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Introduction

- Increasing maternal mortality and incidence of arrhythmias observed in the US over the past 2 decades.
- Pregnancy is associated with a higher risk of arrhythmias.
- Patients with a history of arrhythmias are at significant risk of recurrence during pregnancy.
- Multidisciplinary approach is required for pregnant women with significant arrhythmias during labor and delivery.
- Close monitoring is essential for successful maternal and fetal outcomes in high-risk patients.

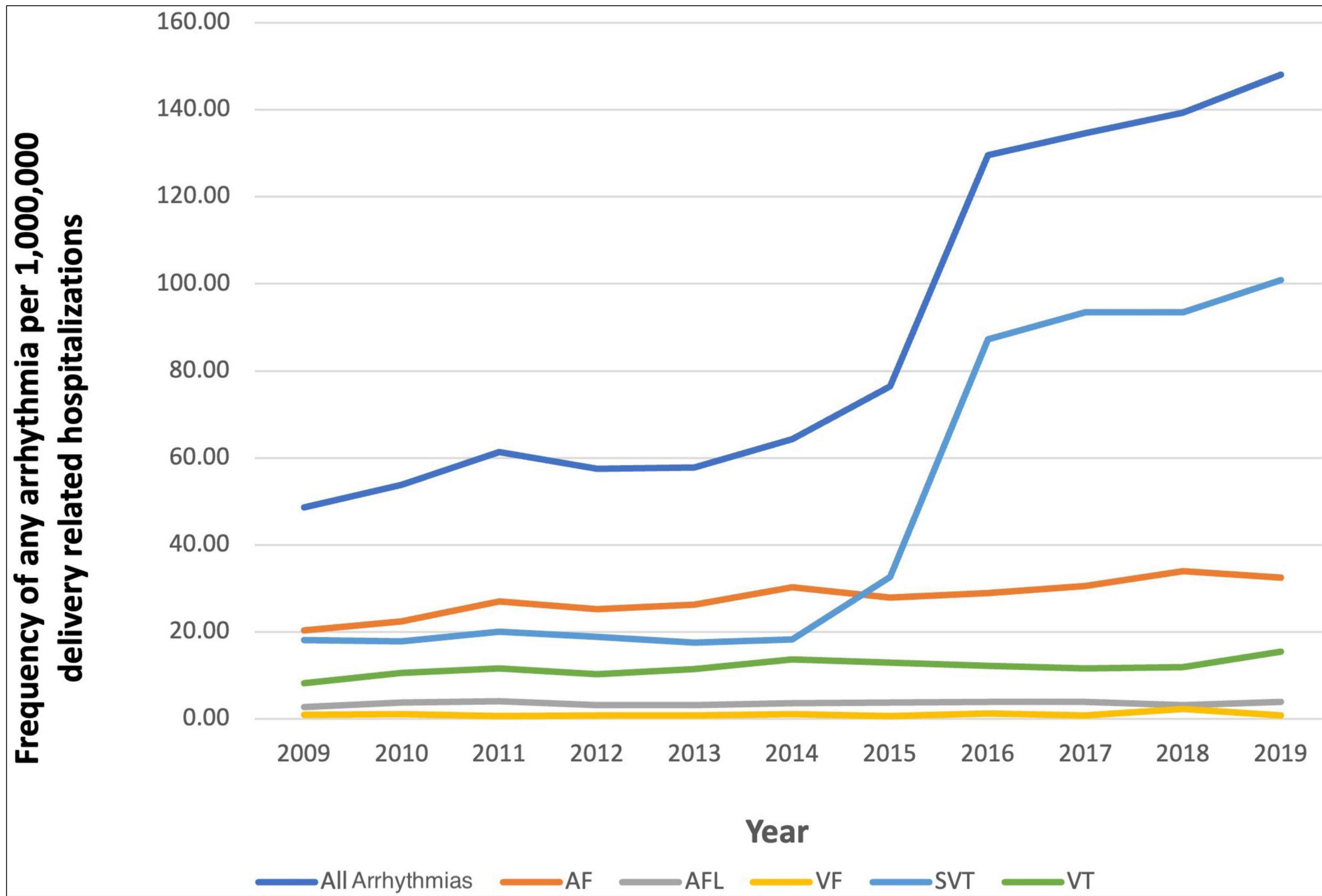


Figure 1:Temporal trends of arrhythmias at delivery-related hospitalizations in the United States. The image was obtained with permission from a published paper. Thakkar A et al, Front Cardiovasc Med. 2022 Nov 3;9:1000298.

Case History

- 27-year-old G2P1 diagnosed with fetal SVT at 20 weeks of pregnancy (FHR 240), initiating complex treatment involving digoxin, flecainide, and sotalol.
- Admitted for digoxin initiation, developed signs of digoxin toxicity (ST changes, abdominal pain, nausea), leading to discontinuation of digoxin and introduction of flecainide
- 12-lead ECG showed coved-type ST segment consistent with new-onset type 1 Brugada Syndrome.
- Echocardiogram revealed structurally and functionally normal heart with ejection fraction of 61%.
- Medication changed to sotalol, effectively managing fetal SVT with escalated doses, but patient experienced SVT episode 10 days later treated with adenosine.

