483
Surgical or medical treatment for impending paradoxical embolism—report of a clinical cases and literature review
E. Fauveau1; A. Cohen3; N. Bonnet3; K. Gacem1; H. Lardoux1 on behalf of: Centre Hospitalier Sud Francheil
1Centre Hospitalier Sud Francheil; 2Service De Cardiologie, Corbeil Essonne, France; 3Paris, France; 4Chollet, France

Endpoint: Thrombus straddling a patent foramen ovale (TSFO) is rare. It occurs in presence of pulmonary embolism, and it can be responsible of paradoxical embolism. The treatment is discussed, even if surgical treatment by thrombectomy is more often chosen. We aimed to precise better TSFO treatment depending on clinical context.

Material and methods: First TSFO case was reported by Nellessen in 1985. A bibliographic research in PubMed from 1985 to 2005, found 75 cases of TSFO diagnosed by echocardiography. We analysed the 79 patients including 4 patients of our personal experience.

Results: Median age was 57.8 year old, with a majority of men (H/F ratio: 0.6). Pulmonary embolism was present in 97% of cases, and was severe in 42% of cases. Paradoxical Embolism was found in 47% of cases, with cerebral site in half of cases. The diagnosis was confirmed by transthoracic echogenic in 1/3 of cases and by transesophageal echocarhoid in 2/3 of cases. It shows more frequently a long mobile serpentine thrombus. Treatment was described in 70 of 79 cases. Heparin treatment group was older (66 years), had more stroke (7/10) than surgery group (median age 55 years, 8 strokes/46). Among 25 patients with hemodynamic compromise, surgery was the first therapeutic option (13/25). Proportionally, more patient received thrombolytic in its subgroup (8/25). Heparin or venous ca vein filter was more rarely chosen (4/25). In these subgroup, mortality was hight (>30 %) independently of treatment.

Conclusion: Medical treatment by heparin is a second intention in an older population with more frequent comorbidities and strokes. However, mortality is not reduce in surgery group treatment compared to heparin in this review. Surgery seems to be justified in prevention of paradoxical embolism. Thrombosis is more frequently chosen in the high risk population that cannot wait for surgery treatment, and is associated with the highest mortality.

Table 1. Immediate mortality (N=70)
surgery heparin thrombolysis cava filter

<table>
<thead>
<tr>
<th>mortality</th>
<th>0/1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/46 (15%)</td>
<td>1/13 (8%)</td>
</tr>
</tbody>
</table>

484
Is the diagnostic capacity of transesophageal echocardiography and cardiac disease found in peripheral embolism different from cerebral embolism?
A.T. Timoteo1; L.M. Brancos2; A. Galrinho2; A. Leal2; A. Santana2; J. Abreu2; J. Feliciano1; R. Ferreira1
1Lisboa, Portugal; 2Santa Marta Hospital, Cardiology Dept., Lisbon, Portugal

Background: The search for a cardiac source of embolism by transesophageal echocardiography (TEE) is a very important tool in the evaluation of patients with embolic events.

Objectives: We sought to evaluate if the diagnostic capacity of TEE and the cerebral disease found is different in cerebral and peripheral embolism.

Methods: Study of 1110 consecutive patients studied since 1994 by TEE, after a normal transcranial echocardiogram (TTE), for search of a cardiac source of embolism. We found 52 cases of peripheral embolism, and the remaining were acute cerebral ischemic events (confirmed by CT-scan).

Results: Male gender was more frequent in patients with cerebral events (53% vs 37%, p<0.003), with the same age (53±14 vs 57±18 years). There was a slight trend for a higher incidence of thrombi and more often, we found a potential cardiac source of embolism in peripheral embolism. See table.

Conclusions: In peripheral embolism, we found the same cardiac diseases as in cerebral embolism, but with a higher incidence in thrombi. It was also more often diagnostic of a cardiac source of embolism. However, the diagnostic rate was only 48%, less than what we expected to see in peripheral embolism, maybe due to the fact that large vegetations, thrombi or cardiac tumors, so often found in these cases, can be seen by TTE. The patients that underwent TTE were only the ones with normal TEE, outlining the importance of TEE after a normal TTE.

