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External Cardioversion of Supraventricular Tachycardia in Omphalo-Thoracopagus Conjoined Twins

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A pair of omphalo-thoracopagus twins was diagnosed with supraventricular tachycardia (SVT) on the first day of life. Twelve-lead electrocardiography was performed with leads placed on twin A (Figure 1). The 2:1 ratio of the 2 QRS populations was thought to be the result of SVT in twin...
A, with 1:1 conduction between the 2 atria and 2:1 conduction at the level of the atrioventricular node of twin B. Intravenous adenosine (0.1 and 0.2 mg/kg) was given without success. External cardioversion was performed with defibrillation patches placed on the back of each neonate (Figure 2). The thoracopagus anatomy precluded anteroposterior placement of defibrillation patches. A synchronized shock of 6 J successfully restored normal sinus rhythm (Figure 3A). Repeat 12-lead electrocardiography after cardioversion showed 2 different populations of P and QRS waves with identical heart rates (Figure 3B). We concluded that the twin with the faster sinus rate was driving the rate of the second twin through a connection at the atrial level. The imaging studies, including contrast-enhanced computed tomography, revealed a complex relationship of the 2 hearts (Figure 4).

Electrocardiographic recording of thoracopagus twins has been rarely reported (1,2). SVT has been previously reported in thoracopagus twins, with successful ablation of the accessory pathway in 1 of the twins (3). Because this is an extremely rare occurrence, we present here the 12-lead...
electrocardiogram of thoracopagus twins during SVT and during sinus rhythm. We also report successful cardioversion with back-to-back placement of defibrillation patches in thoracopagus twins for the first time.

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