

Brief Report

Respiratory syncytial virus and complete heart block in a child

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Abstract The common respiratory syncytial virus has been associated with cardiac involvement, usually tachyarrhythmias and occasionally myocarditis. A child is described who probably developed a complete heart block following respiratory syncytial bronchiolitis. Such an association needs to be considered if the heart is structurally normal and there is no evidence of a congenital heart block in a setting of maternal anti-Ro and anti-La antibodies.

Keywords: Viral infection; arrhythmia; child

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RESPIRATORY SYNCYTIAL VIRUS HAS BEEN PREVIOUSLY described as involving the heart resulting in tachyarrhythmias,¹ occasional atrioventricular block,² and from time to time possible pericarditis/myocarditis.^{3–6} A child was diagnosed with a complete heart block some time after a documented episode of bronchiolitis.

Case report

AZ presented at the age of 3 years with an intercurrent viral infection and was noted at the time to have a slow heart rate. A diagnosis of complete heart block was made. There was no evidence of a structural cardiac abnormality on her echocardiogram. However, a 24-hour Holter showed a low nocturnal rate in the high 30s per minute. It was decided to insert a dual-chamber pacemaker with two epicardial leads. She has remained well since.

The possible aetiology of complete heart block was considered. Arrangements were made for the patient's mother to be reviewed by a rheumatologist with a view to exclude an immunological cause in the mother, which might have led to the child's complete

heart block. Extensive investigations on the mother did not, however, reveal any abnormalities suggestive of a possible immunological cause in the mother, in that she did not have anti-Ro (SS-A) or anti-La (SS-B) antibodies. Her other investigations, which included a Coombs test, antinuclear factor and extractable nuclear antigen (ENA) antibodies were all negative with no evidence of a lupus anti-coagulant.

On further review of the child's history, it was apparent that she had been admitted at the age of 3 months to a hospital interstate with immunologically proven respiratory syncytial virus bronchiolitis. At the time of her admission and throughout her stay, her heart rate was measured between 109 and 160 per minute. No electrographic recording was made at the time.

Discussion

The question that then arises is whether the infant had gone on to develop a complete heart block at some later stage following her respiratory syncytial virus infection. That this can occur has been noted before.⁴ In addition we previously described a 3-year-old who developed a complete heart block 2 weeks after a respiratory syncytial virus infection.²

This report once again draws attention to the possibility of developing cardiac arrhythmias including

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atrioventricular conduction defects, following the very common respiratory syncytial virus bronchiolitis that tends to be rampant during the winter months. While tachyarrhythmias seem more common, a high-degree atrioventricular block may also need be considered.

References

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