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Caught in the middle: Thrombus-in-transit through patent foramen ovale

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ARTICLE INFO

Article history:
Received: 21 October 2014
Accepted: 27 October 2014
Available online: 22 November 2014

Thrombus-in-transit entrapped by patent foramen ovale (PFO) is a clinically well-recognized phenomenon that is extremely difficult to demonstrate by echocardiography due to its transient nature. We describe a case of thrombus-in-transit trapped within a PFO during paradoxical embolization with the help of echocardiographic images.

A 70-year-old female with a known history of pulmonary hypertension presented to the emergency room with altered mental status, syncope and severe hypotension. She was intubated and mechanically ventilated for severe respiratory distress. Neuroimaging revealed an acute left occipital infarct. A transthoracic echocardiography, performed to evaluate for embolic source, demonstrated a mobile echo-dense mass attached to the atrial septum within the right atrium (Image 1). Transesophageal echocardiography (TEE) confirmed a thrombus-in-transit through the PFO (Image 2/Video 1). Further work up revealed acute deep vein thrombosis in right lower extremity. She was deemed to be poor surgical candidate and managed conservatively with systemic anticoagulation. Follow up echocardiogram did not show any thrombus in the atria suggesting paradoxical embolism (Image 3). She was terminally weaned after her hospital course was complicated by gastro-intestinal bleeding and cardiac arrest.

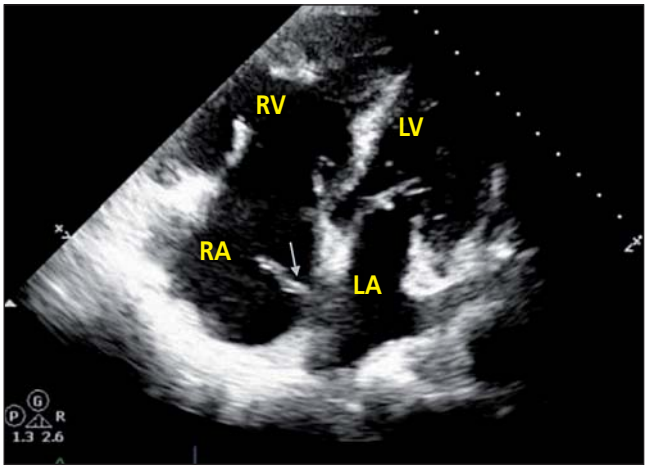

Image 1 – Apical 4 chamber view of transthoracic echocardiogram showing a 2.5×0.25 cm mobile echo-dense mass attached to the atrial septum within the right atrium.

PFO, found in up to one fourth of the adult population, is associated with cryptogenic stroke and arterial embolism, with paradoxical embolism being the potential mechanism. Echocardiography is the key in making the diagnosis of PFO [1]. However, echocardiographic

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DOI: 10.1016/j.crvasa.2014.10.002

Please cite this article as: S. Neupane, et al., Caught in the middle: Thrombus-in-transit through patent foramen ovale, Cor et Vasa 57 (2015) e59–e60 as published in the online version of *Cor et Vasa* available at http://www.sciencedirect.com/science/article/pii/S0010865014000927#

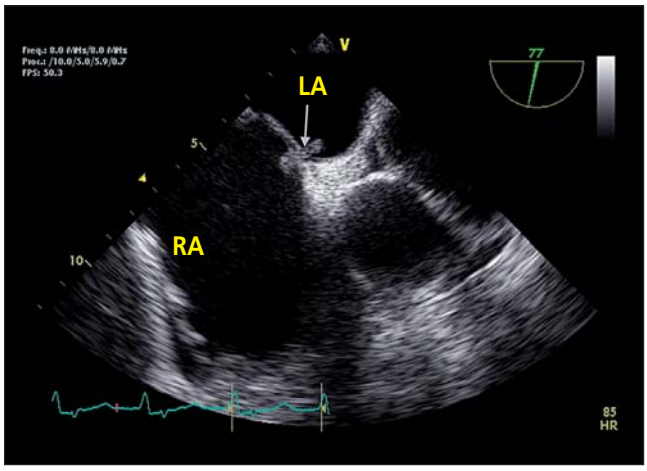

Image 2 – Biatrial view of transesophageal echocardiogram showing a 0.5×3 cm thrombus-in-transit through the PFO.

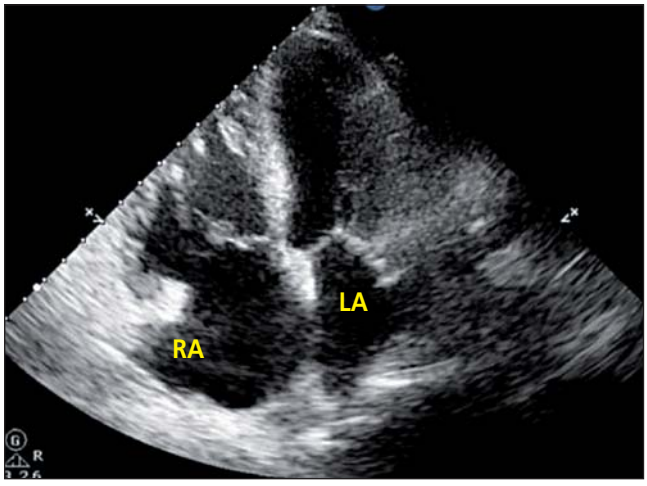

Image 3 – Apical 4 chamber view of follow up transthoracic echocardiogram showing absence of thrombus.

demonstration of thrombus crossing the PFO is difficult as it is an exceedingly transient phenomenon. The diagnosis of thrombus-in-transit has been greatly improved with the advent of TEE [2–4] but its appropriate therapy is not clearly defined until. Surgery appears to provide definitive therapeutic option including closure of PFO and is the most commonly chosen therapy [3,4]. However, successful outcomes with thrombolysis or anticoagulation alone have been reported and may be a reasonable alternative in patients with high and prohibitive surgical risks [2–4]. Thrombus-in-transit is an emergency and associated with high mortality, so therapy should be initiated promptly irrespective of mode of therapy [3,4].

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.crvasa.2014.10.002.

References

[1] D. Hausmann, A. Mugge, I. Becht, W.G. Daniel, Diagnosis of patent foramen ovale by transesophageal echocardiography and association with cerebral and peripheral embolic events, American Journal of Cardiology 70 (6) (1992) 668–672.

[2] S.I. Barbour, K.F. Izban, C.V. Reyes, et al., Serpentine thrombus traversing the foramen ovale: paradoxical embolism shown by transesophageal echocardiography, Annals of Internal Medicine 125 (2) (1996) 111–113.

[3] V. Aboyans, P. Lacroix, E. Ostyn, et al., Diagnosis and management of entrapped embolus through a patent foramen ovale, European Journal of Cardiothoracic Surgery 14 (6) (1998) 624–628.

[4] E. Fauveau, A. Cohen, N. Bonnet, et al., Surgical or medical treatment for thrombus straddling the patent foramen ovale: impending paradoxical embolism: report of four clinical cases and literature review, Archives of Cardiovascular Diseases 101 (10) (2008) 637–644.