Rare Obstetric Emergencies: Diagnosis and Immediate Response

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Objectives

• Identify at least one rare obstetrical condition that might occur during pregnancy.
• List the proper investigative tools in diagnosing these rare conditions.

Case # 1

• 31 y.o. female G2 P 1001 prior C/S
• 36 weeks with Severe PIH
  – BP 160/100, proteinuria
• Repeat C/S with incidental cystotomy
• POD # 1 and 2
  – BP returns to normal
  – Normal return of bowel f(x)

• POD # 3 pl ct 38K then 18 K
  – Patient wants to go home
• Perinatology consult
• Platelet transfusion - 40K pl ct
• Weekend
  – Next two days - pl ct 13 K
Question 1: Diagnosis?

1. REALLY severe preeclampsia
2. Immune thrombocytopenia (ITP)
3. Gestational thrombocytopenia
4. Thrombotic thrombocytopenia (TTP)

Case #1

- POD #6
- CNS changes, Cardio-respiratory distress
- Question of PE
- Patient Died

Thrombotic Thrombocytopenia Purpura (TTP)

- Severe multisystem disease
- Unknown etiology
- Peak incidence age 20 - 40 yrs
- More Common in women
- Similar to severe preeclampsia

TTP

- Mortality rate in past 90%
- Diagnosis
  - Micro angiopathic hemolytic anemia
  - Thrombocytopenia 5-100K
  - Fever most cases
  - CNS abnormalities
  - Renal dysfunction
**Treatment of TTP**

- Plasmaphoresis ASAP
- If treated in time:
  - 5-10% mortality
- Two cases since with TTP
  - Treated with Plasmaphoresis
  - Both survived

**Case # 2**

- KB is a 26 yo G4P3003 who was induced at 38+ weeks for PIH.
- NSVD 1300 hr without complications
  - PIH labs normal
- 2100hr onset of RUQ pain
  - PIH lab, hct 37%, plct 191K, AST 82, Cr 1.2

**Case # 2**

- RUQ pain all night
- 0500 hr unable to awaken pt
  - PIH lab, hct 21%, plct 34K AST 1200, mg 11
- Diagnosis?

**Question 2: Diagnosis?**

1. HELLP syndrome
2. TTP
3. Ruptured liver
4. Hemolytic uremic syndrome (HUS)
Case # 2

- Bedside sonogram free fluid around liver
- Dx - Liver capsule rupture
- Taken to OR with Blood

In OR
- 2 liters of blood and clot
- Multiple small hematomas on liver, no frank bleeding
- Taken to SICU where increased need for blood
  - ABD increase in swelling
  - Urine output decreased 2nd to ABD pressure

Reexplored that night
- 2 liters of blood
- Frank liver capsule rupture
  - Liver packed, incision left open with drains
- Pt transported to Trauma center

Trauma Center
- Multiple complications
- Renal failure
- Reexploration for bleeding and infection
- Hospitalized three months, died of line sepsis
Case # 2

- Total blood products
  - PRBCs 64 + 50 = 114
  - FFP 32+
  - Platelets 11+
  - Cryo 8

HELPP and Liver Rupture

- Rare, case reports in literature
  - High Mortality
  - Epigastric pain 70%
  - Hypertension 66%
  - Shock 56%
  - Nausia and vomiting 25%
  - Shoulder pain 21%

HELPP and Liver Rupture

- Barton and Sibai, Am J O&G 1996
  - HELLP and RUQ pain 33 cases
  - 15 (45%) liver finding on CT
  - Subcapsular hematoma -13
  - Intraparenchymal bleed -6
  - 10 of 13 with pl ct < 20K

HELPP and Liver Rupture

- Maison et al O&G 2012
- 9 cases with literature review of 88
- Embolization 7 of 9 cases v. 5 of 88
- Mortality maternal and fetal
  - 0% and 30% Author’s cases
  - 17% and 38% Literature
- Conclusion: Hepatic artery embolization may help minimize morbidity and mortality
Liver rupture

- Respond to RUQ pain
- Check LFT and CBC
  - If HELLP, consider dexamethasone
  - Dex 10 mg q 12 hours x 2, then 5 mg q 12 hours x 2
  - Follow with serial lab
- Watch Mg levels with increased Cr
- Consider embolization with documented rupture

Case #3

- 35 year old G1 P0 at 35 weeks of gestation called office with complaint of fatigue
- In office BP 140/90
- Eyes were “yellow”
- The patient had been to Mexico 3 weeks before visiting family for one week

Case #3

- Prenatal lab negative
- Viral Hepatitis panel pending
- No change in medications or over the counter medications
- Consumed cheese and raw vegetables while in Mexico

Case #3

- In L&D FHR tracing was decreased BTB variability with late decelerations
- CBC normal with Pl ct 78K
- PT and PTT 2-3 times normal
- Fibrinogen 60
- Glucose 45 mg%
- Total Bili  6 mg/dl
Question 3: Diagnosis?

