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LETTER TO THE EDITOR

Extensive Fulminant Multivalvular Infective Endocarditis

We present a case of a 39 year-old female with a history of intravenous drug use (IVDU), diagnosed with staphylococcus aureus endocarditis. On initial presentation, the transthoracic echocardiogram showed evidence of multivalvular involvement and severe aortic regurgitation. She was started on intravenous cloxacillin and gentamycin, and was transferred for further management. A transesophageal echocardiogram (TEE) demonstrated vegetations associated with all four cardiac valves, and both ventricular chambers (Fig. 1A to 1D, Online Videos 1, 2, 3, and 4). As she remained afebrile on appropriate antibiotics without evidence of hemodynamic compromise, and given her IVDU and extensive multivalvular involvement that would increase her operative risk, she was treated medically.

On day 10, she developed acute pulmonary edema. A repeat TEE showed a large perforation of the anterior leaflet of the mitral valve with severe mitral regurgitation (Fig. 1E to 1F, Online Videos 5A, to 5B). She was subsequently taken to the operating room. Due to extensive valvular destruction that mitigated preservation of any of her native valves, she underwent quadruple-valve replacement, with mechanical valves in the mitral and aortic positions and bioprosthetic valves in the tricuspid and pulmonic positions, and excision of ventricular

vegetations (Fig. 2). The patient did well post-operatively and completed antibiotic therapy in a supervised environment.

Extensive endocarditis involving all 4 cardiac valves is a very rare occurrence, being more common in the setting of IVDU (1). Valve replacement is generally a treatment of last resort, due to the high incidence of early and late reinfection. To our knowledge, this is the first reported case of fulminant infective endocarditis involving all 4 cardiac valves and both ventricular chambers, requiring vegetectomy and operative replacement of all 4 cardiac valves.

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REFERENCE

1. Fernandez JP, McKenzie DB, Roberts PR. Four-valve endocarditis caused by group G Streptococci. *Heart* 2007;93:1039.

APPENDIX

For accompanying Videos 1, 2, 3, 4, and 5, please see the online version of this article.

