

CASE REPORT

A Rare Arrhythmia Accelerated Junctional Rhythm in Pregnant Without Structural Heart Disease

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ABSTRACT

Changes in the pregnancy, especially with an increase in sympathetic activation, may provide a basis for the development of dysrhythmias. A 27-year old woman within the 26 weeks of her pregnancy with no known cardiac disease admitted to our clinic with palpitation symptoms. Accelerated junctional rhythm with ventricular rate 90/bpm was observed in her electrocardiogram. No structural heart disease was detected during examination. Accelerated junctional rhythm was persisted at first and third month controls after initial examination. After delivery the rhythm was spontaneously converted to sinus rhythm.

Key Words: Accelerated Junctional Rhythm, electrocardiography, echocardiography.

Yapısal Kalp Hastalığı Olmayan Gebede Nadir Görülen Aritmi Akselere Junctional Ritim

ÖZET

Gebelikte özellikle sempatik aktivasyonun artışı ile meydana gelen değişiklikler disritmilerin gelişimine zemin hazırlayabilir. Çarpıntı şikayeti ile kardiyoloji polikliniğine başvuran 27 yaşında 26 haftalık sağlıklı gebede elektrokardiyografide ventriküler hızı 90/dk olan akselere junctional ritim (AJR) görüldü. Yapısal kalp hastalığı saptanmayan gebede bir ay ve üç ay ara ile alınan EKG'lerinde AJR'nin devam ettiği, gebelikten sonra kontrolünde elektrokardiyografide AJR'nin kaybolduğu ve normal sinüs ritmine spontan olarak döndüğü görüldü.

Anahtar Kelimeler: Akselere junctional ritim, elektrokardiyografi, ekokardiyografi.

INTRODUCTION

Cardiac arrhythmia is one of the most common cardiac complications seen during pregnancy (1). In some pregnancies, pre-existing arrhythmia may be triggered, and in some cases it may be the first arrhythmia episode and very few of these arrhythmias require medication or invasive treatment (2). Although the cause of the increase in arrhythmias during pregnancy is not known precisely, the combination of hemodynamic, hormonal and autonomic changes may play a role. Blood volume in the circulation increases between 30% to 50% and this process starts at the 8th week of pregnancy and reaches the maximum level at 34th week. Likewise, as the cardiac output increases, there is a 35% increase in stroke volume and 15% increase in the heart rate. Increase of plasma volume causes increment in straining of atrial and ventricular myocytes in early afterdepolarization and also shortens the refractory period (3,4). Also, enlargement of the heart chamber can lead to re-entrant tachyarrhythmias (5).

Accelerated junctional rhythm is an end result of increased automaticity of the atrioventricular node and suppression of sinoatrial node, and mostly caused by digoxin intoxication, acute myocardial infarction after cardiac surgery or during isoproterenol infusion (6).

In this article, we present a pregnant woman with AJR, which is very rare during pregnancy.

CASE REPORT

A 27-year-old female patient was admitted to the cardiology clinic with complaints of palpitation for a week. The patient was within the 26 weeks of her pregnancy with no previously known disease or complaints. Accelerated junctional rhythm was detected in the ECG of the patient (Figure 1).

The patient's echocardiography showed no structural heart disease and was compatible with the normal physiology of pregnancy (Figure 2).

In biochemical and complete blood count analysis; Glucose: 87mg/dl, Urea: 28mg/dl, Creatinine: 0,9 mg/dl, LDL-C: 25mg/dl, HDL-C: 72mg/dl, Triglyceride:

20mg/dl, K: 4,2 mmol/L, ALT: 11U/L, AST: 15U/L, WBC:5 μ /L, Hb: 14.2 gram/dl, Plt: 332 μ /L and laboratory values were in the normal range. Accelerated junctional rhythm was persisted at first and third month controls after initial examination. Since the patient had a heart rate of 80/bpm to 110/bpm and was not symptomatic, no medical treatment was given to the patient. At the end of 39 weeks of pregnancy, 2800 gram healthy baby was delivered via normal spontaneous delivery. The rhythm spontaneously converted to sinus rhythm after the delivery (Figure 3).



