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An echocardiographic observation over the disappearing process of the prosthetic valve thrombus caused by the inflammatory hypercoagulability; a case report

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Background: Whenever fever and inflammatory reaction continue for a while in the patients with a prosthetic valve, than usual, we must keep infective endocarditis in mind. On the other hand, inflammation and thrombosis are well known to coexist often. There are several reports of thrombotic valves associated with inflammation-activated hypercoagulability. Furthermore, C-reactive protein (CRP) has been reported to imply an increased risk of thrombus especially in the presence of an injury on the prosthetic valve.

Case report: We report a case of a 70-year-old male with a leaflet thrombus on the bioprosthetic aortic valve. He suffered from fever, and symptoms of heart failure and was hospitalized for treatment. Blood tests presented that white blood cell count was 4900/μL (neutrophil 81.1%) and CRP 10.82 mg/dL. Infectious endocarditis (IE) was suspected. Transthoracic echocardiography (TTE) was per-formed, however, vegetation and abscess were not found. Noteworthily, the bioprosthetic valve leaflet on the right coronary cusp showed thickening and opening dysfunction (Figure A, parasternal short axis). Mean pressure gradient (mPG) through the aortic valve was 15mmHg and peak velocity (Vmax) 2.7m/s. Blood culture was negative, and his body temperature and CRP were improved by empirical antibiotic administration. The anticoagulation therapy with warfarin was started, he was discharged from the hospital and followed up in the outpatient clinic. TTE after the initiation of anticoagulation therapy, did not reveal any more dysfunction on the bioprosthetic valve (mPG: 9mmHg, Vmax: 2.2m/s) (Figure B, parasternal short axis). The diagnostic and therapeutic process of this case implied success. The opening-dysfunction of prosthetic valve leaflets was reversible and therefore, we concluded that the thickening of the prosthetic valve could be attributed to thrombus adhesion. Computed Tomography (CT) was not performed because he suffered from chronic kidney disease.

Conclusion: Surely, CT is very useful for the evaluation of thrombotic valves in the patients in whom it is permissible to use contrast agent. However, we could successfully evaluate the recovery process of leaflet thrombosis by echocardiography because of a difficult reason of CT use in this case. The prolongation of inflammatory reaction in the patients with a prosthetic valve should keep IE in mind in everyday life. Even if the findings of bacterial infection are obscure, it is more and more important to observe carefully the change of leaflets, whenever an open-dysfunction and a thrombus adhesion of the prosthetic valves exist.

Abstract P1307 Figure.