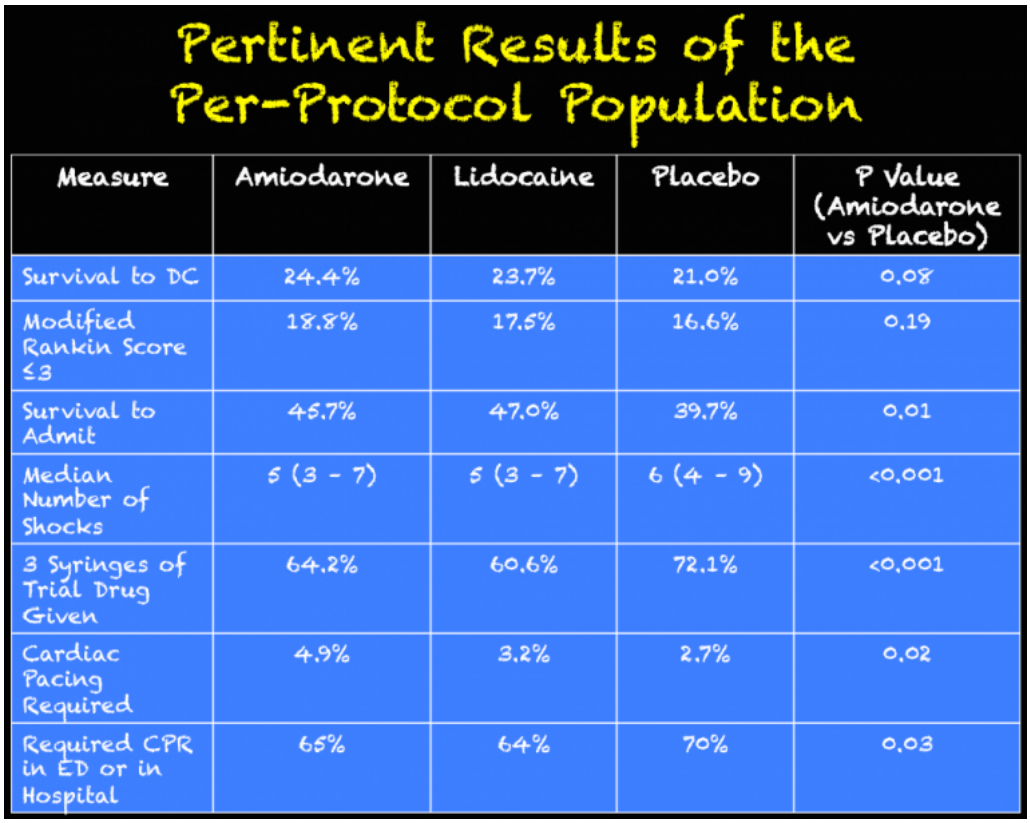
Your Score	4		5		3		4		5

ALPS Trial (REBEL EM 4/25/16, Authored by Salim Rezaie) - Reviewed by Mark Bergstrand

- Background
  - Amio and Lido are both recommended by ACLS for refractory VF or pulseless VT
  - Previous studies: Amio more likely to have ROSC and survive to *admission* than Lico or placebo (no source cited)
  - Amio effect on survival to *discharge* or neurologic outcome not established
- The Study
  - Kudenchuk PJ et al. Amiodarone, Lidocaine, or Placebo in Out-of-Hospital Cardiac Arrest. NEJM 2016.
  - Randomized, double blinded, multicenter, North America, 3k pts
  - The Drugs:
    - Amio 300mg IV (150mg if <45.4kg) or
    - Lido 120mg IV (60mg if <45.4kg) or
    - Normal saline IV
  - Inclusion/exclusion
    - Must be: shock refractory VF/pVT, at least one shock delivered before enrolment, IV access
    - Must not: already have received Amio/Lido open-label, known allergy to Amio/Lido, Known advance directive
    - Protected population (kid, pregnant, prisoner)
  - Outcomes
    - Primary: survival to hospital discharge
    - Secondary: Favorable neuro function at d/c (mod Rankin ≤3)
- Results/ Discussion
  - Strengths: DB-RCT, 99.5% f/u, groups well matched
  - Limitations: powered for 6% difference in survival to d/c, selection bias possible, avg time to treatment was 19min
  - Primary endpoint: Survival to d/c in study group Amio & Lido 24% vs 21% w/ Placebo (p=0.08)
  - Subgroup: Survival to d/c w/ witnessed OHCA: Amio & Lido 28% vs 23% w/ Placebo (p<0.05)
  - Amio/Lido also required fewer shocks, less need for subsequent CPR or antiarrhythmics after admission



Pertinent Results of the Per-Protocol Population

Measure	Amiodarone	Lidocaine	Placebo	P Value (Amiodarone vs Placebo)
Survival to DC	24.4%	23.7%	21.0%	0.08
Modified Rankin Score ≤3	18.8%	17.5%	16.6%	0.19
Survival to Admit	45.7%	47.0%	39.7%	0.01
Median Number of Shocks	5 (3 - 7)	5 (3 - 7)	6 (4 - 9)	<0.001
3 Syringes of Trial Drug Given	64.2%	60.6%	72.1%	<0.001
Cardiac Pacing Required	4.9%	3.2%	2.7%	0.02
Required CPR in ED or in Hospital	65%	64%	70%	0.03

- **Evaluation**
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