

Total Atrioventricular Block in Pregnancy –Case Report

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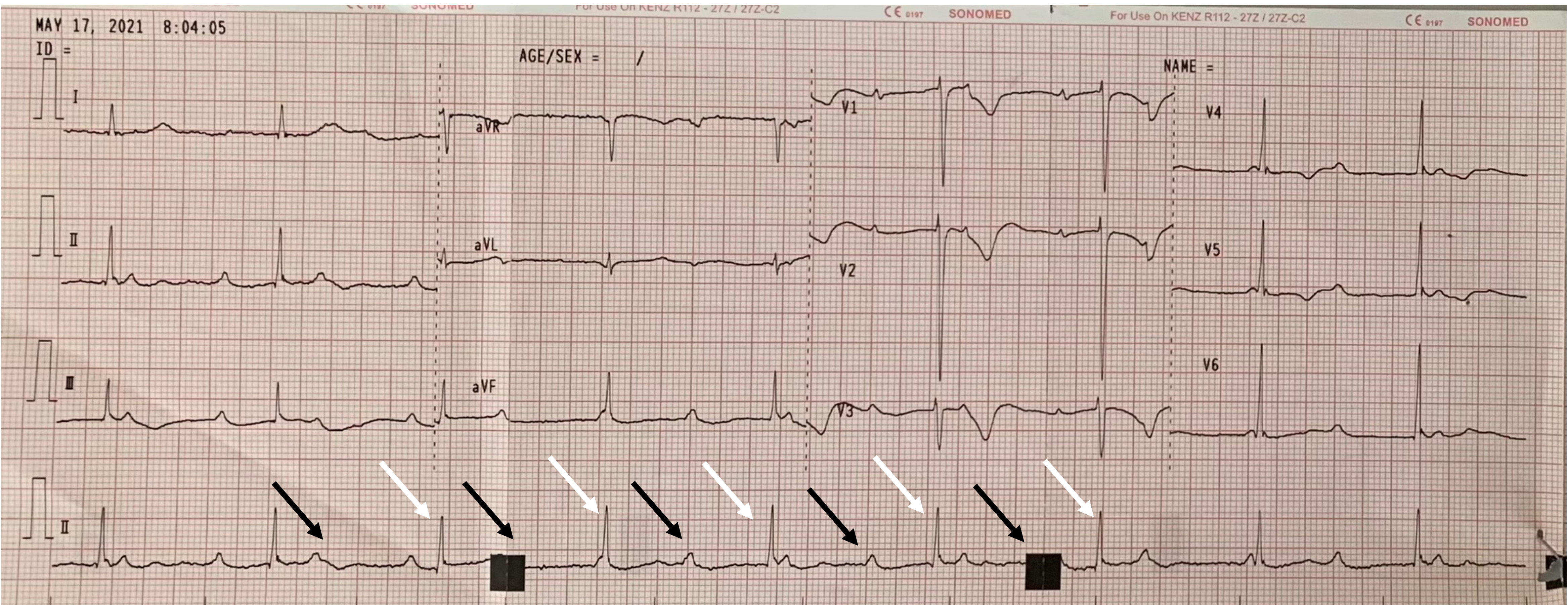
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Objective: Bradyarrhythmia in pregnancy due to total atrioventricular block (TAVB) is rare, often asymptomatic and underdiagnosed. Cases are few and management is still unstandardised, particularly in developing countries.

Case Report: A 24-year-old G2P0A1 of 9 months gestation presented with labour pains. She had a history of bradycardia since a year prior but had not undergone tests nor received treatments. Her heart rate was 55-60 x/minute, cardiotocography was reassuring and electrocardiogram (ECG) revealed a TAVB with ventricular escape rhythm. As she did not have a pacemaker, an urgent cardiologist consultation was arranged during which a temporary pacemaker was installed. She underwent a caesarean section with general anaesthesia after which she had an uneventful recovery.

A 38-year-old G2P1A0 of 2 months of gestation presented with bradycardia and a history of asthma to the outpatient clinic. She also had not undergone tests nor received medication. At presentation, her heart rate was 48 x/minute and her ECG revealed a TAVB with junctional escape rhythm. She had a pacemaker installed at 8 months of gestation and subsequently underwent an elective caesarean section at 37 weeks under regional anaesthesia. She had an uneventful recovery afterwards.



