

Cor Triatriatum Dexter in Adults?

To the Editor,

We have read with interest the letter to the Editor published recently in the magazine by Sanchez-Brotons et al, with the title Cor triatriatum dexter (CTD) in the adult age. The authors diagnose this pathology accidentally in 2 elderly patients, they show the echo images and finally they stress that it is necessary to be cautious in the diagnosis since a prominent Eustachian and/or Thebesian valve can simulate a true CTD.¹

We would like to emphasize this last affirmation and add several ideas. In our group we would be very reluctant to diagnose a CTD in case of no obstruction, since today an exact definition does not exist. The fact that the embryologic explanation of CTD is the same as that of the normal formation of the valve of Eustachio and Thebesius (persistence of the right valve of the venous sinus) gives us no possible distinction between the normal spectrum variants and a definitive alteration of the embryological development.² Therefore, we think that although the term CTD seems to us very appropriate from a descriptive point of view, it is not as much so from a conceptual point of view. On the contrary, the most common equivalent, cor triatriatum sinister, conceptually corresponds with a malformation clearly differentiated from the normal anatomy of the left atria, although its embryology is still not more than an hypothesis (stenosis of the incorporation of the common pulmonary vein).³

On the other hand, in the fetus and in childhood it is exceptional to find an obstructive CTD without associate anomalies, and in our experience it is also exceptional to find it associated with right-sided heart malformations. That perception is corroborated by the lack of description of this issue, limited to a few cases published in literature.⁴⁻⁶ In addition, the published cases at the adult age are limited to non obstructive CTD and without attention to detail.⁷

For these reasons we think that categorizing the spectrum of residual right valve of the venous sinus must not be given too much importance and that functional analysis must be sufficient to rule out obstruction of the flow at this level. The reality is that in our daily practice, and supported by the literature, it is very frequent to find prominent Chiari net, Eustachian or Thebesian valve simulating a CTD; sometimes there are even non significant flow accelerations at these levels without any type of repercussion.⁸

In conclusion, we want to note, as did Sanchez-Brotons et al¹, that the findings of residual right valve of the venous sinus are frequent in the normal population, and are not sufficient to diagnose a CTD. In our opinion, it is necessary to add that we must be skeptical at the time of making this diagnosis in adults and most of all when significant obstruction to the venous flow is not demonstrated.

Isaac Bendayán and Fernando Rueda-Núñez

Unidad de cardiopatías congénitas, Complejo Hospitalario Universitario de A Coruña, A Coruña, Spain

REFERENCES

1. Sánchez-Brotons JA, López-Pardo FJ, Rodríguez-Puras MJ, López-Haldón JE. *Cor triatriatum dexter* en la edad adulta. *Rev Esp Cardiol*. 2010;63:998-9.
2. Geva T, Van Praagh S. Abnormal systemic venous connections. En: Allen HD, Driscoll DJ, Shaddy RE, Feltes TF, editores. *Moss and Adams heart disease in infants, children, and adolescents. Including the fetus and young adult*. 7.^a ed. Philadelphia: Lippincott Williams & Wilkins; 2008. p. 793-817.
3. Geva T, Van Praagh S. Anomalies of the pulmonary veins. En: Allen HD, Driscoll DJ, Shaddy RE, Feltes TF, editores. *Moss and Adams heart disease in infants, children, and adolescents. Including the fetus and young adult*. 7.^a ed. Philadelphia: Lippincott Williams & Wilkins; 2008. p. 762-92.
4. Kauffman SL, Andersen DH. Persistent venous valves, maldevelopment of the right heart, and coronary artery-ventricular communications. *Am Heart J*. 1963;66:664-9.
5. Maroun LL, Graem N, Skibsted L. Fetal *cor triatriatum dexter*: a report of two cases associated with nuchal edema in early second trimester. *Pediatr Dev Pathol*. 2008;11:59-62.
6. García-López JC, Sánchez-Pérez I, Cazzaniga M, Pérez de León J, González-Diéguez CC. Una forma rara de cardiopatía cianótica por obstrucción supraavicular tricuspídea en el lactante. *Rev Esp Cardiol*. 2005;58:1470-2.
7. Lee YS, Kim KS, Lee JB, Kean-Ryu J, Choi JY, Chang SG. *Cor triatriatum dexter* assessed by three-dimensional echocardiography reconstruction in two adult patients. *Echocardiography*. 2007;24:991-4.

8. Lanzarini L, Lucca E. Persistence of the right valve of the sinus venosus resulting in an unusually Chiari network remnant mimicking cor triatriatum dexter. *Pediatr Cardiol.* 2002;23: 103-5.

Response

To the Editor,

We are pleased by the interest shown by Bendayán et al regarding our letter to the editor recently published in the *Revista Española de Cardiología*,¹ and we would like to make some points regarding their relevant comments. We agree that the greatest clinical repercussion of the cor triatriatum dexter (CTD) occurs when this condition is obstructive, although we cannot exclude other manifestations that can also have clinical relevance when there is no obstruction. Complications related to invasive procedures are among those attributable to CTD, as they can impede catheter insertion,² and even cause it to become trapped.³ Furthermore, both atrial tachyarrhythmias and embolic phenomena are among the possible clinical manifestations described for this malformation.⁴ As Bendayán et al highlighted, this condition is poorly described in the literature, which is more likely due to the rarity

of the malformation than to it being of little clinical relevance.⁵

Although it is true that the CTD diagnosis is complex, as there is no clear way of defining the different anatomical variations due to persistent right sinus venous valve, we believe that this is a relevant (although infrequent) condition that must be taken into account even in cases where flow obstruction is not present.

Juan A. Sánchez-Brotons, Francisco J. López-Pardo,
María J. Rodríguez-Puras and José E. López-Haldón
Servicio de Cardiología, Hospital Universitario Virgen del Rocío, Sevilla,
Spain

REFERENCES

1. Sánchez Brotons JA, López Pardo FJ, Rodríguez-Puras MJ, López-Haldón JE. *Cor triatriatum dexter* en la edad adulta. *Rev Esp Cardiol.* 2010;63:998-9.
2. Jodfat UA. Right atrial membrana interfering with insertion of pulmonary artery catheter. *Anesthesiology.* 2000;93:576-8.
3. Roldán FJ, Vargas-Barrón J, Espínola-Zavaleta N, Romero-Cárdenas A, Keirns C, Vázquez-Antona C, et al. Cor triatriatum dexter: transesophageal echocardiographic diagnosis and 3-dimensional reconstruction. *J Am Soc Echocardiogr.* 2001; 14:634-6.
4. Ott DA, Cooley DA, Angelini P, Leachman RD. Successful surgical correction of symptomatic cor triatriatum dexter. *J Thorac Cardiovasc Surg.* 1979;78:573-5.
5. Kessel-Schaefer A, Linka A, Pretre R, Buser P. Inferior sinus venosus defect associated with incomplete cor triatriatum dexter and patent foramen ovale. *Eur J Echocardiogr.* 2004;7:239-42.