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Diagnostic value of ecofree space around the aortic prosthesis for infective endocarditis.

L. Iliuta¹, C. Savulescu², H. Moldovan¹, D.P. Gherghiceanu¹, R. Vasile¹, D. Filipescu³, C. Macarie⁴, V. Candea¹. ¹"C.C.Iliecu" Heart Institute, Cardiac Surgery Dept., Bucharest, Romania; ²Fundeni Clinical Institute, Internal Medicine, Bucharest, Romania; ³"CC Iliescu" Heart Institute, Anaesthesiology, Bucharest, Romania; ⁴C.C.Iliecu Heart Institute, Cardiology Dept., Bucarest, Romania

Background: In spite of frequent misinterpretation of ecofree space around the aortic prosthesis revealed by transoesophageal echocardiography as aortic abscess, there are no studies which it was evaluated its diagnostic value for infective endocarditis. **Aim:** Assessment of the diagnostic significance for infective endocarditis of the ecofree space revealed by transoesophageal echocardiography in patients with aortic prosthesis.

Material and method: We have taken into study 123 patients with aortic prosthesis who underwent transoesophageal echocardiography. Taken into consideration the findings on transoesophageal echocardiography, there were identified two groups: Group A: 68 patients with ecofree space around aortic prosthesis (42 patients with circular ecofree space between the aortic wall and prosthesis annulus and 26 patients with extraluminal ecofree space separated from the aortic lumen by aortic wall) and Group B: 55 patients without ecofree space around the aortic prosthesis. Statistical analysis used SYSTAT and SPSS programs for correlation coefficient calculations and for simple and multiple linear regression analysis.

Results: 1. Among patients with ecofree space around aortic prosthesis, only 8 (11.76%) developed an infective endocarditis according to Duke criteria. Among these, in 2 patients we have revealed circular ecofree space and in the other 6 patients we have revealed extraluminal ecofree space. Among patients without ecofree space around the aortic prosthesis, only one patient was diagnosed with infective endocarditis. 2. The extraluminal ecofree space is significantly correlated with infective endocarditis according to the equation $y=1.7x+5.2$, $p<0.001$, $R^2=0.71$. 3. There was shown a significant correlation between the presence of extraluminal ecofree space revealed by transoesophageal echocardiography and annular abscess confirmed intraoperatively in patients who underwent aortic valve replacement for infective endocarditis on aortic prosthesis and haemodynamic significant paravalvular leak ($R^2=0.28$, $p<0.0001$).

Conclusions: 1.The circular ecofree space is frequently revealed by transoesophageal echocardiography around aortic prosthesis and it has a low specificity for infective endocarditis. 2.The extraluminal ecofree space has an important diagnostic value and an increased specificity for abscess of the aortic radix, its presence being an indication for early surgical intervention in these patients.

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Role of transoesophageal echocardiography in the differential diagnosis of aortic ulcers.

Z. Gomez Bosch¹, A. Evangelista², G. Avegliano², M.T. Gonzalez-Alujas², A. Salas², M. Sebastián², R. Dominguez², J. Soler-Soler². ¹Hospital valle de hebron, Cardiologia, Barcelona, Spain; ²Hospital Valle de Hebron, Cardiologia, Barcelona, Spain

Prognosis and therapy of penetrating aortic ulcers (PAU) vs ulcer-like images (ULI) differ greatly, however, the differential diagnosis between both entities by imaging techniques is not well established. The aim of the present study was to assess the role of TEE in the differential diagnosis of aortic ulcers (AU) defined by CT or MRI. Twenty-five patients (23 men, 2 women; age range: 50-82y), were diagnosed of aortic ulcer (13 PAU and 12 ULI) during an acute aortic syndrome (n: 20) or incidentally (n: 5).

22 CT-classified: 9 PAU, 5 ULI, 4 non-specified AU and 4 non-diagnosed. 10 MRI revealed 3 PAU, 3 ULI and 4 non-specified AU. TEE agreed with CT in 10 cases (45%), ruled out PAU in 3 and classified the AU type in 4. TEE agreed with MRI in 5, ruled out PAU in 1 and classified the ulcer type 4. Therefore, TEE ruled out PAU diagnosed by CT or MRI in 11 cases, showing ULI localised dissection in intramural haematoma evolution.

Conclusions: TEE is highly useful in the differential diagnosis of penetrating aortic ulcers and ulcer-like images diagnoses by CT or MRI. Some penetrating aortic ulcers remained undetected by conventional CT; thus, TEE is mandatory in aortic ulcer assessment.

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Transoesophageal echocardiographic study in 50 patients affected by rheumatoid arthritis.

