Complete Heart Block in Pregnancy: When to Pacing?

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Introduction: Complete heart block (CHB) may be congenital or acquired, with incidence estimated to be 1 in 15,000 to 20,000 live births. CHB is a rare condition during pregnancy and generally pertained to a congenital condition.

Methods: A 20-yo primigravida patient, came to emergency department with hyperemesis gravidarum. Physical examination found blood pressure 100/70 mmHg, bradycardia with heart rate 40 – 55 beat per minute. She has no complain of shortness of breath nor dizziness and no history of syncope. She was diagnosed with complete heart block 5 years ago and advised for permanent pacemaker implant, but she refused. 12 lead ECG show 3rd degree atrioventricular block. Ultrasound examination confirms patient at 6 weeks gestational age. Laboratory examinations were normal, including electrolytes. Patient admitted to high care unit under strict hemodynamic observation and discharged with stable condition without pacemaker insertion.

Result: CHB in pregnancy is usually asymptomatic and do not cause any specific pregnancy related problems except for intrauterine growth retardation and preterm delivery. Fetomaternal outcome is favourable in asymptomatic cases in uncomplicated bradyarrhythmia without significant underlying heart disease. Few asymptomatic patients without pacemakers may present with sudden cardiac death or heart failure during pregnancy, or may become symptomatic during labour due to valsava induced bradycardia. The need of pacemaker during pregnancy still controversy, with management varies from temporary pacemaker insertion to permanent pacing. Hidaka et al, report that asymptomatic patients with CHB and do not require permanent pacemaker before delivery, can be safely managed during labour without pacing. Permanent pacemaker is indicated in pregnancy with CHB if presented with symptoms such as chest pain, dyspnea, syncope, palpitations and also signs of Q-T interval prolongation, wide QRS complex, ventricular dysfunction or heart failure. Khardke et al. recommended temporary pacing to be done early in pregnancy as syncope attacks could be life threatening. Some cases reported pacemaker insertion was done before or after delivery to reduce morbidity and mortality. In this case, patient with CHB was in her first trimester of pregnancy, which pacemaker insertion is not risk free with some complications such as irradiation, bleeding, infection or embolism. She was hemodynamically stable, and we decided to postpone the temporary pacing insertion, and was counselled regarding permanent pacemaker therapy.

Conclusion: CHB can present in every stage of pregnancy and could be completely asymptomatic. Close monitoring and multidisciplinary approach needed to determine cardiac function and symptoms of CHB in pregnancy. Pacemaker (either temporary of permanent) is indicated in symptomatic patients, but also in asymptomatic patients it is also need to considered to prevent complications and mortality.