Abstract:
Isolated right atrial thrombus in dilated cardiomyopathy is rare. We report a case of a 68 year old female patient who presented with worsening heart failure. Two-dimensional transthoracic echocardiography showed dilated cardiomyopathy and a large type B right atrial thrombus measuring 5.6cm × 3.5 cm in size, impinging and traversing the tricuspid valve along with the phases of cardiac cycle. After therapeutic anticoagulation, echocardiographic evaluation revealed decrease in size of thrombus. The purpose of this communication is to emphasize the diagnostic and therapeutic dilemma in right atrial thrombus masquerading as a tumour.

Keyword: right atrial thrombus, dilated cardiomyopathy DCM, therapeutic anticoagulation

INTRODUCTION:
The incidence of right heart thrombus is about 4-18% [2] in cases with acute pulmonary embolism while rare in patients with DCM. Right atrial thrombus in dilated cardiomyopathy portends higher mortality risk, however they differ in clinical and echocardiographic presentations, embolic potential, prognosis and treatment. Echocardiography plays a pivotal role in the evaluation of DCM and intracardiac masses.

CASE REPORT:
68 year old female (body surface area: 1.03 m²) with dilated cardiomyopathy (DCM), was admitted for worsening heart failure (NYHA class III). Patient had no significant past history. On clinical examination her vital signs were: heart rate - 110/ min, regular, blood pressure - 100/86 mmHg, respiratory rate - 24 breaths per minute, bilateral pitting pedal edema, no evidence of deep vein thrombosis, normal heart sounds were heard, with bilateral fine basal crepitations on admission which resolved with anti-failure treatment. Electrocardiogram showed sinus tachycardia with biatrial enlargement. Chest radiography revealed cardiomegaly {cardiothoracic ratio - 0.65}, right atrial, and left ventricular enlargement.
Echocardiography revealed all 4 chambers dilated, left ventricle dimensions 5.9/5.2 with ejection fraction of 26%. Fractional shortening was 12%. TAPSE - 8.3mm, tricuspid regurgitation was mild, peak gradient 26, underestimated because of right ventricular dysfunction, Mitral regurgitation was mild. A large mass measuring 5.6×3.5 cms, occupying almost the whole of right atrial cavity, impinging and traversing the tricuspid valve along with the phases of cardiac cycle was visualized. Inferior vena cava was free of any thrombus/mass and measured 19 mm in size with no inspiratory collapse. 16 slice computed tomography suggested a strong possibility of right atrial thrombus rather than a myxoma. Since the patient was not willing for surgical management and since she had severe biventricular dysfunction we proceeded with optimal medical management with anti-failure drugs and injection heparin 5000 units IV QID for 7 days overlapped with tablet Acitrom 2 mg. Follow up echo was done every week which revealed gradual regression of the thrombus.

**DISCUSSION:**
Two major right atrial thrombus types\([1]\) with different morphology, etiology and clinical significance are identified: Type A is long, thin, extremely mobile thrombi which resembled a worm or a snake. Type B thrombus is more or less immobile, non-specific clots resembling left heart thrombi. Type A patients had a high incidence of deep venous thrombosis and a low incidence of
potentially thrombogenic cardiac abnormalities. The reverse was true for type B thrombus. Most Type A thrombi originate in peripheral veins, while most type B thrombi develop within the right heart chambers. The less mobile or adherent type B thrombus is usually implanted on the free wall of the right atrium or the interatrial septum or may be without any attachment. Its formation, in situ, is due to stasis secondary to decompensated congenital or acquired cardiac disease or to the presence of an intracardiac foreign body such as a pacing wire. It decreases or disappears with anticoagulant therapy and the outcome is usually good. The differential diagnosis between a Mobile thrombus and a Chiari network, Fibroelastoma, Metastatic tumors and Tuberculoma or between an Adherent Thrombus and a Myxoma or Vegetation on an Intracardiac pacing may be a diagnostic and therapeutic challenge.

Causes for right atrial thrombus includes hypercoagulable states [protein C deficiency, antiphospholipid syndrome, thrombocytosis], arrhythmias and patients with multiple or prolonged central lines. A peculiar subset of right atrial thrombi occurs in patients post-atrial septal defect repair, primary or pericardial patch. These thrombi usually form on the suture line or suture knot, which may even give the pedunculated appearance. Burial of the knot may help avoid this complication. A high index of suspicion is important to diagnose these cases, as thrombus is the most common cause of postoperative right atrial masses. Anticoagulation, clinical, and echocardiographic follow-up are the main line of management. Surgical exploration is indicated in persistence of thromboembolic symptoms or increase in size of thrombus.

CONCLUSION:
EXTERNAL APPEARANCES ARE MOSTLY DECEPTIVE!

A GIANT RIGHT ATRIAL THROMBUS [TYPE B] MAY APPEAR LIFE THREATENING, BUT RELATIVELY BENIGN.

BEWARE OF THIN WORM LIKE TYPE A THROMBUS – THESE WORMS MAY ENGULF LIFE.

The purpose of this communication is to emphasize the features of thrombogenic masses and to individualize treatment and avoid unnecessary intervention.

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