External Cardioversion of Supraventricular Tachycardia in Omphalo-Thoracopagus Conjoined Twins.

M Rizwan Afzal
Lindsey Malloy-Walton
Svjetlana Tisma-Dupanovic
Andrea L. Miles
Sanket Shah

*Children's Mercy Hospital*

*See next page for additional authors*

Follow this and additional works at: https://scholarlyexchange.childrensmercy.org/papers

Part of the Cardiology Commons, Congenital, Hereditary, and Neonatal Diseases and Abnormalities Commons, and the Pediatrics Commons

**Recommended Citation**


This Article is brought to you for free and open access by SHARE @ Children's Mercy. It has been accepted for inclusion in Manuscripts, Articles, Book Chapters and Other Papers by an authorized administrator of SHARE @ Children's Mercy. For more information, please contact library@cmh.edu.
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. Two QRS populations are seen with a cycle length of 250 ms in twin A (up-going arrows) and 500 ms in twin B (down-going arrows).
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

---

**FIGURE 2** Defibrillation Patch Placement

The thoracopagus twins with defibrillation patches placed in a "back-to-back" configuration.

**FIGURE 3** Cardioversion of SVT and ECG During Sinus Rhythm

(A) Termination of SVT with direct current shock. (B) 12-Lead ECG during sinus rhythm with insert showing the 2 sets of P and QRS waves. Down-going arrows show the P and QRS waves of twin A and up-going arrows show the P and QRS waves of twin B.
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.

ADDRESS FOR CORRESPONDENCE: Dr. John Papa-giannis, Children’s Mercy Hospital, Division of Cardiology, 2401 Gillham Road, Kansas City, Missouri 64108. E-mail: jpapagiannis@cmh.edu.

REFERENCES