

Rare Complication of Aortic Valve Replacement: Aorto-Right Atrial Fistula

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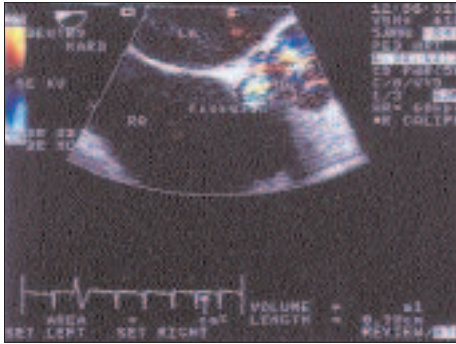


Figure 1: Transesophageal echocardiographic color Doppler imaging of aorto-right atrial fistula.



Figure 2: Aortography in left anterior oblique projection. Arrow indicates fistula between aorta and right atrium.

A 49-year-old woman was referred to our clinic with the increasing symptoms of palpitation and weakness in February 2000. The patient had had a history of aortic (21 mm. mechanical valve, St. Jude Medical Hemodynamic Plus; St. Jude Medical, Inc., St. Paul, Minnesota, USA) and mitral valve replacement with the diagnosis of severe aortic regurgitation and mitral stenosis in April 1999. In physical examination, blood pressure was 110/70 mmHg and heart rate was 100 b.p.m irregularly. A grade 3/6 continuous murmur was heard over the left sternal border. Electrocardiogram (ECG) revealed atrial fibrillation and right axis of 150° with evidence of right ventricular hypertrophy different from ECG taken immediately after valve replacement. Transthoracic echocardiography (TTE) and then transesophageal echocardiography (TEE) demonstrated an aorto-right atrial fistula (Figure-1). Cardiac catheterization was performed to confirm diagnosis and evaluate hemodynamics. An aorto-right atrial fistula was also revealed by aortography (Figure-2). Right atrium pressure was 6 mmHg, right ventricular pressure was 50/0-7 mmHg and pulmonary artery pressure was 50/18 mmHg. Significant step-up was demonstrated in right atrium with a Qp/Qs ratio of 1.58:1. The operation was performed to repair fistula in March 2000. The diameter of the fistula was 1 cm at the aortic site. Aortic site of the fistula was closed with Goretex patch and atrial site was closed with pledged sutures. The patient has benefited from the operation. There was no residual shunt on post-operative TTE. She remains well 36 months after surgery.

An aorto-right atrial fistula after aortic valve replacement is an extremely rare complication. We have found only few cases in Medline search. In these reports, fistula was due to either early prosthetic endocarditis or dissection of ascending aorta (1-3). In our case, there was no evidence of aortic dissection or infective endocarditis during post-operative period. We speculated that a traumatic tear or damage

due to aggressive decalcification near the suture line may be the reason of fistula. Intraaortic high pressure may promote the progression of tear toward the outer side of aortic wall and lead to draining into the right atrium.

In conclusion, if a patient presents with new symptoms or a new continuous heart murmur is found after aortic valve replacement the presence of an aorto-cameral fistula should be considered.

References

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