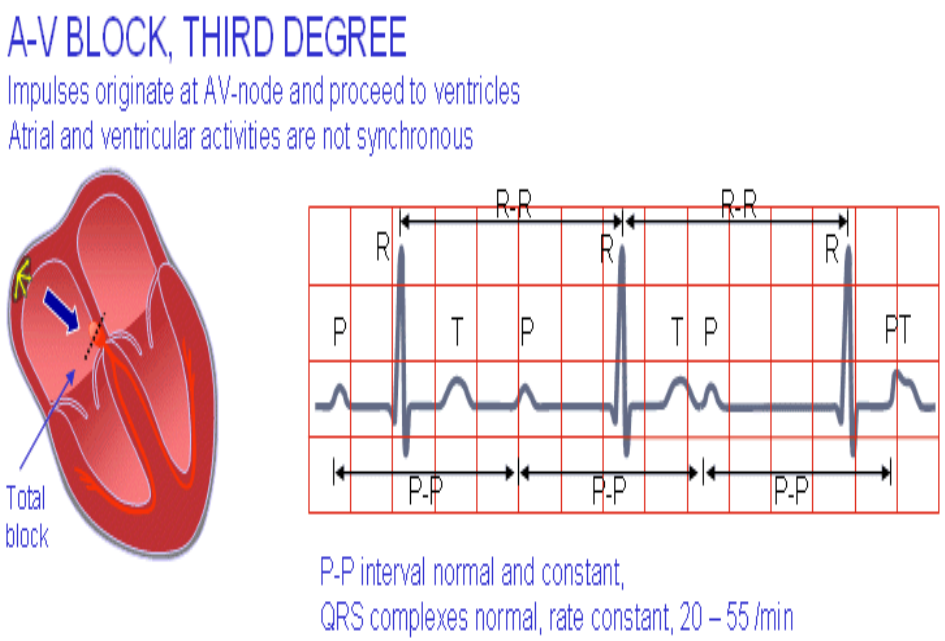
Complete Heart Block in Pregnancy

Keionne Green, M.D., Jakayla Harrell-Mohamed, M.D.
Louisiana State University Health Sciences Center, Department of Anesthesia

Background:

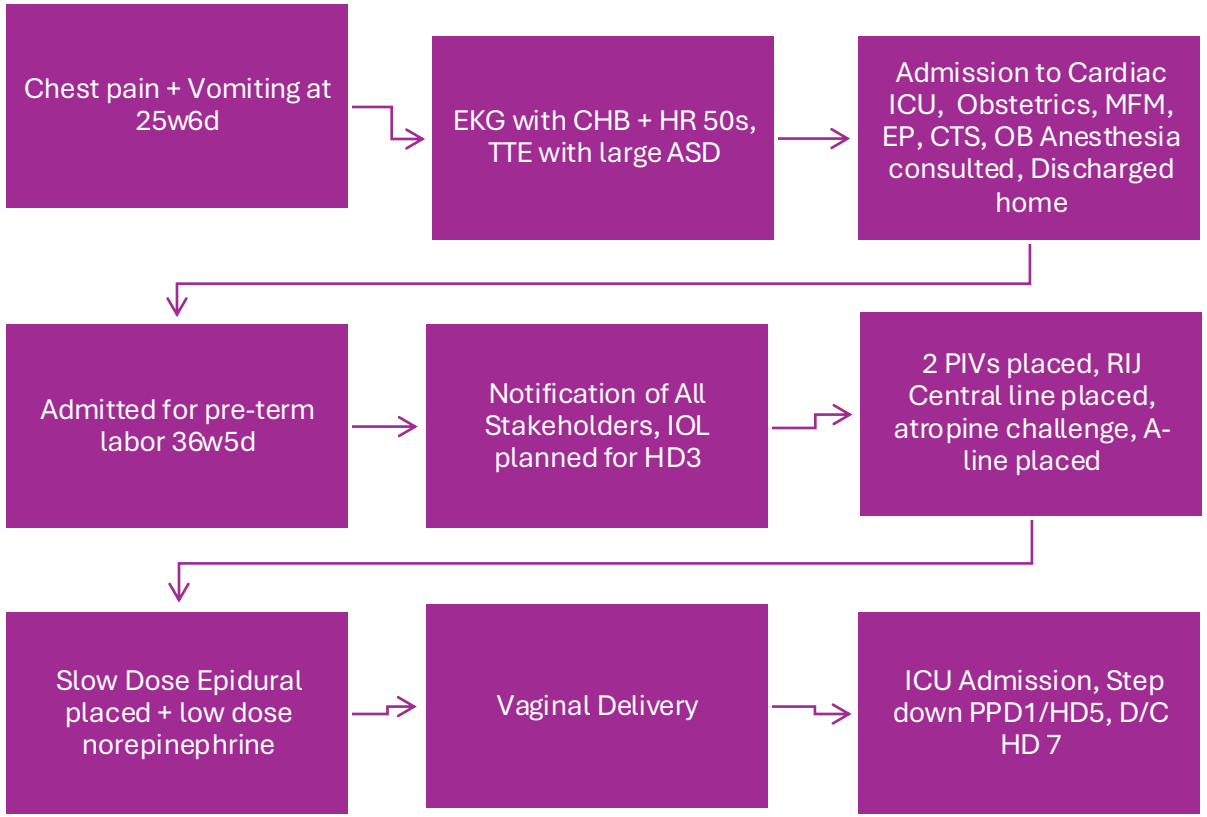
- Complete Heart Block (CHB) is a complete loss of electrical communication between the atria and ventricles
- Without appropriate conduction from SA node to AV node, CHB patients are vulnerable to bradycardia and cardiac output.
- During pregnancy, the increase in cardiac output and increased blood volume can cause complications for patients with CHB.
- Increased blood volume can cause atrial stretch leading to worsening conduction delays and potential decompensation.



LSU HealthNewOrleans
School of Medicine

Case Events

- 28-year-old G5P3103 with large ostium primum ASD, mitral valve anterior leaflet cleft, trivial mitral valve regurgitation
  - PMH: depression, HTN, sickle cell trait
  - EKG revealed complete heart block with HR in the 60s.
  - Holter: Intermittent heart block and rare ventricular arrhythmias.
- Early multidisciplinary meetings involved Obstetrics, MFM, EP, CTS, ICU, and OB Anesthesia.
- Delivery plan: IOL at 35w1d arterial line, telemetry, RIJ central line placement by cardiology, Atropine challenge, Slow Dosed Epidural



LSU HealthNewOrleans
School of Medicine

Discussion

- Pregnancy can unmask subclinical conduction delays in patients with CHB and structural heart disease
- Cardiovascular stress of pregnancy including hypervolemic atrial stretch can lead to serious complications in CHB patients.
- Delivery with an anesthetic can worsen chronotropic compensation and lead to further decompensation.
- Consideration of invasive BP monitoring, avoidance of AV nodal blocking agents, and appropriate venous access including options for potential pacing can help improve outcomes during delivery.
- An arterial line for close BP monitoring and a central line for potential transvenous pacing should be considered.
- Early coordinated care and multidisciplinary discussions are essential to optimize outcomes for mother and baby.

References:

1. Knabben V et al. (2025) Third-Degree Atrioventricular Block.
2. Agarwal A et al. (2023) A Comprehensive Review of Managing Pregnancy in Complete Heart Block Cases.
3. Meng, Marie-Louise M.D.et al. (2021) Obstetric Anesthesia and Heart Disease: Practical Clinical Considerations. Anesthesiology