Case Pictorial

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Rapid Intraventricular Clot Dissolution with Enoxaparin in Ischemic Cardiomyopathy

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A 50-year-old smoker and alcoholic male was admitted (03/01/2014) with 1 month history of progressive exertional dyspnea and paroxysmal nocturnal dyspnea, tender hepatomegaly, and anasarca. He had regular, feeble pulse at 100 a minute, blood pressure of 90/70 mm Hg, severe pedal edema, raised JVP, tender hepatomegaly with significant hepatojugular reflux and moderate ascites. Cardiopulmonary examination revealed biventricular enlargement, normal heart sounds, no murmur, a moderately large right sided pleural effusion, bilateral rhonchi, and crepitations. He was treated for ischemic dilated cardiomyopathy with congestive cardiac failure since past 2 weeks. Electrocardiogram showed QS complexes in the inferior and precordial leads suggestive of old inferior and extensive anterior wall myocardial infarction. The two-dimensional echocardiography 2 weeks back (18/12/13) showed globally hypokinetic ventricles, left ventricular ejection fraction (LVEF) 14 %, moderate mitral regurgitation (MR) and grade IV tricuspid regurgitation (TR) but no intrachamber clots (Figure 1).

Though not themselves thrombolytic, use of high dose heparin or enoxaparin, relayed with warfarin, results in dissolution of cardiac clots.[1,2] Our patient achieved rapid dissolution of big clots because they were recent and effective treatment of heart failure improved the ejection fraction thereby reducing stagnation. Such rapid ventricular clot dissolution with heparin is not reported very often. A case of antiphospholipid antibody syndrome had the disappearance of an intracardiac clot within 24 h[3] of starting enoxaparin.

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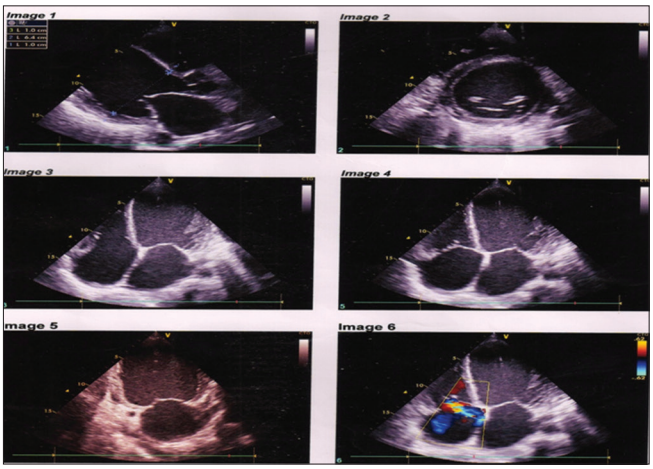

Figure 1: Echocardiogram 2 weeks before admission

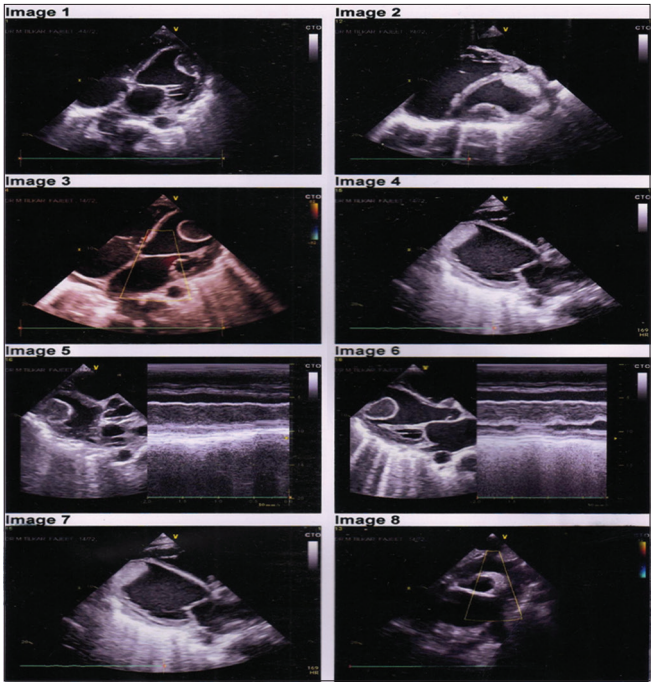

Figure 2: Echoardiogram at admission showing ventricular clots

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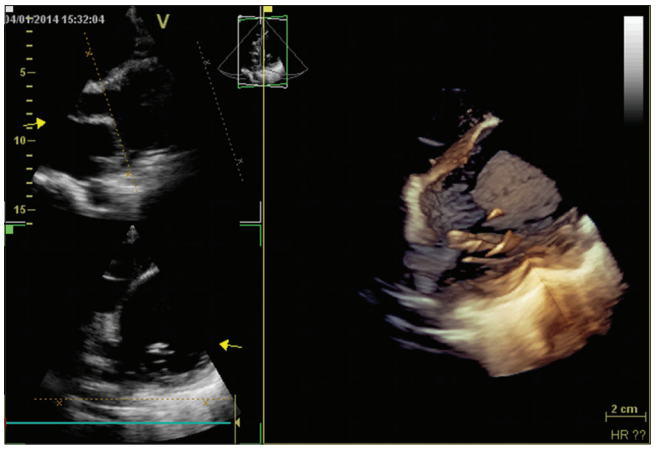

