A 21-year-old male patient who presented dyspnea on exertion and palpitation for 3 years was referred to our outpatient clinic with the diagnosis of atrial flutter. Physical examination revealed a blood pressure of 110/70 mmHg and heart rate of 110 beats/min. Cardiac examination showed arrhythmic and tachycardic heart sounds. S1 and S2 in the apex were normal, while No S3 and S4 were absent. Diastolic murmur was also heard in the aortic area. Other systemic examinations revealed normal findings. On the other hand, electrocardiography showed atrial flutter rhythm with a heart rate of 112 beats/min, while no significant ST-T changes were seen. Chest x-ray indicated normal cardiothoracic ratio and sinuses were open in both lungs. No pathological finding was seen in pulmonary vein or lung parenchyma. Transthoracic echocardiography (TTE) showed that heart apex, wall thickness, wall motion and systolic functions were normal. Quadricuspid aortic valve was observed with thick and adequately open cusps (Figure A). Moderate aortic regurgitation was found, while mild mitral valve prolapse and mitral regurgitation due to aortic regurgitation were observed in the anterior cusp of the mitral valve. Moreover, mild tricuspid regurgitation was also seen. Subsequently, pulmonary artery systolic pressure was 35 mmHg. Transesophageal echocardiography revealed spontaneous echocontrast in both atria and appendix without thrombus (Figures C, D). Mild mitral valve prolapse was seen in the anterior cusp A2 segment. Other findings were consistent with TTE results. The patient was diagnosed with quadricuspid aortic valve using three dimensional TTE (Figure B) and scheduled to undergo atrial flutter ablation.

Figures. Two (A) and three dimensional (B) transthoracic echocardiography and diastolic short axis imaging and transesophageal echocardiography showing quadricuspid aortic valve in both diastole(C) and systole (D).