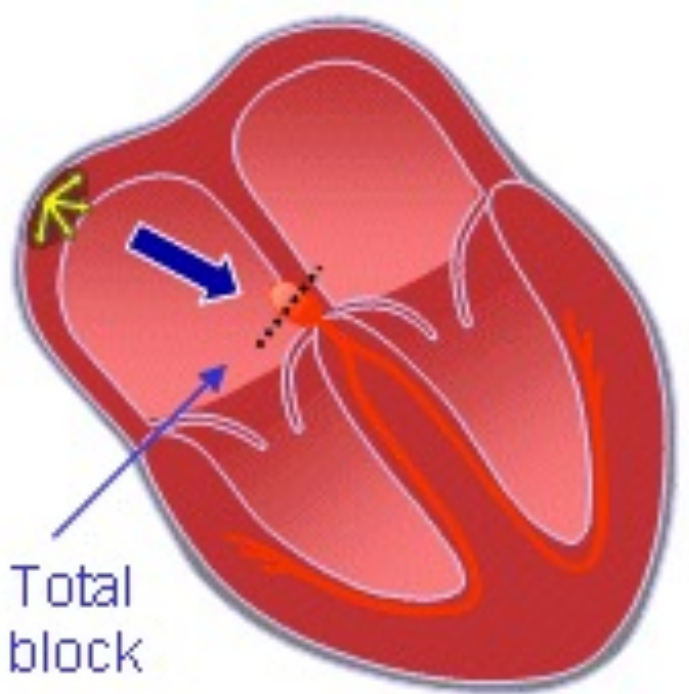
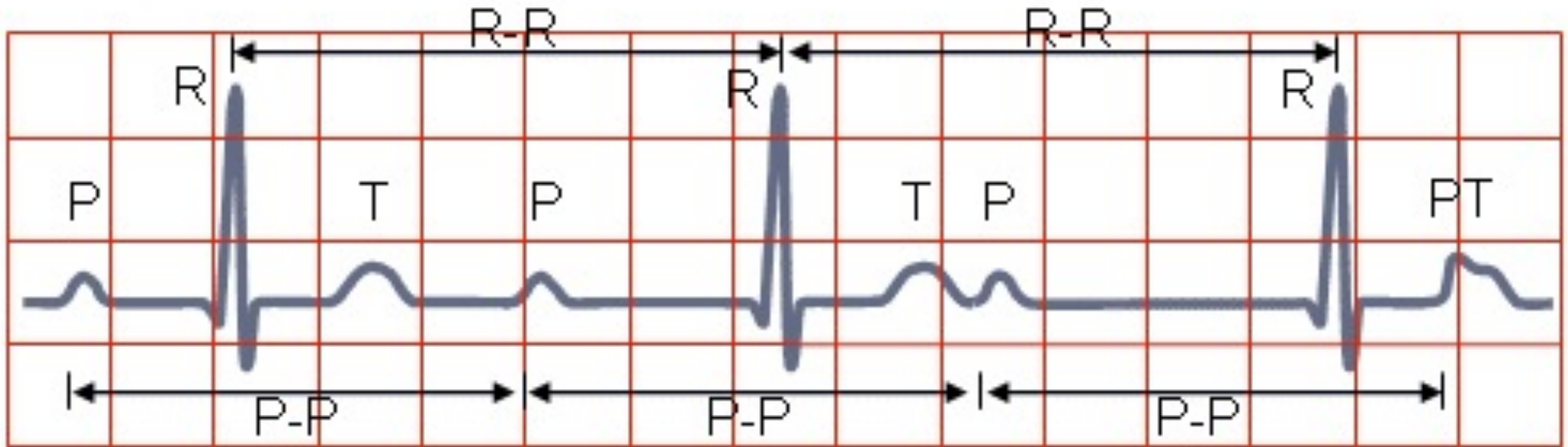
Original ECG of Patient 1 showing Complete Atrioventricular Block with heart rate of 53 bpm (black arrows and white arrows indicating separate atrial and ventricular rhythms)



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A-V BLOCK, THIRD DEGREE

Impulses originate at AV-node and proceed to ventricles
Atrial and ventricular activities are not synchronous



P-P interval normal and constant,
QRS complexes normal, rate constant, 20 – 55 /min

Complete atrioventricular block and its ECG waveforms Complete atrioventricular block and its ECG waveforms (Reproduced with permission from J. Malmivuo, R. Plonsey, Bioelectromagnetism. 19. The Basis of ECG Diagnosis, 1995)

Discussion: Bradyarrhythmia in pregnancy due to TAVB is rare with congenital TAVB being the most common aetiology. The latest recommendation is to implant a permanent pacemaker, regardless of symptoms. Pacemaker should be implanted ideally before pregnancy or if not possible, as early as possible during pregnancy. Circumstances vary and are rarely ideal, leading to patient #1 receiving pacemaker immediately before delivery whilst patient #2 late in gestation. Vaginal delivery remains the route of delivery of choice with caesarean section reserved for obstetric indications. However, lack of experience managing such patients led to the attending clinicians' favouring caesarean sections. So far, there has not been conclusive evidence that TAVB in pregnancy leads to foetal complications such as preterm birth, intrauterine growth restriction, preeclampsia and foetal distress. Such complications were absent in the above patients. For future pregnancies involving TAVB patients, a thorough pregnancy planning with early risk stratification using standardised scales, continuous antenatal assessment through ultrasound, echocardiography and electrocardiogram and advanced delivery plan involving a multidisciplinary team are required.

Conclusion: TAVB in pregnancy requires a concerted effort involving obstetricians, cardiologists, and intensivists. Pacemaker is necessary. Vaginal delivery remains first-choice, caesarean section is indicated for obstetric reasons. Screening, early recognition, risk stratification and thorough planning are required to successfully manage TAVB in pregnancy.

Disclaimer: This case report has recently been published in the journal Annals of Medicine and Surgery of ELSEVIER,
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