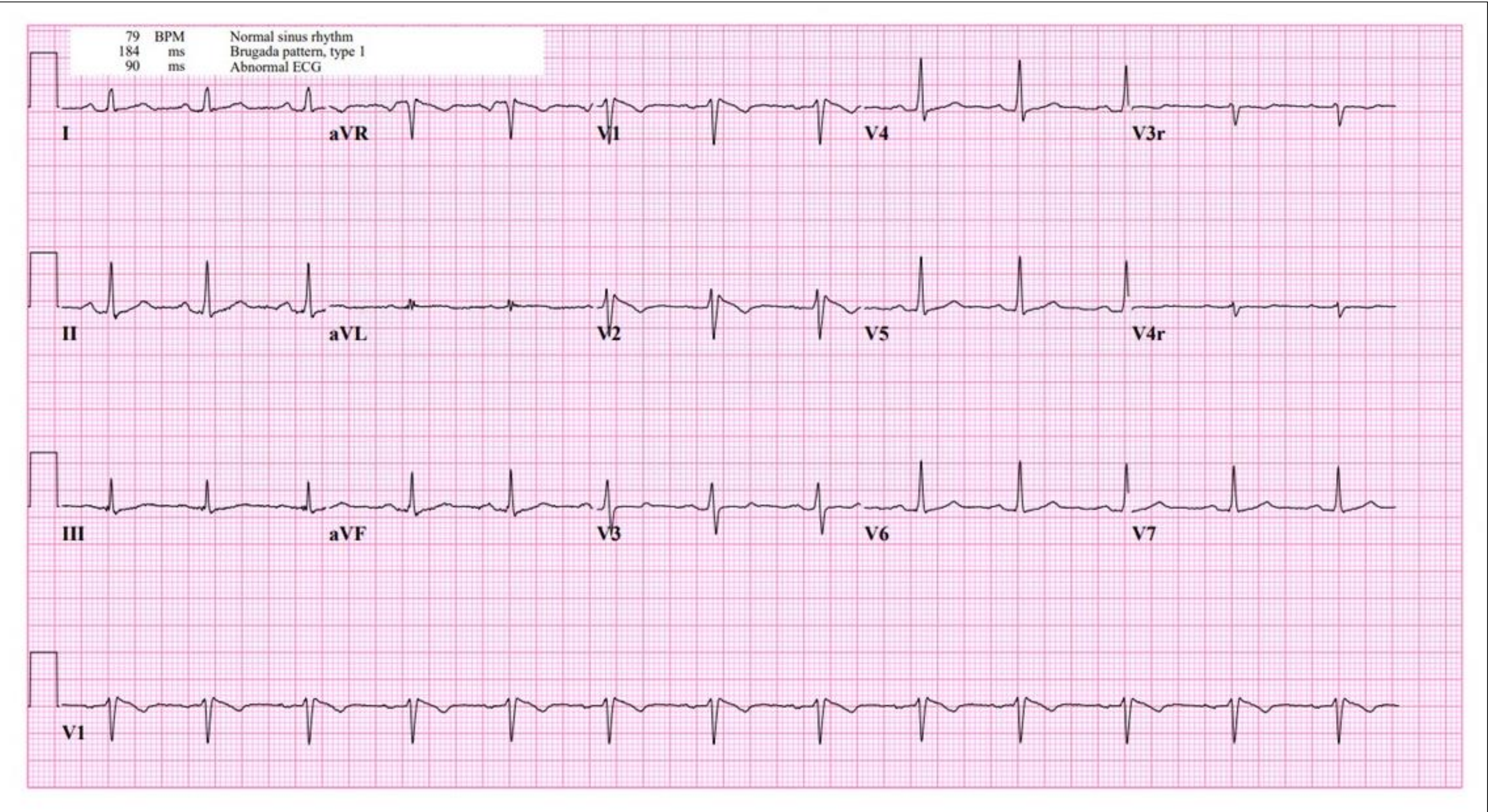


Figure 2:An ECG with Brugada syndrome. Brugada electrocardiographic (ECG) pattern typically seen in leads V1 and V2 recorded from the 4th to 2nd intercostal spaces.

Treatment Plan

- Presenting for labor at 37 weeks and 6 days on sotalol, experienced bradycardia and premature atrial contractions (HR = 50-60 BPM, BP 107/65).
- Patient had gestational thrombocytopenia with a platelet count of 103.
- Continuous telemetry with defibrillator pads applied in preparation for labor.
- Anesthetic management involved combined spinal-epidural anesthesia with spinal dose of 1.5 ml bupivacaine 0.125% +20 micro fentanyl, with ropivacaine 0.125% ready for epidural anesthesia.
- Syncopal episode post-epidural insertion raised concerns, necessitating vigilant monitoring.
- Swift labor, baby born 30 minutes post-spinal, exhibiting good Apgar scores and no murmurs during neonatal assessments.
- Patient did not experience any cardiac events and was downgraded to postpartum floor.

Medications to Avoid

- Flecainide
- Propranolol
- Amiodarone
- Nifedipine, Diltiazem
- TCAs
- Fluoxetine
- Lithium
- Clonazepam
- Bupivacaine
- Propofol
- Acetylcholine
- Cocaine
- Dimenhydrinate
- Nitroglycerine

Conclusion

- Arrhythmias are the most common pregnancy complications in women with cardiovascular disease (9.3%).
- This case highlights the importance of sustained monitoring and collaborative care for maternal-fetal health.

References

1.J Am Coll Cardiol EP. 2022
2. Front Cardiovasc Med. 2022 Nov
3. JACC Clin Electrophysiol. 2022 Mar
4. Heart. 2022 May

5. Cardiol Rev. 2020 Jul/Aug