Figure 3: Four-dimensional echo showing ventricular clot

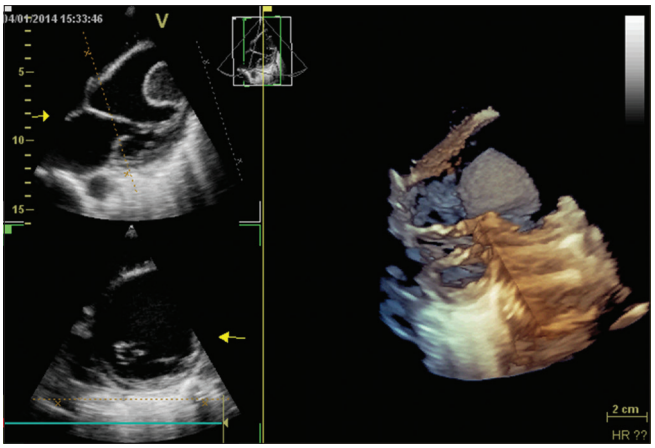

Figure 5: Four-dimensional echo showing ventricular clot

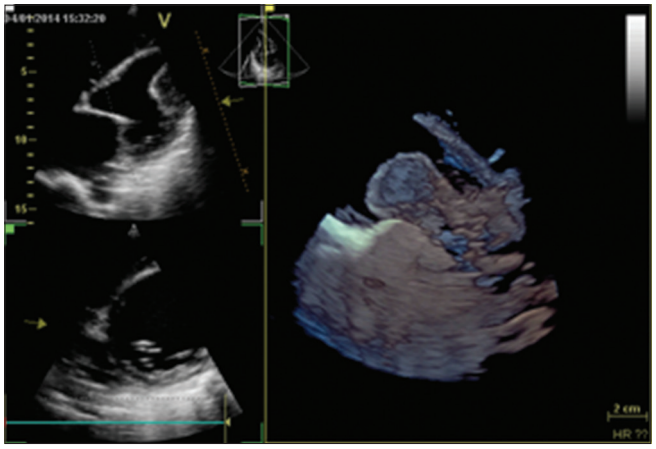

Figure 4: Four-dimensional echo showing ventricular clots

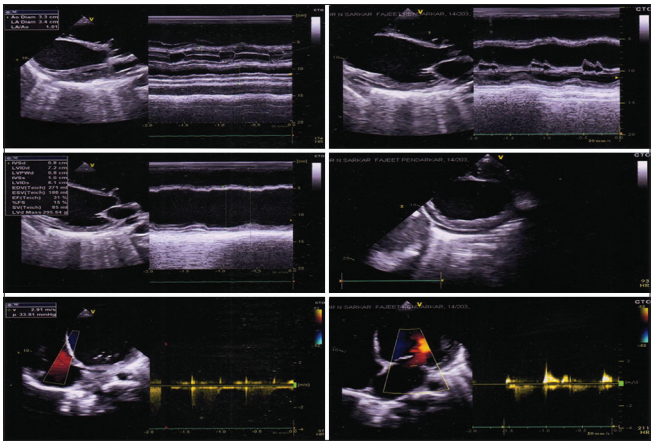

Figure 6: Echo after 1 week showing dissolution of clot

The two-dimensional (Figure 2) and four-dimensional (Figures 3-5) cardiac echocardiography and doppler on admission (4/1/14) revealed three large thrombi at the base of left atrium and both left and right ventriular apices along with biventricular dilatation and global hypokinesia with LVEF of 8-10%, mild MR, moderate TR, and pulmonary artery hypertension (PASP - 40 mmHg).

There was a significant improvement in cardiac failure with diuretics, subcutaneous enoxaparin (0.6 ml BD), warfarin, digoxin, aspirin, ramipril, antibiotics and therapeutic pleurocentesis of 750 ml fluid. A four-dimensional cardiac echocardiography a week later (11/1/14) revealed a LVEF of 25-30% with the disappearance of ventricular clots (Figure 6). The patient had experienced no clinical embolic or hemorrhagic complications during treatment.

Points to Ponder

1. Ventricular clots are sequelae of severe ventricular dysfunction.
2. Anticoagulants (injectable heparin relayed by oral warfarin) can effectively dissolute clots with minimal complications.

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