

# Endomyocardial fibrosis and calcification in an elderly patient

Tomonobu Yanase MD | Tomohiro Nakamura MD  | Yumiko Haraguchi MD | Mitsunari Matsumoto MD

Department of Internal Medicine, Saitama Citizens Medical Center, Saitama, Japan

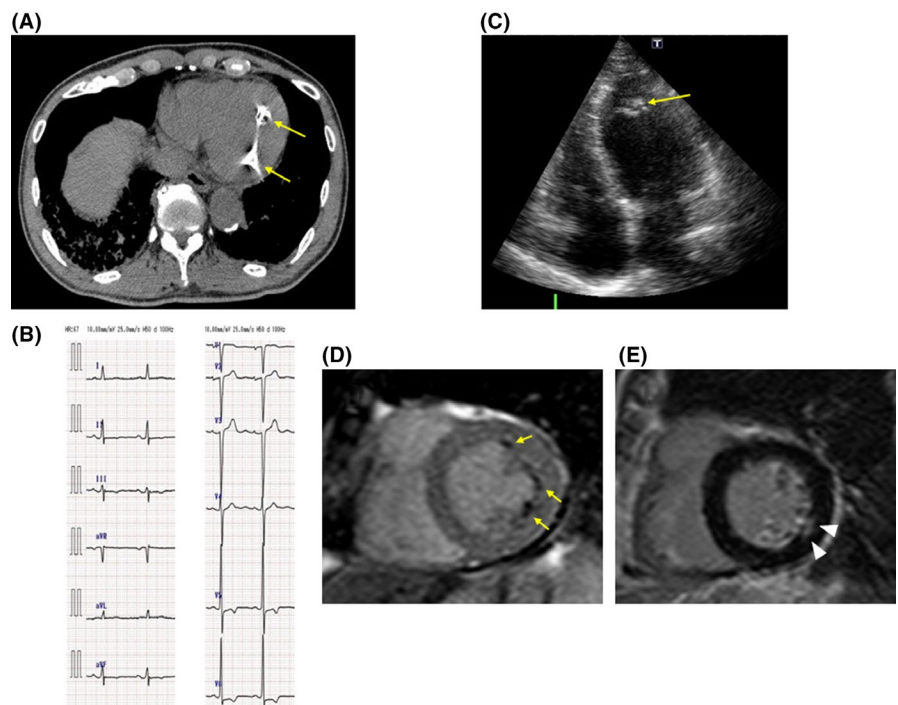
## Correspondence

Tomohiro Nakamura, Saitama Citizens Medical Center, Saitama, Japan.  
Email: nakamuratomo@gmail.com

**KEYWORDS:** cardiac biopsy, cardiovascular medicine, elderly, endomyocardial fibrosis

A 77-year-old Japanese man admitted to our hospital due to pneumonia. Chest computed tomography incidentally showed calcifications of left ventricular endomyocardium (Figure 1A). He had no remarkable medical history including tuberculosis, malignancy, radiotherapy, and heart disease. He had no record of overseas travel. White blood cell count was 5600/ $\mu$ L, and the absolute eosinophil count was 151/ $\mu$ L. Serum total protein, albumin, creatinine, calcium, phosphorus, the 25-hydroxyvitamin D, and parathyroid hormone level were within normal range, and body mass index was 21.0 kg/

