Case Report

Arterial Thromboembolism in a patient with Ischemic Dilated Cradiomypathy (IDCM)

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Abstract:

Mrs. Shikha, 51 years old pleasant lady presented to us with the complaints of acute severe pain in the left leg associated with bluish discoloration for 5 days. She is a known case of Ischemic Dilated cardiomyopathy (IDCM) for last 6 years & had history of formation of LV thrombus for repeated times. She was on regular anti-platelets, anti-ischemic & anti-coagulant drugs. Recently her echocardiogram report revealed- IDCM, Mitral regurgitation (gr-11), spontaneous echo contrast within LV, LVEF- 24%. On this admission her CT coronary angiogram of lower limb vessels revealed total occlusion associated with thrombosis of left common iliac, external iliac & internal iliac, distal popliteal, ant. & post. tibial, peroneal artreries, & on right side diffuse atherosclerosis of distal popliteal, ant & post tibial arteries. Patient was treated with anticoagulants, anti platelet, anti-ischemic & other relevant medications & referred to vascular surgeon for urgent

Introduction:

Pathogenesis of thrombosis requires one or more of three essential conditions to be present[1]. local vessel or tissue injury[2], circulatory stasis, and[3] altered blood coagulability, known as Virchow's triad. These prothrombotic factors are invariably present to some degree in myocardial diseases that make cardiomyopathy predisposed to thromboembolic events. Blood stasis predisposes to thrombosis. Cardiac chamber dilation, particularly when associated with reduced contractility, results in large end systolic volumes and blood stasis. Thrombotic and thromboembolic complications of cardiomyopathy have long been recognized.

Thrombosis represents clot formation within a cardiac chamber or vascular lumen. Thrombi can be located in the left atrial cavity (often referred to as "ball" thrombus), left ventricular cavity, or both. embolization occurs when a clot or other foreign material lodges within a vessel. The systemic arterial system is almost exclusively involved.

Thromboembolism is the combination of thrombosis & its main complication, embolism. When a thrombus occupies more than 75% of surface area of the lumen of an artery, blood flow to the tissue supplied is reduced

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oxygen & accumulation of metabolic products like lactic acid. More than 90% obstruction can result in anoxia & infarction, a mode of cell death. Spontaneous clot formation can occur within this slow moving and pooling blood. Clots within the left atrium or left ventricle can remain attached to the surface of the atrium/ventricle or they can enter the circulation and block the arteries they enter. Most commonly the clot will exit the heart, travel down the aorta, and lodge in the femoral arteries, thus interrupting blood flow to the rear legs. This is a medical emergency. Sadly, the clot could enter into any artery of the body as it exits the heart, so clinical signs can vary and include front limb lameness, inappropriate mentation, or even sudden death.

Case Report:

Mrs Shikha, 51 years old pleasant lady, wife of Mr. Idris Ali, came from Lokkhikhola, Dhangora, Sirajgonj, got admitted in cardiology ward with the complaints of acute severe pain in the left leg associated with bluish discoloration for 5 days. She is normotensive, nondiabetic & no family history of cardiovascular disease. She had no history of caludication pain or recent important surgical history.

This patient had developed cough & respiratory distress around 6 years back. Then she consulted with a cardiologist & was diagnosed as a case of IDCM with LV thrombus & treated accordingly with antiischemic, anti-platelets & anticoagulant (warfarin). Subsequently she visited several cardiologists & underwent echocardiography for several times. Most of the Echocardiogram showed LV thrombus or Spontaneous echo contrast in LV. All the time she was managed accordingly with anti-ischemic, anti-platelets & anticoagulant. Later on patient presented to us with above mentioned symptoms.

On examination, patient's left leg was cyanosed, cold. Femoral, poplitial, ant tibial & posterior tibial pulses of left leg was absent. No obvious swelling. All pulses of right limb was present. Patient's pulse was 80 bpm & BP was 90/60 mmhg. Cardiovascular system examination reveled nothing abnormality at this setting. Other systemic examination also revealed nothing abnormality.

Her investigation profile showed;

- CBC- normal
- Serum electrolytes- normal
- S. creatinine- normal (81.32 µmol/L)
- RBS- 6.7 mmol/L
- INR- 1.87 (on admission)
- Chest x-ray- Cardiomegaly
- Ultrasonography of whole abdomen-normal
- Thyroid function test- normal
- ECG- sinus rhythm, anterolateral ischemia, poor R wave progression.
- Echo- IDCM, MR (gr-11), no LV thrombus, LVEF-27% (on admission)
- CT angiogram of limb vessels
- Left lower limb- total occlusion associated with thrombosis of left common iliac, external iliac & internal iliac, distal popliteal, ant. & post. tibial, peroneal artreries. Femoral, proximal popliteal arteries were visualized.

Right lower limb- diffuse atherosclerosis of distal popliteal, ant & post tibial. but iliac, femoral, proximal popliteal arteries was visualized.

Discussion:

Arterial thromboembolism is a known complication in case of cardiomyopathy. In patients with heart failure the incidence of thromboembolism is 0.9-5.5%/year (mean 1.9%/year), but no randomized studies are available to support the indication for anticoagulant therapy in those patients. Atrial fibrillation and previous thromboembolic events seem to be the major risk factors, whereas the effect of ventricular dysfunction has not been independently evaluated; nonetheless several studies suggest that thromboembolism is more likely among those patients with lower ejection fraction and lower peak exercise oxygen consumption. The clinical opportunity of long-term anticoagulant treatment in heart failure patients should be weighted not only on the clinical markers of thromboembolic risk, but also on the relative risk/benefit ratio of the single patient.

Conclusion:

Up to date, there is no agreement on appropriate antithrombotic treatment for primary thromboembolism prophylaxis in patients with dilated cardiomyopathy with sinus rhythm. In recent years, several promising prospective trials were terminated prematurely due to inadequate enrollment. The Warfarin Aspirin-Reduced Cardiac Ejection Fraction trial may provide evidence regarding the use of anticoagulation for patients with decreased myocardial function.

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