M. Turiel¹, G. De Blasio², M. Llambro², L. Delfino², G. Bigatti², D. Ali Youssef¹, F. Atzeni³, P. Sarzi-Puttini³. ¹Istituto Galeazzi University of Milan, Servizio di Cardiologia, Milan, Italy; ²Istituto Galeazzi, Servizio di Cardiologia, Milan, Italy; ³Hospital L.Sacco, Rheumatology Unit, Milan, Italy

Objectives: To determine the incidence and type of heart lesions in rheumatoid arthritis (RA), we coupled transthoracic (TTE) with transoesophageal echocardiography (TEE), which is more sensitive and more accurate.

Methods: 50 unselected RA patients (41 F and 9 M aged 25 to 73 years, with a mean age of 54.6 ± 14.4 years) free of known progressive heart disease underwent a chest radiography, an electrocardiogram, laboratory tests, and TTE coupled with TEE. Results were compared with those in age and sex-matched patients which were free of rheumatic diseases and underwent TEE to investigate different clinical disorders.

Results: Mitral regurgitation (MR) was evidenced in 40 cases (80%). Among the controls, only 15 (30%) had MR ($P<0.01$). Aortic regurgitation was found in 15 cases (30%), versus 3 controls ($P<0.02$). Ten cases (20%) versus only 4 controls (7.9%) had tricuspid valve abnormalities (NS). Mitral valve prolapse (MVP) was observed in 10 patients (4 of posterior leaflet and 6 of anterior leaflet).

Pericardial effusion was found in 39 cases (78%) and in none of controls. Six patients evidenced diastolic dysfunction. Two patients presented interatrial septal aneurism. Twenty patient (40%) had fibrosis and/or calcifications of the aortic valve, and 10 patients of the mitral valve. Echo-generating nodules were seen on a mitral valve in 5 cases and on an aortic valve in 2. No significant correlations linking cardiac lesions to clinical or laboratory features of RA was observed.

Conclusions: Cardiac involvement, particularly of the mitral valve, was extremely common in RA patients. Diastolic dysfunction was rarely observed but systolic function was normal. No correlation was observed between cardiac abnormalities, disease severity and treatments. TEE was useful to identify echo-generating nodules and calcifications of cardiac valves.

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Is it necessary to perform transoesophageal echocardiography before electrical cardioversion in patients with atrial fibrillation? An alternative strategy.

D.N. Chrissos, E.N. Tapanlis, H.G. Sotiropoulos, A.A. Katsaros, A.N. Kartalis, P.N. Stougianos, A.K. Avgeropoulou, I.E. Kallikazaros. Hippokraton Hospital, State Cardiac Department, Athens, Greece

Introduction: It is well known that patients (P) suffering from atrial fibrillation (AF), develop progressive dilatation of the left atrium and they have an increased risk for thromboembolic events. The electrical cardioversion (EC) in P with AF of more than two days' duration is performed either directly guided by transoesophageal echocardiography (TEE), either 3-4 weeks later after receiving anticoagulant therapy (AT) and without prior TEE, in order to diminish the possibility of thromboembolism. The purpose of this study is to point out the safety of an alternative therapeutic procedure in P with AF, which is the EC of the AF after three weeks' AT with preceding TEE, so as to exclude the existence of thrombi.

Methods: 128 P (70 males and 58 females, mean age 62.8 years) with AF of prolonged duration, lasting from one month to one year, received AT with acenocoumarol for 3-4 weeks to achieve an international normalized ratio (INR) of 2.2 to 3.0. TEE was performed after this period and EC followed, if no thrombus was found. If sinus rhythm was restored, AT was administered for the next 3-4 weeks. If a thrombus was detected, the AT continued for other 3-4 weeks and the EC followed, only when the thrombus had been dissolved, otherwise the EC was cancelled.

Results: The TEE disclosed a left atrium thrombus in 12 P (9.38%) and the EC was postponed. Finally, EC was not performed in 6 out of all patients (4.72%). 122 P (95.31%) underwent EC. The EC failed in 14 P (10.93%) and recurrence of the AF was observed in 46 P (35.93%). The heart rhythm remained sinus (for a period of one month to one year) in 61 P (47.66%). Thromboembolic events, cerebrovascular incidents, transient ischemic attacks, or major/minor bleeding complications were not noticed.

Conclusions: High percentage of patients (one out of ten) develops left atrium thrombi before the electrical cardioversion, despite of the anticoagulant therapy they receive. The described approach in preventing thromboembolic events, which may accompany the electrical cardioversion of atrial fibrillation, seems to be absolutely safe, causes no complications and, consequently, could be a strategy of choice especially on patients of high thromboembolic risk.