

Fetal supraventricular tachycardia: A case report on the challenges of management

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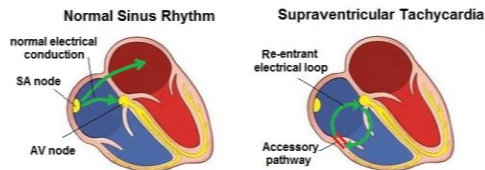
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BACKGROUND

- Fetal tachycardia, defined by fetal heart rate (FHR) > 180 beats per minute (bpm), occurs in <1% of all pregnancies.¹
- Fetal supraventricular tachycardia (SVT) is the most common tachyarrhythmia (*Figure 1*).
- If untreated, the fetus can develop life-threatening complications which include hydrops, heart failure and fetal demise.
- Treatment depends on the gestational age, duration of SVT and degree of fetal compromise.³⁻⁴

Figure 1: Sinus rhythm vs SVT ²



CASE

A 30-year-old woman G1P0, 29+2 weeks-gestation presented with a two-day history of decreased fetal movements. She had an unremarkable medical history, and a normal morphology scan at 20 weeks. The CTG at presentation (*Figure 2*) demonstrated baseline FHR of 125bpm, reduced variability less than 5bpm (>90minutes), and no decelerations.

Tertiary fetal ultrasound performed at the time documented a single live fetus with FHR 240bpm, with 1:1 atrio-ventricular conduction, in a structurally normal heart (*Figure 3*). There was evidence of fetal ascites without hydrops. A diagnosis of fetal SVT with ascites was established. The woman was commenced on digoxin and sotalol in accordance with the current protocol of the "FAST therapy" trial⁵ for transplacental therapy, and was admitted for close maternal and fetal monitoring. Unfortunately, she had an intrauterine death four days later, and subsequently underwent medical induction of labour, delivering a stillborn baby weighing 1695 grams.

Figure 2: CTG on presentation

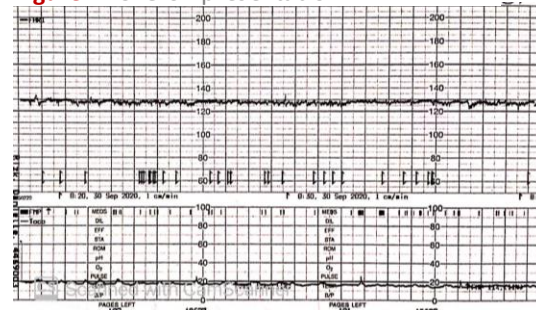
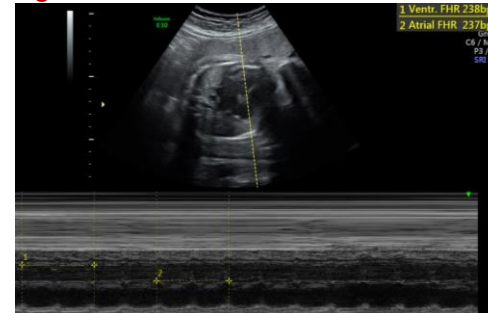


Figure 3: Ultrasound of FHR on M-mode



DISCUSSION

- The diagnosis and management of SVT in the preterm fetus is challenging.
- Transplacental therapy is preferred over preterm delivery and postnatal treatment, to prevent neonatal risks and complications associated with prematurity in addition to the arrhythmia.
- The goal of therapy is for fetal cardioversion and rate control, to prevent hydrops and fetal death.
- Pharmacotherapy of the non-hydrops fetus has good prognosis, with low mortality rates 0-4%. Mortality increases up to 13-27% if associated with hydrops or there is poor rate control.⁶⁻⁸
- Management remains challenging for clinicians as there is only limited research with no established guidelines or consensus for optimal therapy.

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