Triple intracardiac thrombus

Simon Andreas Müggler,^{1,2} Nicoline Kool,¹ Katharina Winter¹

¹Department of Internal Medicine and Cardiology, Zollikerberg Hospital, Zollikerberg, Switzerland
²Faculty of Medicine, University of Zurich, Zurich, Switzerland

Correspondence to
 Dr Simon Andreas Müggler;
 simon.mueggler@gmx.net

Accepted 30 January 2020

DESCRIPTION

A 58-year-old woman with new onset atrial fibrillation with rapid ventricular response (heart rate (HR) 161 bpm) and acute decompensated heart failure of unknown aetiology was admitted to our emergency department. Anticoagulation with unfractionated heparin was started immediately and transoesophageal echocardiography (TOE) to rule out left atrium and left atrial appendage (LAA) thrombus before early electrical cardioversion was

Figure 1 Transoesophageal echocardiography (TOE) colour doppler mode (A) and three-dimensional mode (B) of the interatrial septum showing a thrombus 'in transit' in an atrial septal defect with left to right shunt. TOE three-dimensional mode depicting a large thrombus in the left atrial appendage (C) and transthoracic echocardiography showing a thrombus in the apex of the left ventricle (D, arrow). HR, heart rate.

Video 1 Transoesophageal echocardiography colour doppler mode of the interatrial septum showing a thrombus 'in transit' in an atrial septal defect with left to right shunt

Video 2 Transoesophageal echocardiography three-dimensional mode of the interatrial septum showing a thrombus 'in transit' in an atrial septal defect

Video 3 Transoesophageal echocardiography three-dimensional mode depicting a large thrombus in the left atrial appendage

performed.^{1,2} TOE showed a thrombus 'in transit' in an atrial septal defect (ASD) with left to right shunt (figure 1A,B, videos 1 and 2), and a large thrombus in the LAA (figure 1C, video 3). Additional transthoracic echocardiography showed

Video 4 Transthoracic echocardiography showing a thrombus in the apex of the left ventricle

© BMJ Publishing Group Limited 2020. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Müggler SA, Kool N, Winter K. *BMJ Case Rep* 2020;**13**:e234475. doi:10.1136/bcr-2020-234475

Learning points

- In atrial fibrillation of unknown duration without established anticoagulation left atrium and left atrial appendage (LAA) thrombus must be excluded by transoesophageal echocardiography before early cardioversion.
- If left atrium or LAA thrombus is found in atrial fibrillation, immediate cardioversion in haemodynamically stable situations should not be done but anticoagulation therapy with repeated imaging is indicated.
- The optimal anticoagulation therapy in multilobar intracardiac thrombus is not known, empirical anticoagulation with unfractionated heparin and apixaban showed complete resolution of multilobar intracardiac thrombus in our case.

severely reduced left ventricular (LV) ejection fraction of 25%–30% and a third intracardiac thrombus in the apex of the left ventricle (figure 1D, arrow; video 4). Thus, cardioversion was contraindicated due to a haemodynamically stable situation¹³ and medical treatment for rate control of atrial fibrillation along with medical treatment of heart failure was established. Since no guideline recommendations or even case reports on the optimal anticoagulation management of triple intracardiac thrombus exist, empirical anticoagulation with unfractionated heparin was continued and switched to apixaban 14 days

later after complete resolution of the LV and ASD thrombus. Screening for various coagulopathies (factor V Leiden mutation, prothrombin mutation G20210A, protein C deficiency, protein S deficiency, antiphospholipid syndrome, antithrombin deficiency), drug-induced thrombophilia and for solid and haematological malignancies was negative. Follow-up 2 months later showed complete recovery of systolic LV function, stable sinus rhythm and no evidence of residual intracardiac thrombus.

Contributors NK and KW drafted the manuscript, SAM corrected and completed the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Steffel J, Verhamme P, Potpara TS, *et al.* The 2018 European heart rhythm association practical guide on the use of non-vitamin K antagonist oral anticoagulants in patients with atrial fibrillation. *Eur Heart J* 2018;39:1330–93.
- 2 Kirchhof P, Benussi S, Kotecha D, *et al.* 2016 ESC guidelines for the management of atrial fibrillation developed in collaboration with EACTS. *Eur Heart J* 2016;37:2893–962.
- 3 Farkowski MM, Jubele K, Marín F, *et al.* Diagnosis and management of left atrial appendage thrombus in patients with atrial fibrillation undergoing cardioversion or percutaneous left atrial procedures: results of the European heart rhythm association survey. *Europace* 2020;22:162–9.

Copyright 2020 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/> BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

Customer Service

If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow