

A continuous murmur in an elderly woman

Masaki Itagane ^{1*}, Kiyoshi Kinjo¹, and Kazuhito Hirata ²

¹Division of General Internal Medicine, Okinawa Chubu Hospital, 281 Miyazato, Uruma City, Okinawa 904-2293, Japan; and ²Division of Cardiology, Okinawa Chubu Hospital, 281 Miyazato, Uruma City, Okinawa 904-2293, Japan

Received 12 May 2020; first decision 9 June 2020; accepted 3 July 2020; online publish-ahead-of-print 6 August 2020

A 70-year-old female presented with chest pain on exertion. Auscultation revealed Grade 3/6 continuous murmur best heard at the mid-left sternal border. Left-right shunt, including patent ductus arteriosus, coronary-pulmonary artery fistula (CPAF), and ruptured sinus of Valsalva aneurysm were suspected.¹

Laboratory studies showed normal cardiac enzymes. Electrocardiogram on presentation showed sinus rhythm with no ST-T changes. Echocardiography demonstrated normal cardiac function with no evident intracardiac shunts. Contrast-enhanced three-dimensional coronary computed tomography (CT) scan was obtained which revealed multiple fistulous communications arising from both the left and right coronary arteries with drainage into the main pulmonary trunk (Figure 1), thus the diagnosis of CPAF was made. There was no stenosis in the coronary arteries.

Most coronary artery fistulas are small, the left-to-right shunt is minimal, and the patient is asymptomatic although they may have a loud continuous murmur.² Sometimes, the patient may develop symptoms resulting from myocardial ischaemia or heart failure.

Treatment of CPAF includes surgical ligation and transcatheter embolization, depending on factors such as the presence of symptoms, the size and type of involved vessels, and the presence of other cardiovascular disorders.² Because of symptomatic CPAF in this elderly female, a treadmill test and myocardial perfusion scintigraphy to evaluate myocardial ischaemia and possible transcatheter closure of the fistula for symptomatic relief were recommended, but the patient declined. After a 6-month follow-up visit, she did not experience any worsening symptoms and was able to lead her daily life without problems.

In elderly patients, symptomatic CPAF's are rare. The presence of continuous murmur prompts the performance of coronary CT which is invaluable in formulating correct diagnosis as well as treatment plans.

Acknowledgements

We thank Dr Osamu Fukuyama (Division of Cardiology, University of Hawaii) for editing a draft of this manuscript.

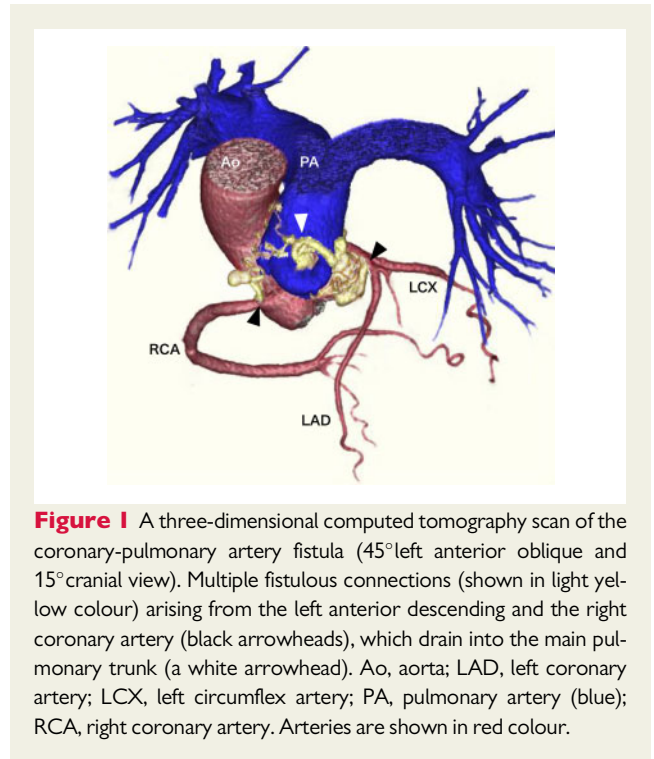


Figure 1 A three-dimensional computed tomography scan of the coronary-pulmonary artery fistula (45°left anterior oblique and 15°cranial view). Multiple fistulous connections (shown in light yellow colour) arising from the left anterior descending and the right coronary artery (black arrowheads), which drain into the main pulmonary trunk (a white arrowhead). Ao, aorta; LAD, left coronary artery; LCX, left circumflex artery; PA, pulmonary artery (blue); RCA, right coronary artery. Arteries are shown in red colour.

Consent: The author/s confirm that written consent for submission and publication of this case report including image(s) and associated text has been obtained from the patient in line with COPE guidance.

Conflict of interest: none declared.

References

- Ginghină C, Năstase OA, Ghiorgiu I, Egher L. Continuous murmur—the auscultatory expression of a variety of pathological conditions. *J Med Life* 2012;**5**:39–46.
- Verdini D, Vargas D, Kuo A, Ghoshhajra B, Kim P, Murillo H et al. Coronary-pulmonary artery fistulas: a systematic review. *J Thorac Imaging* 2016;**31**:380–390.

* Corresponding author. Tel: +81.80.6125.9695; Email: m.itagane@gmail.com

Handling Editor: Richard Alexander Brown

Handling Editor: Richard Alexander Brown

Peer-reviewers: Riccardo Liga, Piotr Nikodem Rudziński, and Dejan Milasinovic

© The Author(s) 2020. Published by Oxford University Press on behalf of the European Society of Cardiology.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.