P702

An unusual echocardiographic finding of protrusive vegetation caused by perivalvular abscess perforation into the left atrium

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Background: It is well-known that Infective endocarditis (IE) caused by S. aureus progresses rapidly and is highly destructive. The most often abscess formation after aortic valve replacement (AVR) is the mitral-aortic intervalvular fibrosa (MAIVF). It is difficult to cure MAIVF radically once infection occurs, and then the abscess tends to spread. After abscess formation is once established, IE tends to be widespread, the prognosis is definitely poor unless surgical repairment is executed, and then an emergency surgery is essential and unavoidable for complete cure. We report an unusual case of aortic valve abscess with perforation of vegetation into the left atrium after aortic valve replacement.

Case report: A 77-year-old man underwent the bioprosthetic AVR for aortic valve stenosis one month ago. On the 9th day after discharge, he visited the hospital for the follow-up. At the time, the body temperature was 36.6 ° C, the blood pressure 133/50 mmHg, white blood cell count 10500/μL, and C-reactive protein 3.31 mg/dL. Transthoracic echocardiography (TTE) demonstrated the perivalvular abscesses on the prosthetic aortic valve and mass structures attached to the MAIVF in the left atrium (Figure A, C). He was hospitalized again and had an emergency re-operation. Intraoperative transesophageal echocardiography (TEE) showed a perivalvular abscess on the prosthetic valve, and a high-intensity structure (vegetation like) protruding from the Valsalva Sinus into the left atrium of the MAIVF (Figure B, D). Surgical findings did not reveal any wart on the native valve itself. One-third of the annulus was disrupted. The subvalvular tissue all around was abscessed. Notably, the abscess cavity between NCC and LCC reached MAIVF of the anterior mitral leaflet, and the structure projecting to the left atrium was vegetation. In this case, TTE pointed out a perivalvular abscess of the aortic valve, IE was suspected at the time of outpatient visit at an early stage after discharge, and the spread of inflammation was observed with a high speed beyond the expectation at the time of operation.

Conclusion: Early after the operation, TTE revealed a mass was protruded into the left atrium. Generally, vegetation is soft and flexible in itself. However, in this case, the vegetation was less mobile, and for that reason, abscesses or tumors were suspected. TEE enabled us to obtain anatomically more detailed information and to foresee the left atrial wall repairment at the time of reoperation. We reported an unusual case of IE with solid vegetation attached to the wall and difficult to diagnose.

Abstract P702 Figure.