Images in cardiology

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

Saroj Neupane a,*, Naga V.A. Kommuri b, Andrew M. Hauser b

a Department of Cardiology, St John Hospital and Medical Center, MI, USA
b Department of Cardiology, William Beaumont Hospital, Royal Oak, MI, USA

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 (Fig. 1). Transesophageal echocardiography (TEE) confirmed a thrombus-in-transit through the PFO (Fig. 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 (Fig. 3). She was terminally ill.

Fig. 1 – Apical 4 chamber view of transthoracic echocardiogram showing a 2.5 cm × 0.25 cm mobile echo-dense mass attached to the atrial septum within the right atrium.
weaned after her hospital course was complicated by gastrointestinal bleeding and cardiac arrest.

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 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**


**References**


