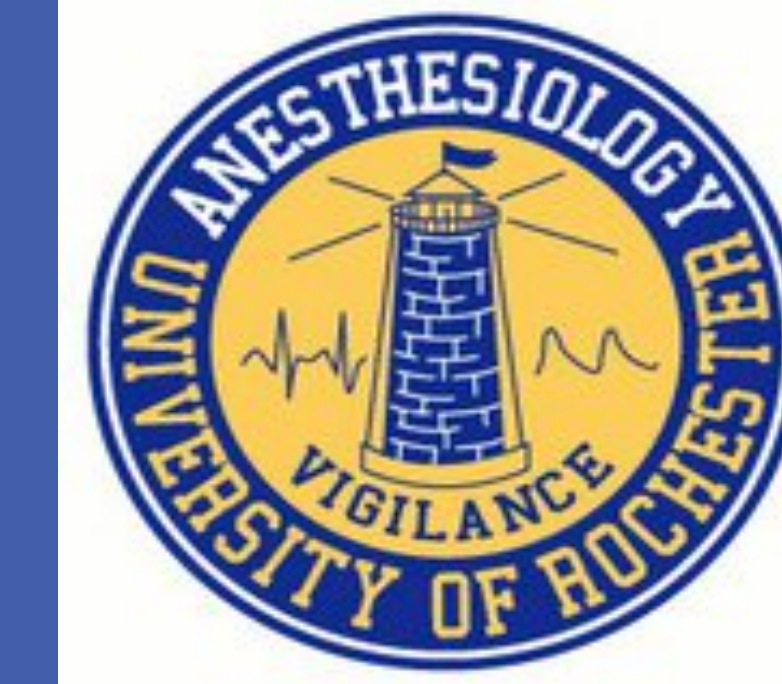




Evaluation of New Ventricular Bigeminy during Cesarean Section

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Introduction

- Peripartum arrhythmias are uncommon but clinically important findings in the context of physiologic and autonomic changes of pregnancy.
- Premature ventricular contractions (PVCs) are often benign, but when frequent (>10% burden), can be associated with PVC-induced cardiomyopathy and warrant further evaluation and management.¹
- Spinal anesthesia and vasopressor use (e.g., phenylephrine) can alter autonomic tone potentially predisposing to cardiac ectopy.
- This case highlights new-onset ventricular bigeminy in a healthy obstetric patient following spinal anesthesia and reviews diagnostic considerations, multidisciplinary collaboration, and management.

Case Summary

- 27-year-old G2P1 parturient presenting for planned elective repeat low-transverse cesarean section at term gestation.
- Medical history notable for childhood asthma, gestational GERD, hypothyroidism, and anxiety. Current pregnancy uncomplicated.
- Possible transient extra heart sound noted on physical exam by anesthesia resident, thought to be a physiologic S3 finding of pregnancy.
- Anesthesia plan: standard ASA monitors, ondansetron pre-spinal, bupivacaine spinal, initiate low-dose phenylephrine infusion for hypotension prophylaxis immediately post-spinal.

Intraoperative Events

- After entering room, patient was monitored with pulse oximetry and NIBP cuff during spinal per institutional practice.
- Uneventful spinal placed at L3/4 level with 1.6mL of 0.75% hyperbaric bupivacaine, 10mcg of fentanyl, and 0.2mg of morphine. Phenylephrine infusion started at 25mcg/min once spinal medications injected.
- EKG leads were placed after positioning patient supine post-spinal.
- EKG immediately showed PVCs following most QRS complexes, consistent with ventricular bigeminy. No prior EKG available for comparison.
- Patient remained normotensive and asymptomatic with T6 anesthesia level.
- Phenylephrine infusion stopped and glycopyrrolate given → PVCs decreased.
- C-section proceeded uneventfully.

Postoperative Workup and Management

- Recurrent ventricular bigeminy on 12-lead EKG in PACU, patient remained normotensive and asymptomatic.

