

Finally, left-to-right shunting secondary to restrictive CTD and a patent foramen ovale or ASD might lead to central cyanosis and symptoms consistent with increased portal venous pressure, such as ascites, coagulopathy, hepatic dysfunction, and protein-losing enteropathy.<sup>5</sup> In such cases, ASD closure should be undertaken after surgical or percutaneous balloon correction of CTD.<sup>6</sup>

*Efrén Martínez-Quintana, MD, PHD,  
Cardiology Service,  
Insular-Materno Infantil University Hospital; and  
Fayna Rodríguez-González, MD,  
Dr. Negrín University Hospital of Gran Canaria;  
Las Palmas de Gran Canaria, Spain*

## References

1. Vukovic PM, Kosevic D, Milicic M, Jovovic L, Stojanovic I, Micovic S. Cor triatriatum dexter and atrial septal defect in a 43-year-old woman. *Tex Heart Inst J* 2014;41(4):418-20.
2. Martínez-Quintana E, Rodríguez-González F, Marrero-Santiago H, Santana-Montesdeoca J, López-Gude MJ. Cor triatriatum dexter versus prominent eustachian valve in an adult congenital heart disease patient. *Congenit Heart Dis* 2013;8(6):589-91.
3. Ebeid MR, Braden DS, Gaymes CH, Heath B, Joransen JA. Postsurgical use of Amplatzer septal occluder in cyanotic patients with pulmonary atresia/intact ventricular septum: significance of cor triatriatum dexter and dilated right atrium. *Catheter Cardiovasc Interv* 2000;51(2):186-91.
4. Ebeid MR. Percutaneous catheter closure of secundum atrial septal defects: a review. *J Invasive Cardiol* 2002;14(1):25-31.
5. Alkhulaifi AM, Serraf A, Planche C. Ascites and weight loss in a child: due to congenital division of the right atrium. *Cardiol Young* 1999;9(3):335-7.
6. Savas V, Samyn J, Schreiber TL, Hauser A, O'Neill WW. Cor triatriatum dexter: recognition and percutaneous transluminal correction. *Cathet Cardiovasc Diagn* 1991;23(3):183-6.

<http://dx.doi.org/10.14503/THIJ-14-4645>

## Myocardial Apical Hypertrophy and Takotsubo Cardiomyopathy

*To the Editor:*

I appreciated the article by Roy and colleagues<sup>1</sup> in the *Texas Heart Institute Journal*. To the authors' knowledge, theirs were the first reported cases in which apical-variant hypertrophic cardiomyopathy was masked by apical ballooning from stress-induced cardiomyopathy. The authors added information about 5 reported cases of patients with hypertrophic cardiomyopathy (HCM) who had experienced an episode of takotsubo cardiomyopathy, all of whom had the obstructive HCM "with asymmetric septal hypertrophy, not apical-variant HCM." What was actually observed is a recently detected phenomenon of apparent left ventricular (LV) apical hypertrophy,<sup>2,3</sup> which occasionally is seen in the

subacute and chronic phase of convalescence from takotsubo cardiomyopathy. It is caused by transient myocardial edema.<sup>4</sup> Kato and colleagues<sup>3</sup> observed apical hypertrophy of the LV at approximately 3 weeks after onset, when the wall motion had improved; the ventricular wall gradually became thinner, and the transient apical hypertrophy was attributed to hypertrophic signaling in the myocardium, which was stimulated by catecholamines.<sup>3</sup> Myocardial edema with a hypertrophic LV apex has been reproducibly detected on cardiac magnetic resonance images<sup>4</sup> and echocardiograms. Whether the LV hypertrophy<sup>1</sup> represents apical HCM or takotsubo-induced myocardial edema can be resolved by observing subsequent electrocardiograms of these patients for chronically persisting giant negative T waves<sup>5</sup> and R waves<sup>6</sup> in the mid-precordial leads, and by comparing old and follow-up echocardiograms.

*John E. Madias, MD, FACC,  
Icahn School of Medicine at Mount Sinai,  
New York City; and  
Division of Cardiology,  
Elmhurst Hospital Center,  
Elmhurst, New York*

## References

1. Roy RR, Hakim FA, Hurst RT, Simper D, Appleton CP. Two cases of apical ballooning syndrome masking apical hypertrophic cardiomyopathy. *Tex Heart Inst J* 2014;41(2):179-83.
2. Madias JE. Two cases of reversible left ventricular hypertrophy during recovery from takotsubo cardiomyopathy: hypertrophy or myocardial edema after an attack of takotsubo syndrome? *Echocardiography* 2013;30(8):989.
3. Kato T, Ban Y, Kuruma S, Ishida S, Doi C, Iura T, et al. Two cases of reversible left ventricular hypertrophy during recovery from takotsubo cardiomyopathy. *Echocardiography* 2013;30(4):E92-4.
4. Perazzolo Marra M, Zorzi A, Corbetti F, De Lazzari M, Migliore F, Tona F, et al. Apicobasal gradient of left ventricular myocardial edema underlies transient T-wave inversion and QT interval prolongation (Wellens' ECG pattern) in takotsubo cardiomyopathy. *Heart Rhythm* 2013;10(1):70-7.
5. Yamaguchi H, Ishimura T, Nishiyama S, Nagasaki F, Nakaniishi S, Takatsu F, et al. Hypertrophic nonobstructive cardiomyopathy with giant negative T waves (apical hypertrophy): ventriculographic and echocardiographic features in 30 patients. *Am J Cardiol* 1979;44(3):401-12.
6. Madias JE. Electrocardiogram in apical hypertrophic cardiomyopathy with a speculation as to the mechanism of its features. *Neth Heart J* 2013;21(6):268-71.

<http://dx.doi.org/10.14503/THIJ-14-4417>

*Letters to the Editor should be no longer than 2 double-spaced typewritten pages and should generally contain no more than 6 references. They should be signed, with the expectation that the letters will be published if appropriate. The right to edit all correspondence in accordance with Journal style is reserved by the editors.*