

See Article page 234.



## Commentary: Altruism reveals a surreptitious life-threatening myxoma

Ibrahim Abdullah, MD

In this issue of the *JTCVS Techniques*, Beckerman and colleagues<sup>1</sup> from Texas present a fascinating case demonstrating the life-saving consequence of an act of altruism and diligent follow-up after a notable physical examination. A young 16-year-old otherwise-healthy female patient with a strong family history of sudden cardiac death experienced a syncopal episode shortly after a blood donation and presented to the emergency department (ED). Her physical examination revealed a systolic murmur. Although she was remarkably discharged from the ED, her pediatrician astutely obtained an outpatient echocardiogram that showed an obstructive right ventricular outflow tract mass flailing through the pulmonary valve. This resulted in an urgent admission followed by a computed tomography scan to rule out pulmonary embolism and a magnetic resonance imaging scan before an urgent operative resection. Intraoperatively, she was found to have a very rare right ventricular myxoma that was successfully resected with a good outcome. The authors should be congratulated for an excellent result. A deeper dive into this case, however, forces one to ponder—eliciting many lessons.

Primary tumors of the heart are rare—occurring in about 0.0017% to 0.19% of patients at autopsy.<sup>2</sup> Of those, three quarters are benign and of these benign tumors approximately one half are myxomas. Although 75% of myxomas typically originate in the left atrium, only 3% to 4% originate in the right ventricle. This makes this young lady's finding extremely rare. Gribaa and colleagues<sup>3</sup> report the case of an 11-year-old boy who also presented with syncope and was found to have a right ventricular myxoma obstructing



Ibrahim Abdullah, MD

### CENTRAL MESSAGE

Syncope, family history of sudden cardiac death, and a murmur after an altruistic donation of blood reveal the insidious nature of a life-threatening myxoma.

the right ventricular outflow tract. This young boy suffered an intraoperative cardiac arrest upon anesthetic induction requiring emergent cardiopulmonary bypass. Given that this young lady also experienced syncope and likely was prone to hemodynamic instability like the aforementioned boy, it is remarkable that she was discharged from the ED without an echocardiogram despite having a family history of sudden cardiac death and a murmur. She is lucky that the resulting delay in diagnosis was of no consequence.

It is known that approximately 10% of myxomas follow an autosomal-dominant mode of familial inheritance as part of the Carney complex.<sup>4</sup> Although she did not have the associated features of spotty pigmentation or endocrine overactivity, the authors aptly performed echocardiograms on the patient's siblings to ensure others didn't have life-threatening cardiac masses. She will nevertheless require continued surveillance for recurrence.

What are the chances that her fate would have followed her family history of sudden death had she not donated blood? As the authors point out, her act of generosity in donating blood likely resulted in syncope due to hypovolemia and right ventricular outflow tract obstruction—ironically saving her life. Perhaps the sentinel lesson here is that there is always a benefit to sincere altruism—the intended beneficiary being a given, let alone the powerful impact on the benefactor in this particular case.

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From the Department of Pediatric Cardiac Surgery, Cohen Children's Medical Center/Northwell Health, New Hyde Park, NY.

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Address for reprints: Ibrahim Abdullah, MD, Department of Pediatric Cardiac Surgery, Cohen Children's Medical Center/Northwell Health, New Hyde Park, NY (E-mail: [iabdullah1234@gmail.com](mailto:iabdullah1234@gmail.com)).

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