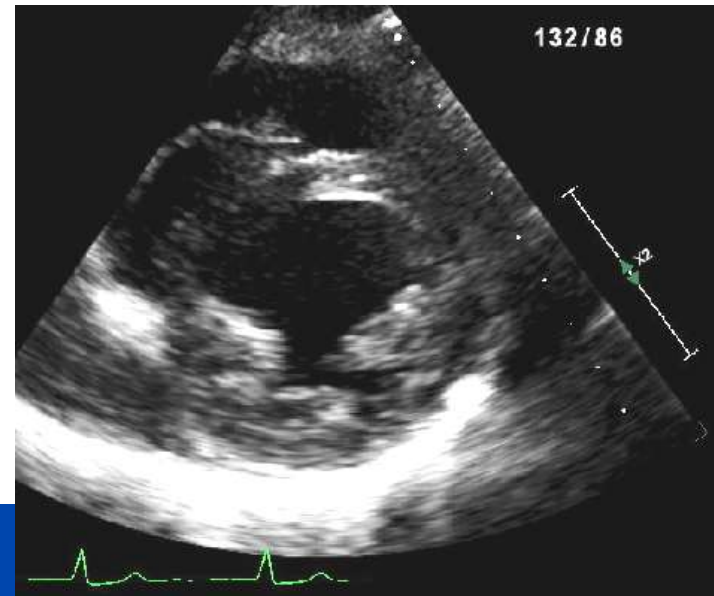




Peripartum Anesthetic Management in Patients with Left Ventricular Hypertrabeculation

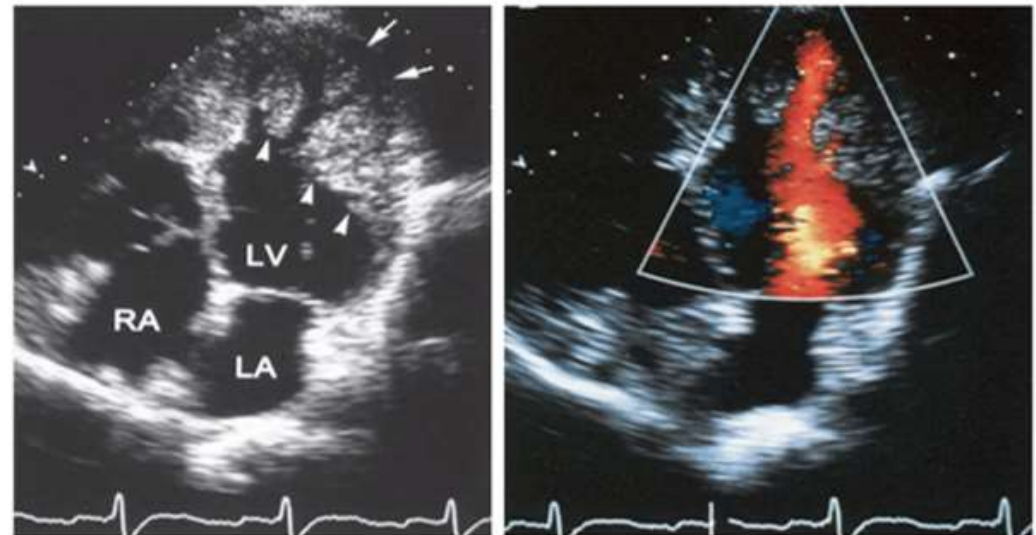
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Cardiac Problems in Pregnancy
Saturday, February 24, 2018, 17:05-17:15



LV Hypertrabeculation (LVHT)

- LV non-compaction
- Cardiomyopathy:
 - Prominent ventricular trabeculations
 - Deep intertrabecular recesses directly communicating with LV cavity
- Heterogenous disorder composed of genetic and non-genetic risk factors



Sarma et al. *Progress in Card. Dis.* 52;2010:264-73.

What trouble does this cause?

- 3 major sequelae
 - Heart failure
 - Arrhythmias
 - LBBB (20-40%), PVCs, VT (7-26%)
 - Thromboembolism
 - Stroke risk 1-2%/yr

Need for additional monitoring?

Type of analgesia?

HOW DOES THIS AFFECT ANESTHETIC MANAGEMENT IN THE PARTURIENT?

Anesthetic choice if Cesarean delivery (CD)?

Post-partum management?

