Echocardiographic prediction of risk for embolism in patients with active infective endocarditis

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Objectives.— The aim of our study was to assess the value of transesophageal echocardiography (TEE) in predicting embolic events (EEs) in a large group of patients with definite endocarditis according to the Duke criteria, including silent embolism.

Background.— Infective endocarditis is a serious disease with diverse clinical manifestations. The value of echocardiography in predicting embolism in patients with endocarditis remains controversial. Rare studies reported an increased risk of embolism in patients with large and mobile vegetations.

Methods.— Transesophageal echocardiograms of 212 consecutive patients with definite infective endocarditis (IE) were analyzed. The incidence of embolism was compared with the echocardiographic characteristics (localization, size and mobility) of the vegetations. To detect silent embolism, cerebral scans and abdominal echography were performed in 87% of patients.

Results.— Among 212 patients, 32 (15%) had one or more EEs. There was no difference between patients with and without embolism in terms of age, gender and valve involved. On univariate analysis, Staphylococcus infection and vegetation length and mobility were significantly related to EEs. A significant higher incidence of embolism was present in patients with vegetation length ≥10 mm (78.1%, P < 0.001) and in patients with mobile vegetations (71.8%, P < 0.001). Embolism was particularly frequent among 30 patients with both severely mobile and large vegetations (≥15 mm) (93.75%, P < 0.001). On multivariate analysis, the only predictors of embolism were vegetation length (P < 0.03) and mobility (P < 0.01).

Conclusions.— Our study shows that the presence of vegetations on TEE is predictive of embolism and that the morphologic characteristics of vegetations are helpful in predicting EEs in both mitral and aortic valve IE. It also suggests that early operation may be recommended in patients with vegetations >15 mm and high mobility, irrespective of the degree of valve destruction, heart failure and response to antibiotic therapy.

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