Background: Valvular Heart Disease (VHD) is common in patients with rheumatoid arthritis (RA), however, VHD has not been well characterized by transesophageal echocardiography (TEE) and its correlation with clinical features of RA is undefined. Objective: To characterize VHD in RA patients by TEE and determine possible correlation with clinical features of RA. Design: Cross-sectional controlled study. Participants: 33 volunteers with RA, 18 women and 15 men with a mean age of 51 ± 10 years, and disease duration of 13 ± 7 years. 33 gender-matched healthy volunteers with a mean age of 41 ± 7 years. Measurements: Clinical and laboratory evaluations and multiplane TEE in patients, multiplane TEE in controls. TEE studies were interpreted independent of subjects’ clinical data. Results: Valve thickening, typically mild and diffuse was detected in 18 patients (55%) [Aortic Valve (AV) in 16 (48%), Mitral Valve (MV) in 11 (33%)] versus 5 controls (15%, p = 0.002). Valve nodules were detected in 12 patients (36%) [AV in 6 (18%), MV in 6 (18%)] versus 0 controls (p < 0.001). Valve nodules were characteristically small with irregular borders and homogenously echoreflectant without calcification. Nodules were usually located at the basal portion of the leaflets and were always associated with leaflet thickening (p <0.001). Valve regurgitation of mild or greater severity was detected in 24 patients (77%) [AV in 3 (10%) and MV in 24 (77%)] versus 20 controls (61%, p = 0.18). Mitral regurgitation of any and moderate degree was more common in patients than controls (77% and 18% versus 55% and 1%, respectively, p ≤ 0.05 for both). Significant VHD defined as valve thickening, nodules, or moderate regurgitation was detected in 18 patients (58%) versus 6 controls (18%) (p = 0.004). Patients with and without VHD had similar age, RA disease duration, peripheral nodular disease, erosive disease, activity and severity of RA, steroid dose and duration, rheumatoid factor, C-reactive protein levels, and erythrocyte sedimentation rate. Limitations: Small study and controls were not age-matched. Conclusions: In patients with RA, 1) VHD is common; 2) Valve nodules are a distinctive feature of VHD associated with RA; and 3) VHD may not be related to the clinical features, laboratory variables, or therapy of RA.