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Images in Congenital Cardiac Disease

Three-dimensional echocardiographic assessment of rhabdomyoma in a newborn

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A FEMALE INFANT WAS BORN WITH A SUSPECTED diagnosis of tuberous sclerosis. At 3 days of age, three-dimensional echocardiogram (IE 33, 3DQ-QLAB advanced software, Philips®), with multiplane mode (Fig 1), real-time imaging (Fig 2), and full volume (Fig 3) allowed detailed visualisation of two highly echogenic and well-circumscribed cardiac masses. The first large lesion was attached by a broad base and rose from the mid-portion of the interventricular septum to the right ventricular apex. The second tumour was inserted under the pulmonary valve without outflow tract obstruction or pulmonary regurgitation. A deformation of the septum due to the rigidity of the tumour was evidenced (Fig 4, video clip). Postnatal magnetic resonance image revealed one brain lesion confirming the diagnosis of tuberous sclerosis. Repeated Holter EKG did not register arrhythmia. A conservative approach was adopted. Rhabdomyomas are the most common primary cardiac tumour in the paediatric group. They are closely associated with the syndrome of tuberous sclerosis, a complex multisystem autosomal dominant disorder, for which they are a major diagnostic criterion. They lead to a wide clinical spectrum, ranging from fortuitous echocardiographic detection to congestive cardiac failure, arrhythmia, or sudden death, related to the position and size of the lesions. Cardiac rhabdomyomas often disappear spontaneously in later life.

Three-dimensional imaging allowed a better definition of the tumour characteristics and provided

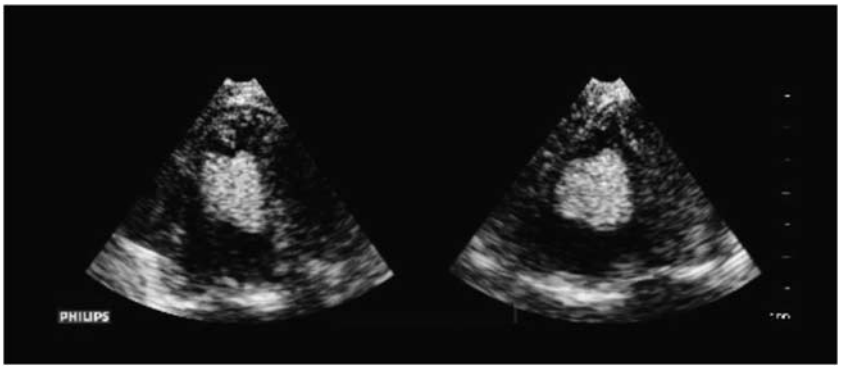

Figure 1.

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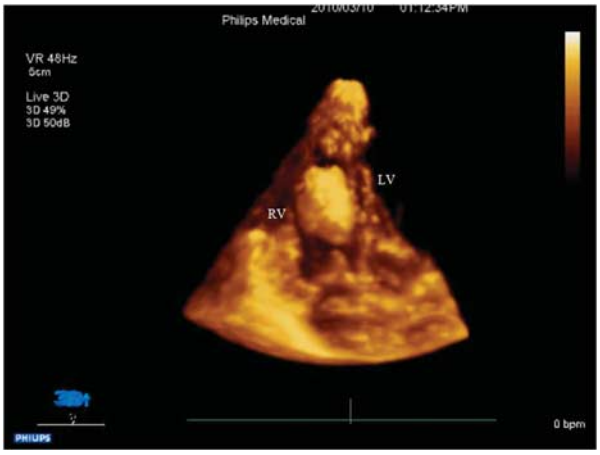

Figure 2.

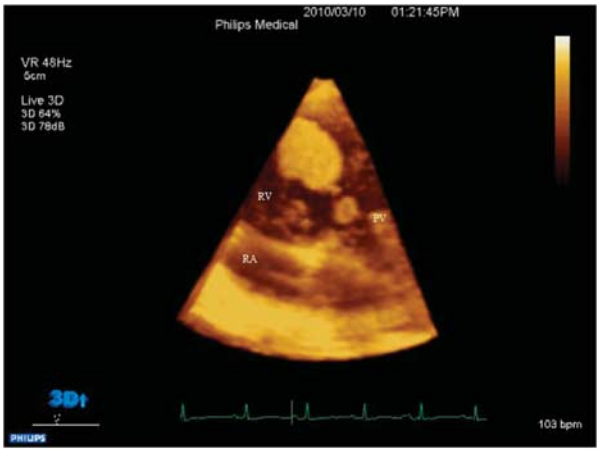

Figure 3.

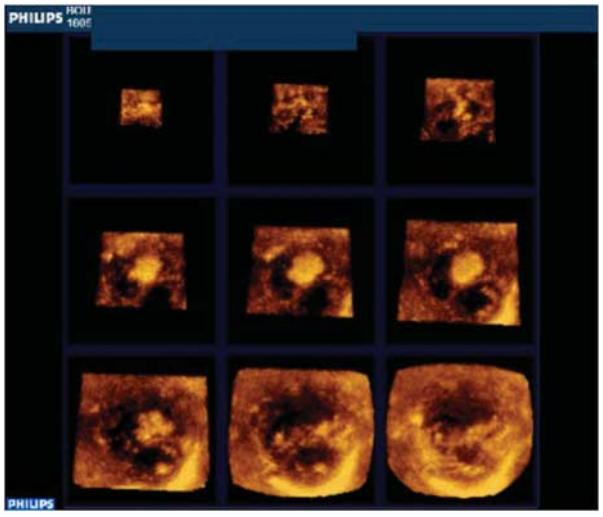

Figure 4.

a better delineation of the spatial relationship of the mass with a tomographic perspective. Three-dimensional imaging may facilitate a possible operative planning and should be included in cardiac mass evaluation and follow-up.

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