

Images in Congenital Heart Disease

Radiofrequency catheter ablation of symptomatic neonatal rhabdomyoma

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THIS NEONATE, WEIGHING 2.9 KILOGRAMS, presented in heart failure due to a large supramitral rhabdomyoma, which produced severe obstruction to the flow through the mitral valve, a large left-to-right shunt at atrial level, and persistent pulmonary hypertension. In the four-chamber view, the tumour measured 15 millimetres in both diameter and length (Fig. 1; bold line depicts 10 millimetres in each of the figures).

Reasoning from our earlier observation that catheter ablation of a rhabdomyoma for intractable supraventricular tachyarrhythmia induced changes in the

morphology of the tumour,¹ we undertook therapeutic radiofrequency catheter ablation at 14 days of age to reduce the bulk of the tumour. After obtaining informed consent, an ablation catheter of 5 French dimension, with an electrode tip of 2 millimetres, was advanced from the femoral vein across the atrial septum. Under transoesophageal echocardiographic guidance, and using local electrical signals recorded from the tumour, we applied a total of 45 lesions to the surface of the tumour. A “lesion”, defined as a target temperature of 60 degree Celsius for 60 seconds, could be reached with energy output of less than 5 Watts.

There were no procedural complications, and echocardiography 24 hours later (Fig. 2), confirmed central liquefaction necrosis, which was followed by shrinkage of the tumour and resolution of symptoms. The patient

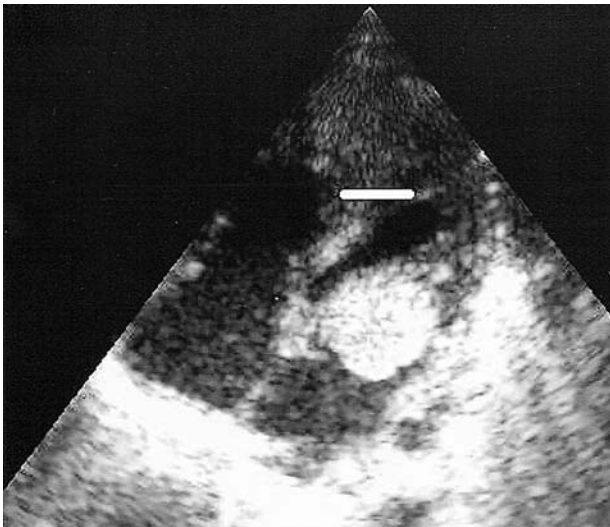


Figure 1.

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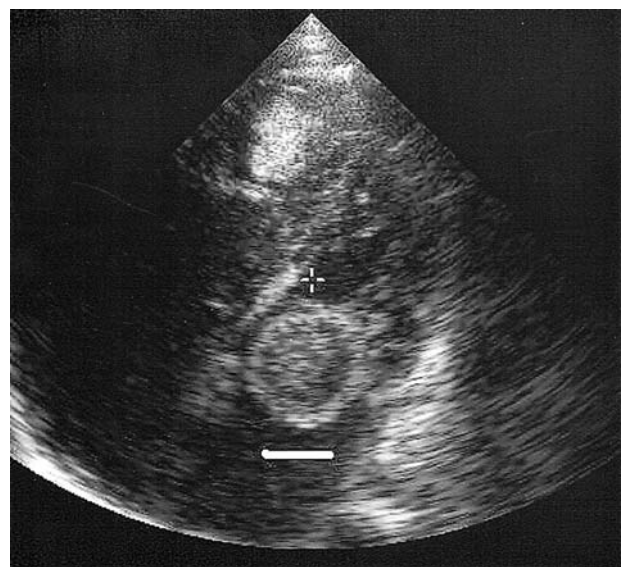


Figure 2.

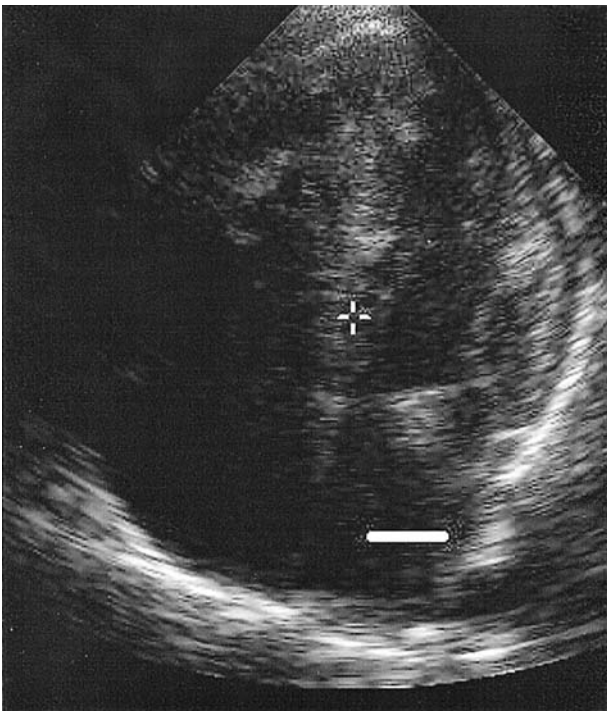


Figure 3.

was discharged from hospital 7 days later, without medications. Follow-up echocardiography at 4 weeks (Fig. 3) demonstrated further shrinkage of the tumour, without impairment of the function of the mitral valve.

Recognizing that spontaneous regression also may have contributed to this outcome, we believe, nonetheless, that the ablative procedures hastened relief of the obstruction to flow through the mitral valve, and may constitute an alternative to surgical excision, in selected infants, of symptomatic intracardiac tumours.

Reference

1. Emmel M, Brockmeier K, Sreeram N. Images in cardiology: Rhabdomyoma as accessory pathway: electrophysiologic and morphologic confirmation. *Heart* 2004; 90: 43.