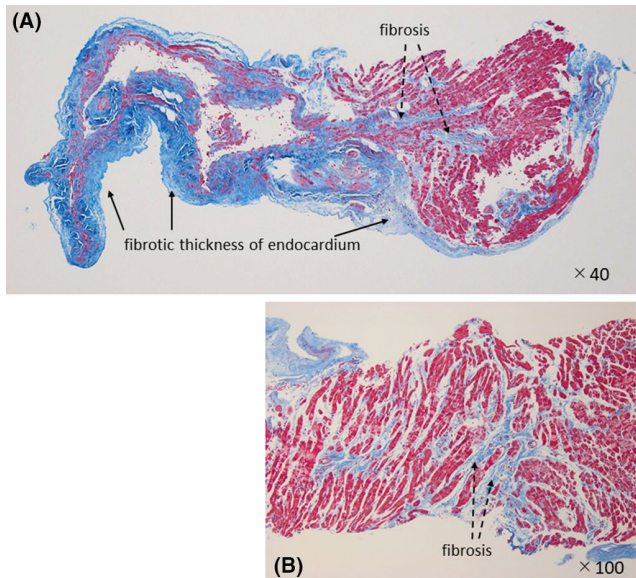
m<sup>2</sup>. Electrocardiogram showed sinus rhythm, ST depression with inverted T wave in leads V5 and V6, and high electric potential of RV5 + SV1 (Figure 1B). Echocardiography revealed sporadic endomyocardial calcifications predominantly around the apex with apical obliteration, and E/e' index was elevated to 18.3 (Figure 1C). Cardiac magnetic resonance imaging showed endomyocardial calcification (Figure 1D), and delayed imaging revealed the area of patchy intramyocardial gadolinium enhancement (Figure 1E). Coronary angiography revealed no stenosis. Histopathology by endomyocardial



**FIGURE 1** Chest computed tomogram (A), electrocardiogram (B), and echocardiogram (C) on admission. Perfusion image (D) and late gadolinium enhancement image (E) by cardiac magnetic resonance. Yellow arrows indicate calcifications of left ventricular endomyocardium. White arrowheads point to the area of patchy gadolinium enhancement

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2019 The Authors. *Journal of General and Family Medicine* published by John Wiley & Sons Australia, Ltd on behalf of Japan Primary Care Association.



**FIGURE 2** Histopathological images by Masson's trichrome stain (original magnification A:  $\times 40$ , B:  $\times 100$ )

biopsy from the right ventricle demonstrates fibrotic thickness of the endocardium due to the proliferation of acellular collagen (Figure 2A,B), but in the absence of eosinophilic infiltration. On the basis of these results, we diagnosed biventricular endomyocardial fibrosis (EMF) with chronic fibrotic change or calcification.

Although EMF is a progressive restrictive cardiomyopathy frequently observed in tropical countries, it is poorly understood disease in developed countries because of its low incidence.<sup>1,2</sup> The clinical manifestations of EMF, which is characterized by fibrous endomyocardial hypertrophy and calcification in the ventricle, is related to the presence of heart failure. Since the appropriate treatments have not yet been established, the prognosis of EMF is poor, with a mortality estimated at 25% per year.<sup>3</sup> EMF should be

considered as a differential diagnosis when physicians encounter a patient presenting with calcification in the ventricle, or heart failure due to restrictive cardiomyopathy, even in an elderly patient.

#### ACKNOWLEDGEMENT

None.

#### CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

#### ORCID

Tomohiro Nakamura  <https://orcid.org/0000-0003-0051-2033>

#### REFERENCES

1. Mocumbi AO, Ferreira MB, Sidi D, Yacoub MH. A population study of endomyocardial fibrosis in a rural area of Mozambique. *N Engl J Med.* 2008;359(1):43–9.
2. Conte L, Fejzo M, Rossi A, Zuin M, Roncon L. Endomyocardial fibrosis: a rare case of diastolic heart failure in a European Caucasian elderly woman. *Heart Lung Circ.* 2018;27(3):e31–3.
3. Hare JM. The dilated, restrictive, and infiltrative cardiomyopathies. In: Braunwald's Heart Disease, 9th edn, vol. 2. Braunwald E (ed). Philadelphia, PA: Elsevier Saunders; 2012: pp. 1576–8.

**How to cite this article:** Yanase T, Nakamura T, Haraguchi Y, Matsumoto M. Endomyocardial fibrosis and calcification in an elderly patient. *J Gen Fam Med.* 2019;20:157–158. <https://doi.org/10.1002/jgf2.246>