

String of pearls thrombosis of the left ventricle after myocardial infarction

Antonio Salsano ^{1,2,*†}, Matilde Bertramino^{3,4†}, Luisiana Pastorino^{5‡}, Italo Porto^{3,4†}, and Francesco Santini^{1,2†}

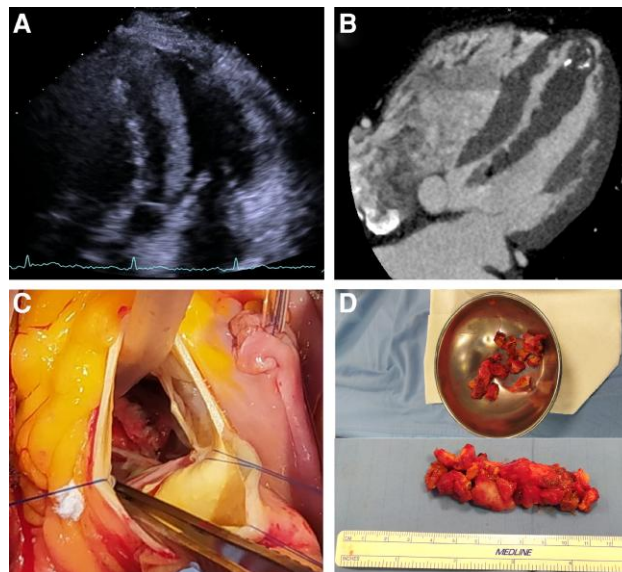
¹DISC Department, University of Genoa, Genoa, Italy; ²Division of Cardiac Surgery, IRCCS Ospedale Policlinico San Martino, Genoa, Italy; ³Department of Internal Medicine and Specialties (Di.M.I.), University of Genoa, Genoa, Italy; ⁴Cardiology Unit, IRCCS Ospedale Policlinico San Martino, Genoa, Italy; and ⁵Department of Cardiology, ASL 3 Genovese, Ospedale Villa Scassi, Genoa, Italy

Received 3 May 2023; first decision 15 May 2023; accepted 30 May 2023; online publish-ahead-of-print 1 June 2023

A 48-year-old-man has been admitted to our department with a transient ischemic attack. Seven years ago, he had a myocardial infarction (MI) with simultaneous multiple thromboses of coronary, splenic, and renal arteries. From the time of the MI, when a small mural thrombus in the left ventricle was found, the patient received vitamin K antagonist therapy, which was occasionally discontinued without medical reasons.

On admission, transthoracic echocardiography showed an impaired left ventricular ejection fraction (EF, 44%) with a left ventricular apical

akinesia and an unusual pedunculated mass measuring 10 × 1.5 cm with a non-homogeneous texture, projecting from the apex towards the left ventricular outflow tract (see [Supplementary material online, Panel A, Supplementary material online, Videos S1–S3](#)). Thoracic computed tomography showed a suspected intraluminal thrombus with irregular margins attached to the apex of the heart through a calcific core and lack of contrast enhancement (see [Supplementary material online, Panel B, Supplementary material online, Video S4](#)). Anticoagulation with



* Corresponding author. Tel: 00390105555018, Email: ant.salsano@gmail.com

† IRCCS Ospedale Policlinico San Martino, University of Genoa, Largo Rosanna Benzi, 10, Genoa 16132, Italy.

‡ Ospedale Villa Scassi, Corso Onofrio Scassi, 1, Genoa 16149, Italy.

Handling Editor: Attila Kovacs

© The Author(s) 2023. 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-NonCommercial License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact journals.permissions@oup.com

unfractionated heparin was started, and urgent cardiac surgery was performed. A ‘string of pearls’ giant frail mass was successfully removed through the aortic valve (see [Supplementary material online, Panel C, D](#)). The histological examination confirmed the diagnosis of blood clot composed of fibrinous material permeated with red blood cells and a calcified pedicle. The postoperative course was uneventful, and thrombophilia screening including factor V Leiden, prothrombin 20210A mutation, fasting serum homocysteine, lupus anticoagulant, anticardiolipin antibodies, antithrombin deficiency, protein S deficiency, and protein C deficiency resulted negative. Mural or round left ventricular thrombosis is a common finding after acute MI. However, elongated and pedunculated thrombi have been rarely reported. We hypothesize that the discontinuation of oral anticoagulant in combination with the activation of platelets due to the shear forces imposed by the blood flow and affected by the inflammatory state of the endothelium, possibly mediated by the functional state of red blood cells, led to a floating composition of ‘white’ and ‘red’ clots.

Supplementary material

[Supplementary material](#) is available at *European Heart Journal – Case Reports*.

Consent: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

Conflict of interest: None declared.

Funding: None declared.

Data availability

No new data were generated or analysed in support of this research.