Methods

- Single institution retrospective chart review
 - Women delivering at Mayo Clinic, MN between January 2001 - October 2017
 - Free-text query for terms relating to LVHT
- Only patients meeting full *Jenni* criteria were included
 - Transthoracic echocardiograms were reviewed by board-certified echocardiographer

Jenni
(i) Bilayered myocardium with multiple, prominent trabeculations in end-systole
(ii) NC/C ratio of >2 : 1
(iii) Communication with the intertrabecular space demonstrated with color Doppler
(iv) Absence of coexisting cardiac abnormalities
End-systole

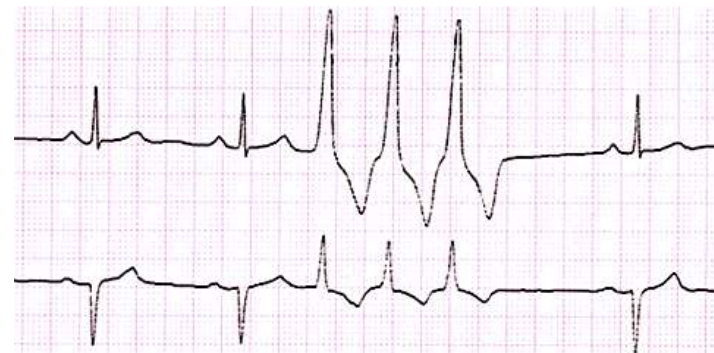
Results

- 5 women met inclusion criteria
 - All 5 met LVHT criteria on MRI as well
- 4/5 LVHT Diagnosis was remote from pregnancy (B-E)
 - Range: 2-7 years prior to pregnancy
 - 2 patients had family history of cardiomyopathy
- 1 patient (A) diagnosed during 3rd trimester
 - Presented with SOB and wide-complex tachycardia on EKG

Heart Failure

- ALL pre-pregnancy NYHA I
- 1 (C) with EF < 55% prior to pregnancy
 - Unchanged with pregnancy
- 1 (D) with baseline EF 58% → NYHA II/III with EF 35% by 3rd trimester
 - No recovery of EF postpartum: CRT-D placed

Arrhythmias



- 3 had PVC/VT Hx (C,D,E)
 - 2 had previous ablations (C,E)
- 1 (C) admitted during 3rd trimester for increased ectopy and coupling
 - Trial of IV lidocaine, D/C with PO mexiletine
 - Delivery uncomplicated
- 1 (A) w/o h/o arrhythmia presented with wide-complex tachycardia at 32 wk GA
 - Progressed to VT Storm despite procainamide and amiodarone infusions

Thromboembolism

- 2 (C,E) on warfarin pre-pregnancy due to arrhythmia history
- 1 (D) started on anticoagulation during pregnancy
 - due to PVCs and decreased EF during pregnancy

None of the patients anticoagulation status precluded possibility of neuraxial analgesia/anesthetic

Mode of Delivery

- 2 NSVD (B,E)
- 1 AVD with forceps (C)
 - due to fetal late decels
- 2 CD
 - 1 Breech (D)
 - 1 maternal indications (A)
- 1 Spontaneous abortion at 17 weeks (E)

Analgesia management

- NSVD
 - Fentanyl only (B)
 - Epidural (E)
 - Test dose: 3cc 1.5% Lidocaine + 1:200,000 Epi
- AVD
 - Nitrous Oxide
- CD
 - CSE (D)
 - General Anesthesia (RSI with DL x1) (A)

Additional Monitors

- All vaginal deliveries had 5-lead EKG during active labor
- Arterial line used in both CD
- CVC with PAC utilized in CD that had maternal indications (A)
- 3 observed in ICU immediately postpartum (A,C,D)

Maternal Complications

- 1 (A) with complications
 - Broken tooth due to intubation
 - Prolonged intubation and sedation (24 hr)
 - recurrent VT if sedation lightened
 - IABP insertion for EF 25% with severe MR (PCWP 20mmHg)
 - pulled after 48 hr
 - Prolonged ICU stay
 - ICD placed prior to D/C

Neonatal Complications

- 1 complication (A)
 - Neonate intubated due to respiratory distress/lethargy
 - APGARS: 1, 5
 - Extubated <48 hours later

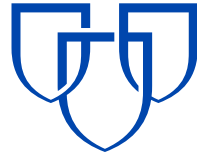
Multidisciplinary Approach

- All patients with LVHT followed by cardiology
 - TTE at baseline and 3rd trimester
- MFM consulted on all patients
- Obstetric Anesthesia consulted on 3 (B,C,D)
 - seen in 3rd trimester

THM

- LVHT patients are at increased risk of heart failure, arrhythmias, and thromboembolism
- Multidisciplinary approach is essential for optimizing outcomes
- Various anesthetic techniques all resulted in positive outcomes

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THANK YOU!