

Medical Management of Congenital Heart block: A Multi-Disciplinary Approach

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Background

Complete heart block (CHB) = Third-degree AV block
P waves & QRS complexes rhythmically dissociated

Incidence of congenital CHB = 1 in 15,000
Junctional escape rhythm maintains CO when atria & ventricles are not conducting impulses to each other

Rate-limited non-sinus rhythm makes it difficult to compensate for the physiologic changes of pregnancy (eg, ↑ plasma volume)

Case Presentation

32 year-old with CHB presented at 14 weeks gestation for pre syncope and HR 20-30s

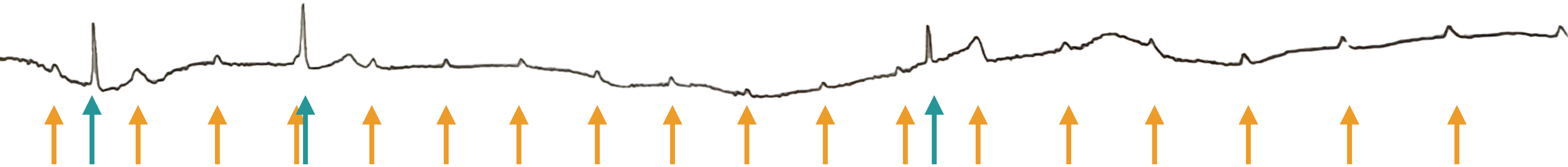
Dopamine infusion x 2 days → ↑ HR
Associated with flushing, nausea, vomiting
“Pacemaker deferred given normal chronotropic response to activity and radiation in pregnancy”

Admitted at 37w3d for IOL



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Early labor contraction → Nausea & Retching → Vagal response → Transient asystole → Syncope → Fetal decel (recovered with resolution of contraction)

Patient concern for prolonged labor course + Elevated BPs in setting of improved chronotropy → Intrapartum C/S

Aprepitant, Arterial line and Isoproterenol gtt (1mcg/min) → Improved maternal hemodynamics (HR 50-60s)

Neuraxial placed. Hemodynamics stable throughout perioperative period on Isoproterenol & Phenylephrine gtt

Uterine tone adequate with Oxytocin: EBL 515mL



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Discussion

Pacemaker placement is *not* contraindicated in pregnancy

Although a PPM would have improved hemodynamics though the peripartum period, a β agonist infusion can provide chronotropic support

Treatment options for unstable bradycardia:

1. Pharmacologic (chronotropic) support
2. Cutaneous or Transvenous pacing

Dopamine is an ideal first line chronotropic agent:

- Safe to administer peripherally
- Provides a modest increase in HR
- Caution with uterotonic properties ¹

Isoproterenol also increases ventricular rate, but has tocolytic properties ²

The uterine effects of both Dopamine and Isoproterenol are reportedly reduced with Oxytocin infusion

1: PMID 7082602 2: PMID 21839632

