Twin pregnancy in a patient with complete heart block

A case report

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Summary: A 22 year old primigravida with previously undiagnosed congenital complete heart block and a twin gestation is described. Early diagnosis of both problems and cardiac consultation allowed a temporary pacemaker to be inserted early in the third trimester. The patient was delivered by caesarean section at 36 weeks following spontaneous rupture of membranes. Maternal and fetal outcomes were excellent.

Key words: Twin pregnancy; Complete heart block.

CASE REPORT

A previously well 22-year old woman was referred to us at a period of amenorrhoea of 26 weeks with a "large for date" uterus. She had no history of syncope or respiratory distress and had never used any ovulation-inducing agents.

On examination there were no signs of cardio-respiratory distress. Her heart rate was 42 beats/minute and blood pressure 110/70mmHg. The uterine size was compatible with 30 weeks pregnancy and ultrasound examination revealed a viable twin gestation of 25 weeks maturity. An ECG confirmed compete heart block and the echocardiogram suggested borderline cardiac output. The patient's heart rate varied from a low of 34 beats/minute to a high of 52/minute associated with moderate activity. A temporary pacemaker was inserted at 34 weeks, set at a rate of 60/minute, with output 5 millamperes and a sensitivity of 3 millivolts.

She was admitted to the antenatal ward for bed rest and serial two-weekly ultrasound examination documented concordant fetal growth, with Twin I in a foot breech presentation.

At a period of gestation of 36 weeks, the patient had spontaneous rupture of the membranes. Vaginal examination confirmed Twin I in a breech presentation, with the cervix 3 cm dilated and 50% effaced. She was delivered by lower segment caesarean section under general anaesthesia. Two male fetuses, of birthweights 2420 g and 2340 g and Apgar scores 9 and 8 at 1 minute and 10 and 9 at 5 minutes respectively, were delivered. The operation was uneventful as was the post-operative course and mother and babies were discharged 1 week later. The pacemaker was removed in the puerperium.

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DISCUSSION

The pregnant patient with complete congenital heart block is not commonly encountered, and when she is, there are rarely any problems (de Sweit, 1984). Previous reports have, however all described singleton pregnancies. In these cases, even though the workload on the heart would normally increase during pregnancy, it is usually felt that the cardiac output can be adequately increased without an increase in the heart rate. As a result, routine pacemaker usage may not be necessary but one should look first for signs of chronotrophic incompetence before considering artificial pacing.

In our patient with twin pregnancy, the cardiac work was greater and the echocardiopraghic finding of borderline cardiac output suggested that the stroke volume would be unable to compensate. This situation would have been expected to deteriorate in labour with the combination of the Valsalva maneuvre and forceful uterine contractions leading to maternal bradycardia and syncope (Schonbrun *et al.*, 1986).

As a result, we felt that insertion of a temporary pacemaker was appropriate and this was done at 34 weeks because of the increased risk of preterm labour with multiple gestations.

Advancing technology leading to improved insertion techniques and better clinical experience has led to an increased use of permanent pacemakers in young women so that the need for temporary pacing may become limited. However in developing countries, the use of a temporary pacemaker, especially in a case of multiple gestation may be the most effective method of management.

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