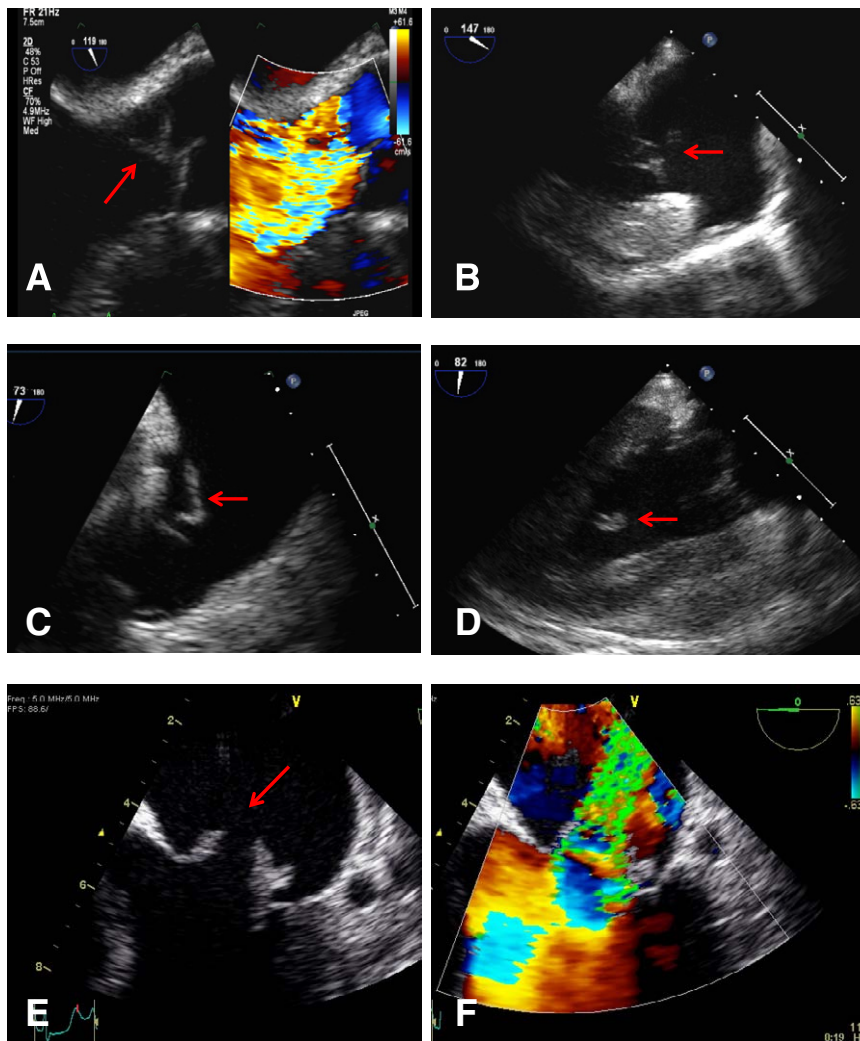


Figure 1. Pre-Operative TEE images

(A) Zoomed long-axis view showing a flail noncoronary cusp of the aortic valve (arrow) with severe aortic insufficiency by color Doppler. (B) Transgastric image demonstrating a vegetation on the tricuspid valve (arrow). (C) Zoomed image showing a vegetation attached to the pulmonic valve extending into the main pulmonary artery (arrow). (D) Transgastric long-axis view demonstrating a vegetation on the mitral valve chordae (arrow). (E) Large perforation (arrow) of the anterior leaflet of the mitral valve with severe mitral regurgitation by color Doppler (F). Please see accompanying Online Videos 1, 2, 3, 4, 5A, and 5B. TEE = transesophageal echocardiogram.

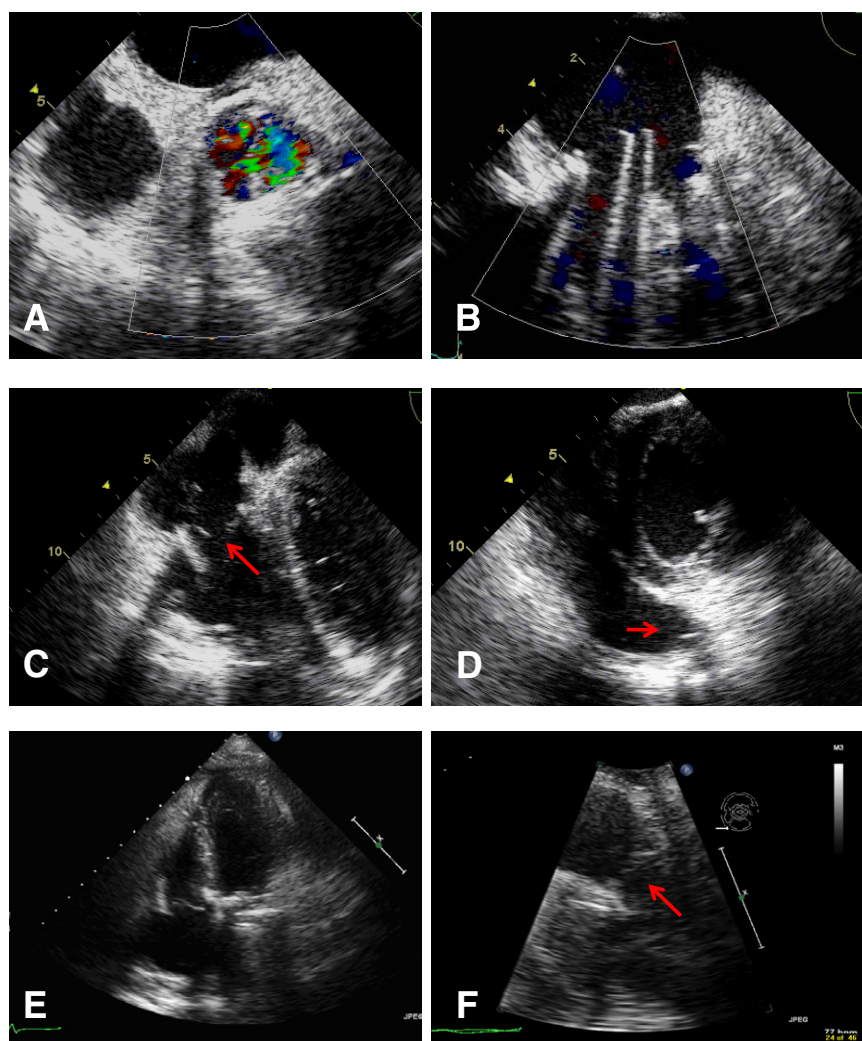


Figure 2. Post-Operative TEE and TTE images

(A) Short-axis transesophageal echocardiogram (TEE) view showing the mechanical aortic valve. (B) TEE image of the bileaflet-occluder mechanical mitral prosthesis. (C) TEE image showing the bioprosthetic tricuspid valve. (D) Transgastric TEE image demonstrating the bioprosthetic pulmonic valve. (E) Transthoracic echocardiogram (TTE) apical 4-chamber view showing the bioprosthetic tricuspid valve and the mechanical mitral valve. (F) Short axis TTE image showing the bioprosthetic pulmonic valve.