A 58-year-old man came to our hospital because of shortness of breath and palpitation. He had a history of unknown fever and congestive heart failure with unknown reason. Physical examination found a systolic murmur (Levine III/VI) at the apex implying mitral regurgitation. Transthoracic echocardiography (TTE) and transesophageal echocardiography (TEE) revealed severe mitral regurgitation. There was an apparent prolapse of the lateral segment of the mitral leaflet with mitral regurgitation and an aneurysm in the anterior leaflet of the mitral valve, which was perforated (Figure 1: upper panel). An eccentric jet toward the anterior leaflet due to lateral scallop prolapse caused structural weakening and then the aneurysm in the anterior leaflet.

In this case, mitral valve replacement was performed as the aneurysm was large and accompanied by a significant regurgitation. During operation, the anterior leaflet of the mitral valve showed a large aneurysm with marked thinning (15 × 15mm) with a 4-mm perforation (Figure 2). Histopathologic specimens showed myxomatous degeneration without active endocarditis or inflammatory cells but healed inflammation.

Mitral valve aneurysm in the anterior leaflet is frequently associated with infective endocarditis involving the aortic valve because of the aortic regurgitant jet which strike the anterior leaflet of the mitral valve [1-5]. However, interestingly in this patient, we could not find aortic valve regurgitation and considered that the eccentric regurgitant jet toward the anterior leaflet due to lateral scallop prolapse caused the structural weakening and then the aneurysm in the anterior leaflet during the previous infective endocarditis which had not been clinically diagnosed.

References

2. C.L. Reid, A.N. Chandraratna, E. Harrison et al.: Mitral
Fig. 1. Preoperative transesophageal echocardiograms
Upper panel: The mitral valve aneurysm (white arrow) was seen as a localized bulge of the mid-segment of the anterior leaflet. The aneurysm bulged toward the left atrium in systole (right) and toward the left ventricle in diastole (left).
Lower panel:
Left: There was an apparent prolapse of the lateral scallop of the mitral valve (open arrow) and a perforated aneurysm (white arrow) in the anterior mitral leaflet.
Right: Color Doppler echocardiogram showed two crossing regurgitant jets; one was an eccentric jet toward the direction of the anterior leaflet due to lateral leaflet prolapse, and the other was a central jet through the perforation. Flow accelerations were seen at both the perforated site and prolapsed site. (RA, right atrium; RV, right ventricle; LA, left atrium; LV, left ventricle)

Fig. 2. Surgically removed mitral valve
Removed anterior leaflet of mitral valve showed a large aneurysm with marked thinning (15 × 15mm) with a 4-mm perforation.