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Letter to the Editor

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Management of acute coronary syndromes in patients with prosthetic heart valves

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Dear Editor,

We have recently read with great interest the article reported by Donmez et al which was published in the last issue of *Cardiology in the Young*[1]. We would like to contribute to the case report by drawing attention to the diagnosis and management of acute coronary syndrome due to coronary embolism in patients with prosthetic heart valves.

In the present case, a 17-year-old boy with bileaflet mechanical aortic prosthesis was admitted with non-ST elevation acute coronary syndrome under subtherapeutic anticoagulation. Transthoracic echocardiography revealed normally functioning prosthesis with normal transvalvular gradients. Subsequently, coronary angiography was performed which showed embolic subocclusion in the middle segment of the left anterior descending artery. In such cases, prosthetic valve thrombosis and subsequent coronary embolism as a complication should have been suspected on admission based on the clinical findings. There is a controversy regarding the treatment of patients with coronary embolism. Recently, we have reported the status of the epicardial coronary arteries in non-ST elevation acute coronary syndrome in patients with mechanical prosthetic heart valves. In this study, thrombolytic therapy with low-dose slow infusion of tissue-type plasminogen activator has proved its efficacy and safety in patients with concomitant acute coronary syndrome and prosthetic valve thrombosis[2].

The major concern regarding the management of this patient is the lack of transoesophageal echocardiographic examination. When a patient with prosthetic heart valve is admitted with non-ST segment elevation acute coronary syndrome, prosthetic valve thrombosis needs to be excluded by transoesophageal echocardiography before coronary angiography. Since the patient had aortic prosthesis, urgent conventional coronary angiography without transoesophageal echocardiographic examination may carry a high risk of thromboembolism due to catheter manipulation during coronary angiography. In the present case, it would have been better if coronary angiography had been performed just after transoesophageal echocardiography findings for safe catheter intervention.

In the present report, the patient was treated with a combination of anticoagulation with antiplatelet agents. The authors declare that the treatment was successful; however, the figure 1 does not demonstrate the exact regression of the coronary thrombus. The two images of figure 1 are recorded from different angle of views. Hence, the left anterior descending coronary artery in figure 1b is on the right upper side of the seen and has still a hazzy appearance in the middle segment. Another view from the same aspect as in figure 1a is needed in order to be sure regarding the success of the treatment.

In prosthetic heart valve patients who were admitted with acute coronary syndrome, prosthetic valve thrombosis may accompany coronary thrombus in the majority of patients[3]. In such situations, thrombolytic therapy may be a favourable treatment strategy that aims to lyse both valvular and coronary thrombi in the absence of any contraindications. The fresh nature of the embolic thrombus may play a role in the successful outcome of thrombolytic therapy. In our recently published report, thrombolytic therapy was considered as an initial therapy in the management of prosthetic valve thrombosis and related coronary embolism, with successful outcomes for both prosthetic and coronary thromboses[2].

In conclusion, coronary angiography should be deferred until after transoesophageal echocardiography due to risk of thromboembolism during catheter manipulation in aortic prosthetic valve thrombosis patients who are admitted with acute coronary syndrome. Thrombolytic therapy may be considered as an initial treatment modality in prosthetic valve thrombosis patients with coronary embolism.

Conflict of Interests. The authors declare that they have no conflict of interest.

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