Letters to the Editor

Reply to Masutani et al—Protective Factors That Maintain Asymptomatic Longevity in Untreated Congenitally Corrected Transposition of Great Arteries

To the Editor:

We appreciate the insightful comments from Professor Masutani and his colleagues. We agree that the presence/absence of pulmonary stenosis (PS) is important in this case. We performed a reanalysis using computed tomography (CT) images. [Figure 1](#) is a 3-dimensional CT image showing significant constriction and subsequent dilation of the main pulmonary artery. Although additional reexaminations, including echocardiography, should have been performed, we were unable to take this course of action because the patient, unfortunately, had died by the time of writing. As a result, we could not determine the presence or absence of PS.

Helsen et al. reported that in patients with congenitally corrected transposition of the great arteries, those with PS

with a pressure gradient of ≥ 30 mm Hg had a better prognosis than those without PS.¹ One of the main reasons that PS has been thought to improve prognosis is that it prevents the development of systemic atrioventricular valvular regurgitation by inducing deviation of the interventricular septum toward systemic ventricular.^{2,3} In this case, the measured values of CT images showed that the constricted portion of the main pulmonary artery was not narrow, and an echocardiogram showed that the mitral regurgitation pressure gradient was 36 mm Hg. The degree of PS, if any, was therefore expected to be relatively mild.

Ethics Statement

This article has adhered to the relevant ethical guidelines.

Kohei Osakada, MD
okouhei0905@gmail.com

Masanobu Ohya, MD
 Kenji Waki, MD
 Hiroshi Nasu, MD
 Kazushige Kadota, MD, PhD

Figure 1. A 3-dimensional computed tomography image showing the pulmonary artery in a systolic phase from a right anterior oblique angle of 30 degrees, which revealed a significant constriction (**yellow arrow**) and subsequent dilation of the main pulmonary artery. The measured values of the constricted part were as follows: area, 414 mm²; perimeter, 73.7 mm; major axis diameter, 27.0 mm; and minor axis diameter, 18.9 mm.

Funding Sources

The authors have no funding sources to declare.

Disclosures

The authors have no conflicts of interest to disclose.

References

1. Helsen F, De Meester P, Van Keer J, et al. Pulmonary outflow obstruction protects against heart failure in adults with congenitally corrected transposition of the great arteries. *Int J Cardiol* 2015;196:1-6.
2. Kral Kollars CA, Gelehrter S, Bove EL, Ensing G. Effects of morphologic left ventricular pressure on right ventricular geometry and tricuspid valve regurgitation in patients with congenitally corrected transposition of the great arteries. *Am J Cardiol* 2010;105:735-9.
3. Kutty S, Danford DA, Diller GP, Tutarel O. Contemporary management and outcomes in congenitally corrected transposition of the great arteries. *Heart* 2018;104:1148-55.