A-38 Years Old Multiparous Women With Supraventricular Tachycardia, Cardiomyopathy And Recurrent Pregnancy Loss: Is It Tachycardia-Induced Cardiomyopathy?

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Introduction:
SVT is the most common arrhythmia during pregnancy with a prevalence of 24 per 100,000 admissions. Patients with pre-existing SVT may experience exacerbations during pregnancy.

Methods:
Case Illustration: A 38-yrs old G5P1A3 woman presented to emergency at 37w of gestation with complaint of palpitation and dyspnoea. There was no history of cardiovascular disease. She lost her first baby at 24w gestation, and her second pregnancy at 28w gestation. In her 3rd gestation, she had her first baby. In her 12 w gestation of fourth pregnancy, she had another pregnancy loss. On her exam revealed BP of 130/70, HR 220 bpm and respiratory rate of 36x/m, and the rest of the clinical examination was unremarkable. An ECG showed SVT, Long RP interval suspected AVRT (AV re-entrant tachycardia). Echo evaluation showed dilatation of LV and LA, global hypokinetic of left ventricle with reduced EF of 26%, 3rd Grade diastolic dysfunction LV, moderate mitral regurgitation, and mild tricuspid regurgitation. All of the lab values were within normal limits, and chest X-ray showed no acute intrathoracic process. Then we administered 15 mg iv diltiazem but there was no response and the second dose of 20mg of diltiazem was given after 15 minutes but SVT was still persist. Because the haemodynamic was then unstable we decided to perform cardioversion. Biphasic cardioversion was performed immediately in a stepwise fashion (100 J, 150 J, 200 J), but it didn't convert to sinus rhythm. Not long after, she had regular uterine contractions and vaginal examination revealed full cervical dilatation. The baby was born spontaneously with cyanosis and Apgar score of 3. Neonatal resuscitation started immediately, but the death was pronounced minutes later. Then Patient being moved to ICCU. Patient treated with 150 mg Amiodarone given iv bolus, then she was maintained on amiodarone 360 mg /6 hours and 540 mg for further 18 hours iv. Her condition was getting stable then she was discharged with a ventricular rate of 130 bpm with medication furosemide, spironolactone and bisoprolol.

Result:
We presented a case, a gravid patient with recurrent pregnancy loss with SVT and severely reduced LV systolic function. There was no history of cardiovascular disease, so the tachycardia in this patient is a known cause of cardiomyopathy, called as tachycardia-induced cardiomyopathy (TIC). High ventricular rates initially result in cardiac dilatation and mitral regurgitation. However, in patients with TIC, the LVEF and symptoms improve or normalize when the tachycardia is controlled. Coronary angiography is necessary if doubt remains regarding potential ischaemic aetiology of left ventricular dysfunction.

Conclusion:
Tachycardia-induced cardiomyopathy should be considered in all patient whose systolic dysfunction diagnosed subsequent to or concomitant with tachyarrhythmia.