Successful anticoagulation treatment of an ascending aortic thrombus associated with myocardial infarction and systemic embolism

Authors:
P Ng, A Rajwani, C Schultz, Royal Perth Hospital - Perth - Australia,

Topic(s):
Echocardiography: Masses and Sources of Emboli

Citation:

Background
The ascending aorta is an uncommon site for non-infective mural thrombus. The detection of such a thrombus is of particular importance, given the risk of systemic and coronary embolisation. We present a case of a 60-year-old female with an ascending aortic thrombus complicated by non-ST-elevation myocardial infarction (NSTEMI), and associated systemic embolism in the form of renal and splenic infarcts.

Case Report
A 60-year-old female was admitted to a local secondary hospital with a 4-day history of crampy abdominal pain and intermittent bilateral arm pain associated with nausea and vomiting. Past medical history included known hypertrophic cardiomyopathy, gastroesophageal reflux disease, carpal tunnel syndrome, hepatic steatosis, but no known thrombophilia or coronary artery disease. Computer tomography (CT) scan of the abdomen revealed subacute infarction of the right kidney and spleen in keeping with a thrombo-embolic event. A CT pulmonary angiogram revealed a small pulmonary embolus in the right lower lobe. Troponin I level was elevated at 11 mg/L (normal <0.04 mg/L). She was treated with aspirin, clopidogrel and therapeutic enoxaparin for a NSTEMI, and transferred to a metropolitan tertiary centre for ongoing investigation. A transthoracic echocardiogram performed showed known hypertrophic cardiomyopathy, but negative for intracardiac shunting via bubble study. Coronary angiography revealed an acutely occluded distal left anterior descending (LAD) artery with no collaterals, and mild irregularities in all other coronary arteries. A transoesophageal echocardiogram performed to exclude any intracardiac sources of emboli showed a pedunculated and mobile non-calcific mass measuring 1.0cm X 0.5cm in the posterior aspect of the ascending aorta, associated with atheroma in the aortic arch. A laboratory workup for antiphospholipid syndrome, antithrombin III, protein S and protein C deficiency were negative. After discussion with the multidisciplinary Heart team, the consensus was that the aortic mass was likely thrombus formation relating to erosion of aortic atheroma. It was hypothesised that this may have resulted in distal embolisation to the left kidney and spleen, and possibly also caused embolisation to the LAD artery, although the cause of the pulmonary embolism was still unknown. The patient was then discharged on rivaroxaban and aspirin.

A repeat transoesophageal echocardiogram was performed 4 months after discharge to assess the ascending aortic mass. It showed complete resolution of the mass in the ascending aorta, with no change in any other cardiac structures.

Discussion
Although thrombus formation is uncommon in the ascending aorta, certain conditions, such as pregnancy and thrombophilia increase its risk. Several case reports of ascending aortic thrombus were found in the literature, but this will be the first to report complete resolution with treatment using a direct oral anticoagulant.
Abstract:

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