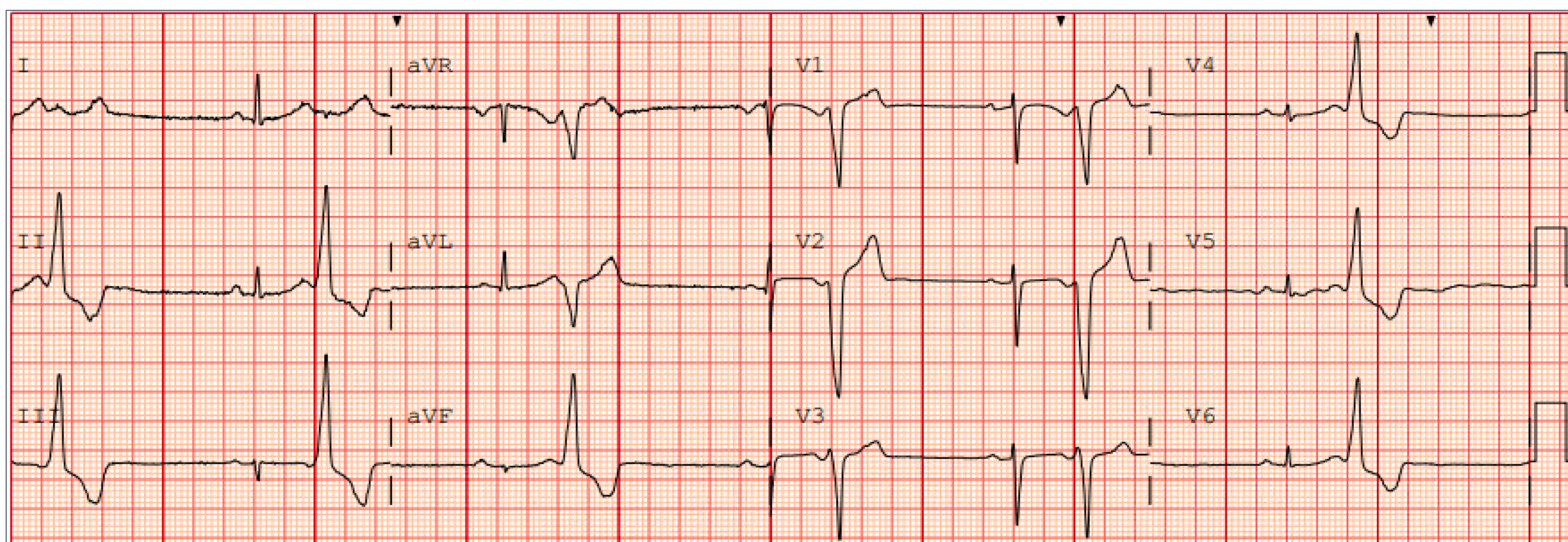


Figure 1. 12-lead EKG in PACU.

- Cardiology consulted and evaluated patient in PACU.
- Lab work only notable for hypomagnesemia → corrected with minimal effect on EKG.
- Echocardiogram ordered: normal heart structure and function.
- Hospitalization course: the remainder of the patient's inpatient recovery proceeded uneventfully and she was discharged on postpartum day 2 with outpatient cardiology follow-up arranged.

Outpatient Workup and Outcomes

- Outpatient cardiac evaluation found that patient had a 20.6% PVC burden, which was associated with fatigue, intermittent palpitations, and dizziness.
- Treatment options included antiarrhythmic medications vs ablation.
- Patient ultimately opted for ablation due to symptomatic hypotension with metoprolol.
- Per cardiology, patient will likely not need long-term continued follow up after ablation.

