# Refractory Supraventricular Tachycardia: an unusual presentation of a pregnant woman with severe COVID-19

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## Introduction

Patients with COVID-19 usually present with respiratory system symptoms. However, it was identified that one of the most common complications of COVID-19 is Cardiac arrhythmias (1). The venous thrombosis risk for every pregnant woman with COVID-19 should be assessed and the duration of prophylactic LMWH should be discussed by the multidisciplinary team (2).

## Case presentation

A 41-year-old pregnant woman at 38 weeks gestation presented with persistent palpitations. She had no history of cardiac disease. She scored at high risk for VTE on booking and was required to have prophylactic LMWH. The risk factors were BMI of 31, age over 40yrs and a strong family history of DVT and PE. Upon arrival complained about sudden onset palpitation and chest tightness. Her vital signs were HR 252 B/min, blood pressure 160/128, temp, 36.9C$^0$, O2 sat 100% on air and RR 16. CTG was normal but showed maternal tachycardia (**figure 1).** The ECG showed narrow complex tachycardia. Her echocardiography was normal. She did not respond to first- and second-line medical management for SVT. Her blood pressure dropped to 108/67. At screening, she tested positive for PCR COVID-19. A decision was made by MDT to have cardioversion under GA followed by induction of labour. External synchronised Cardioversion with energy 150 joules was applied and a baseline 12-lead electrocardiogram was recorded (**figure 2)**. Direct Current Cardioversion, DCC, successfully terminated SVT and after the shock was delivered, the patient regained sinus rhythm with HR 86 b/min (**figure 3)**. She subsequently delivered her baby in 4 hours with Apgar scores of 9 and 10. She was discharged with prophylactic LMWH at 6 weeks, information was given about self-isolation and mobilisation and further review with a cardiologist to be arranged in 6 weeks.

## Investigations & follow-up

Figure:1

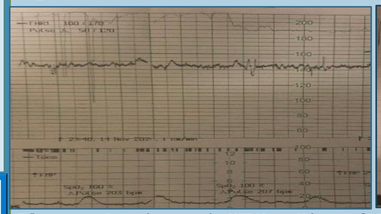

Figure: 2

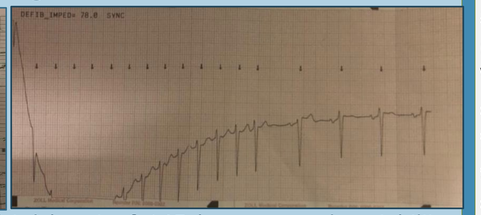

**Figure 1:** showed CTG with a fetal heart of 145 bpm, normal variability, and maternal heart rate of 180-220 bpm. Also showed regular uterine tightening.

**Figure 2**: showed a baseline 12-lead electrocardiogram. Before and after DCC was delivered. the patient regained sinus rhythm with HR 86 b/min.

She presented again to the emergency department on the seventh-day post-delivery complaining about breathlessness and severe central burning chest pain. Clinically, she was highly suspicious of pulmonary embolism and a therapeutic dose of LMWH commenced. The CTPA confirmed unilateral right pulmonary embolism with viral pneumonia **figure 3**. She was managed in the Respiratory ward and was discharged with a therapeutic dose LMWH to be reviewed in three months. Information was given about self-isolation and immobilisation.

**Figure:3** CT Pulmonary Angiogram. showed Filling defects in the right lower lobe pulmonary artery consistent with acute PE.
Widespread multifocal peripheral ground glass pulmonary opacification and interstitial infiltrate consistent with viral pneumonitis.

## Discussion

The management of pregnant women with SVT depends on arrhythmia's clinical and hemodynamic consequences (3). Hemodynamically stable patients may be treated with Valsalva manoeuvre or carotid massage. Adenosine is effective and appropriate as a first-line treatment of SVT in 90% of pregnant patients. Beta-1 blockers are used as the second line. However, in the case of hemodynamically compromised patients, direct current cardioversion is the recommended management. Maternal risk factors associated with severe Covid-19 were maternal age over 35years and BMI > 30 kg/m2 and, pre-existing diabetes and chronic hypertension (4). Nevertheless, these trends of poor outcomes are similar to non-pregnant populations (5). Pregnant women with COVID-19 are at increased risk of VTE and PE, in particular when they have other risk factors for thrombosis. The two maternal death reported by a rapid report published in mid-2020. They sustained pulmonary embolism while they are on a prophylactic dose of LMWH (6 ). Thus recommendation of an intermediate dose of LMWH (7) should be considered for pregnant women with a high risk of VTE.

## References


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