Figure 1. P wave negativity is seen in inferior leads

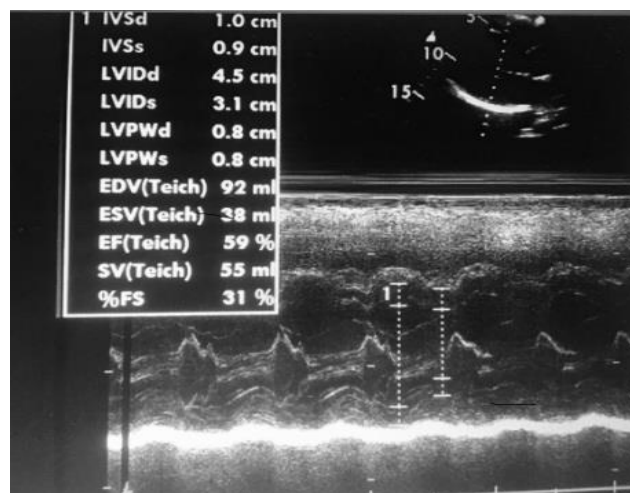


Figure 2. In transthoracic echocardiogram, EF was 59%

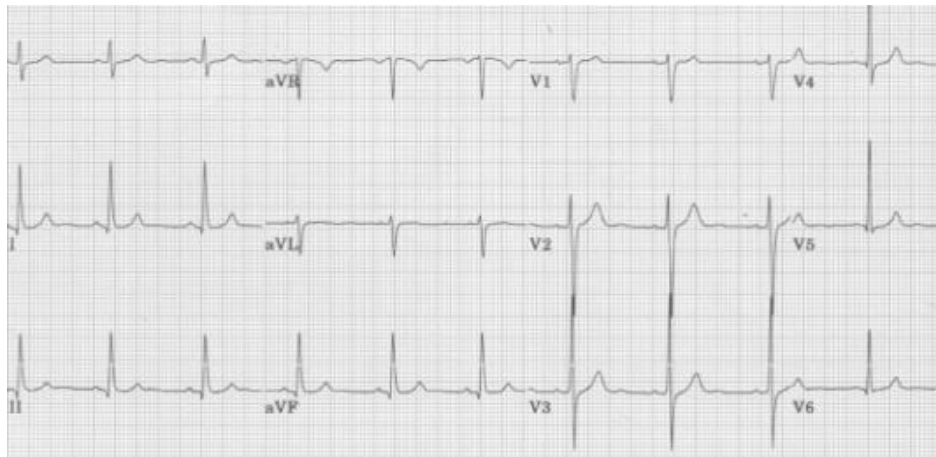


Figure 3. After termination of pregnancy, EKG was observed as normal sinus rhythm

DISCUSSION

Pregnancy is a clinical condition that causes hormonal, autonomic and hemodynamic changes, resulting in increased blood pressure and heart rate at cardiovascular system. In a study conducted in symptomatic and asymptomatic pregnancies without structural heart disease; atrial premature complex frequency was 0.57 and ventricular premature complex frequency was 0.50 (7). The prevalence of supraventricular tachycardia (SVT) in pregnancy has been reported to be approximately 24 out of 100,000 (8).

In pregnant women without structural heart disease, most common paroxysmal SVT is atrioventricular nodal reentry tachycardia, followed by atrioventricular reentry tachycardia (9). The reason behind the increased risk of first SVT in pregnancy is not exactly known (10). Other arrhythmias in pregnancy are very rare. Recently, accelerated idioventricular rhythm, a rare arrhythmia in gestation, which continued throughout the pregnancy and disappeared after delivery has been reported (11).

We presented a case of AJR, a rare arrhythmia in pregnancy which persisted throughout pregnancy and turned into sinus rhythm after delivery. Changes during pregnancy can trigger some arrhythmia types, as can be seen in similar cases.

More detailed studies with similar patient groups may explain why some arrhythmias are triggered in pregnancy and mechanisms behind them. It may be advisable to avoid from treatments like hormone replacement therapy, which may mimic pregnancy to avoid the risk of recurrence of arrhythmias.

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