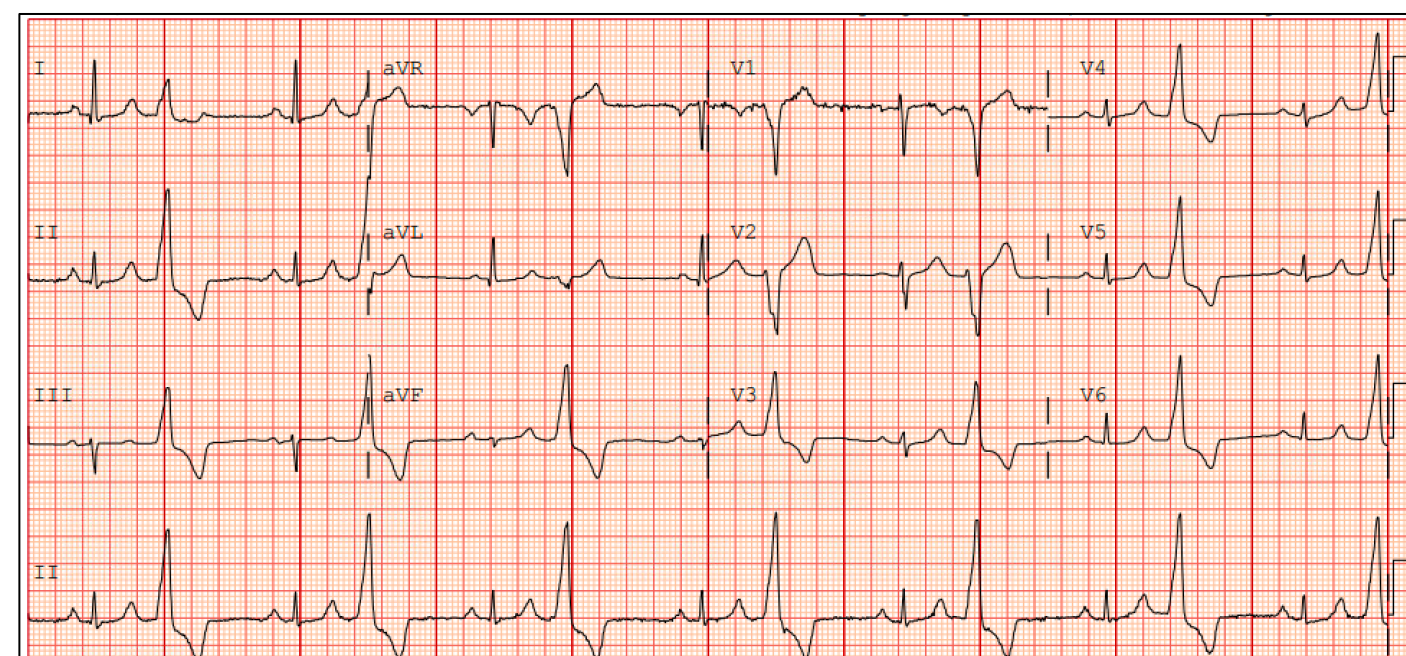


Figure 2. 12- Lead EKG 6 weeks after C-section.

Case Discussion

Differential diagnosis of perioperative ventricular ectopy in this setting includes:

- **High spinal block**
 - Cardiac autonomic innervation is variable and may reach T6-T10, which could partly explain the increased PVC burden with T6 spinal level.²
- **Phenylephrine-induced arrhythmia**
 - Although generally antiarrhythmic, phenylephrine may paradoxically trigger ventricular ectopy via baroreceptor-mediated reflexes.³
- **Local anesthetic systemic toxicity (LAST)**
 - Unlikely given hemodynamic stability and no CNS symptoms.
- **Electrolyte abnormalities**
 - Correction of hypomagnesemia did not significantly alter the patient's PVC burden.
- **Pre-existing ventricular ectopy**
 - Was the pre-operative transient S3 sound actually a PVC?

Clinical implications:

- PVC burden >10% merits further evaluation to exclude structural or metabolic causes.
- Multidisciplinary management (Anesthesia + Cardiology + Obstetrics) ensures safe recovery and continued longitudinal care.

Future Considerations and Summary

- This case underscores the importance of vigilant cardiac monitoring even in low-risk obstetric patients undergoing routine spinal anesthesia.
- Overall management of new arrhythmias in perioperative setting involves:
 - Recognition and continuous monitoring
 - Reversible cause correction (electrolytes, medications)
 - Cardiology consultation for persistent arrhythmia

Things to consider:

- Place EKG leads on patient prior to spinal procedure to evaluate for arrhythmia.
- Continuous telemetry in patients with high PVC burden who are symptomatic.
- Pros/cons of using phenylephrine infusion.

References

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