1. Acute viral hepatitis A
2. Acute viral hepatitis B
3. Acute fatty liver
4. Acute Listeria infection

[Bar chart showing percentages]

Case #3

- C/S for fetal indications
- Full blown DIC
- Profound hypoglycemia
- Jaundice resolved in 3 weeks
- Organ system management in ICU for 4 weeks
- Home after 5 weeks recovered

Acute Fatty Liver

- First reported 1940
- 1 in 10,000 to 1,000,000
- Prior to 1980
  - Maternal Mortality 80%
- More recent data
  - Maternal mortality 10%
  - PNM rate 7%

Acute Fatty Liver

- Spectrum of Severe preeclampsia
  - Liver pathology different
- Preeclampsia
  - Increased LFTs
  - Coagulopathy
  - Thrombocytopenia
  - Rarely Jaundice
Acute Fatty Liver

- Historical
  - Third trimester and postpartum
  - Jaundice
  - Coagulopathy
  - Fatty infiltration of liver
  - Encephalopathy
  - More common first pregnancy

Acute Fatty Liver

- Acute Hepatitis
  - Viral A,B,C
  - Drug induced (tetracycline)
  - Heavy alcohol intake
  - AST, ALT marked elevations
  - Laboratory confirmation

Acute Fatty Liver

- Clinical Manifestations
- Prodromal symptoms
  - Malaise
  - Anorexia
  - Lethargy
  - Tachycardia
  - Occasional fever

Acute Fatty Liver

- Liver function tests
  - AST, ALT 100 to 1000 units/liter
  - Bilirubin exceeds 5mg/dl
  - Albumin is low
  - Ammonia elevated
  - Glucose may be decreased
- If survive, LFT normal at 4-8 weeks
Acute Fatty Liver

- Treatment
  - Prompt Delivery
  - Supportive care in ICU
- Delivery mode
  - Depends on fetal and maternal status
- Laboratory
  - 50% of patients improvement by 2nd day
- Supportive care

- Prognosis
  - Maternal survival 90%
  - Fetal survival 53 - 93%
  - Complete recovery
- Case reports of recurrent disease
- Infants should be screened for fatty oxidation disorders

Case # 4

- 24 year old G2 P1001 at term in labor
- While pushing suddenly sits up and passes out.
- Unresponsive – “Code Blue” called
- Anesthesia intubated patient
- OB/GYN performed a forceps delivery

- Despite rapid intubation and ICU management with fluid resuscitation:
  - Full blown DIC
  - Cardiac failure develops
- Diagnosis?
Question 4: Diagnosis?

1. Amniotic fluid embolism
2. Pulmonary embolism
3. Severe Vasovagal syndrome

Amniotic Fluid Embolism

- Historically close to 100% mortality
- Intrapartum or Postpartum
  - Sudden onset hemodynamic collapse
  - Hypoxia, hypotension
  - DIC
  - Fetal distress

Case # 4

- Patient taken off of life support after 8 hours
  - Dies
- Autopsy results demonstrate fetal squamous cells and meconium in maternal pulmonary tree

Amniotic Fluid Embolism

- Mechanisms
  - Amniotic fluid, fetal cells
  - Enter maternal sinuses
  - Pulmonary embolism, vasospasm
  - Hypoxia, Heart failure
  - DIC, tissue factor
Amniotic Fluid Embolism

- Treatment
  - Oxygen
  - Intubation
  - IV fluids and blood products
  - ICU setting

- Outcome - Kramer et al BJOG 2012
  - Population based cohort study
  - 120 cases Dx strict criteria, 2.5/100,000
  - 27% maternal mortality
  - Risk factors: induction, C/S, OVD, uterine or cervix trauma
  - Increased neonatal M&M

Conclusions

- Acute management of organ systems
- Despite best efforts, bad outcomes
- Cause of medical malpractice litigation

- Extremely rare events with potentially devastating consequences if Dx. missed.
- Currently available treatments have improved outcomes.
References


- Creager et al. TTP that is refractory to therapeutic plasma exchange in two patients with occult infection. Transfusion 38:419-23, 1998.