Table 1

<table>
<thead>
<tr>
<th>(%)</th>
<th>Peripheral embolism</th>
<th>Cerebral embolism</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrial septal defect</td>
<td>0</td>
<td>1</td>
<td>NS</td>
</tr>
<tr>
<td>Patent foramen ovale</td>
<td>4</td>
<td>9</td>
<td>NS</td>
</tr>
<tr>
<td>Atrial septum aneurysm</td>
<td>2</td>
<td>7</td>
<td>NS</td>
</tr>
<tr>
<td>Vegetation</td>
<td>2</td>
<td>0.7</td>
<td>NS</td>
</tr>
<tr>
<td>Tumour</td>
<td>0</td>
<td>0.4</td>
<td>NS</td>
</tr>
<tr>
<td>Thrombi</td>
<td>13</td>
<td>13</td>
<td>0.08</td>
</tr>
<tr>
<td>Aortic plaques &gt;4 mm</td>
<td>15</td>
<td>9</td>
<td>NS</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>48</td>
<td>35</td>
<td>0.08</td>
</tr>
</tbody>
</table>

485
Patients with transient ischemic attack under oral anticoagulation: atrial thrombus resolution follow-up guided by transesophageal echocardiography
D.N. Christol1; E.N. Taparlis1; A.A. Katsaras2; P.N. Stougian2; A.N. Karitais2; N.C. Koroves2; I.E. Kallikazaros2
1 Hippokration Hospital, Cardiology Dept., Athens, Greece; 2Athens, Greece

Introduction: Transesophageal echocardiography (TEE) has been proven an exceedingly reliable imaging technique for detection of atrial thrombi, specifically in patients (P) who have undergone a transient ischemic attack (TIA) -far surpassing transthoracic echocardiography. The purpose of this study is to determine the usefulness of TEE as a means of recording the outcomes of anticoagulation therapy in P with TIA.

Methods: We studied 169 P (88 males and 81 females of mean age 70±10 years) who had recently sustained a TIA, the diagnosis of which was made clinically and by brain computerized tomography. All P underwent TEE, well tolerated and uncomplicated. P<0.05 was considered statistically significant.

Results: 47 P (27.81%) were found by TEE to have atrial thrombus: 5 P (10.64%) in left atrium cavity and 42 P (88.36%) in left atrium appendage. 15 P were followed for a period of one month to 2.5 years. TEE was repeated 4 and 8 weeks after beginning oral anticoagulation. Atrial thrombus was completely dissolved in 12 P (80%), while it was still present in 3 P (p=0.004). No thromboembolic events were manifested during the follow-up period.

Conclusions: It seems that administration of oral anticoagulation therapy results in elimination of thrombi in the majority of patients who have sus- pected a transient ischemic attack. Furthermore, the reduction in the incidence of thromboembolic events seems to be related mainly to the resolu- tion rather than organization of the atrial thrombi.

ATRIAL FUNCTION AND DISEASE

486
Atrial strain and strain rate analysis in patients with hypertrophic cardiomyopathy: functional findings and clinical impact
G. Pacileo1; G. Limongelli1; G. Salvo1; M. Verrenigia1; A. Rea1; T. Miele1; S. Gala1; R. Calabrò1
1AO Monaldi, Dept., Napoli, Italy

Background: In patients with hypertrophic cardiomyopathy (HCM) atrial deformation significantly correlates with the risk of atrial fibrillation. However its clinical impact in patients with HCM has never been investigated.

Aim: To evaluate the atrial deformation by strain (S) and strain rate (SR) analysis in pts with HCM and to correlate it with the onset of arrhythmias.

Methods: Our study population includes 53 subjects: 23 patients with HCM (mean age at study 30±12 years) (HCM group) and 20 age-matched healthy children (Control Group). Among patients with HCM 11/23 showed arrhythmias. S/ SR analysis was performed from the apical views for the mid segments of interatrial septum (AS), left atrium (LA) lateral wall (LW), right atrial (RA) free wall (from the apical 4-chamber view), and LA inferior wall (IW) and LA ante- rior wall (AW)(from the apical 2-chamber view).

Results: Compared to control group, in HCM pts S/ SR analysis showed a significant reduction of both LA and RA deformation (AS: S p 0.01, SR p 0.002; LA LW: S p 40.7±21.1% vs 78.5±18.2%, p, SR 2.7±1.1 s-1 vs 4.2±1.7 s-1, p 0.007; RA: S 65.5±33.4% vs 139.1±33.1%, p, SR 4.6±1.6 s-1 vs 5.8±1.8 s-1; p; LA IW: S 40.7±21.1% vs 78.5±18.2%, p, SR 2.7±1.1 s-1 vs 4.2±1.8 s-1, p 0.007; LA AW: S 44.3±22.1% vs 77.5±15.3%, p<0.001, SR 3.2±0.5 s-1 vs 4.9±2.4 s-1, p 0.009). Patients with arrhythmias showed significantly lower values of peak systolic S and SR (AS: S p 0.01, SR p 0.002; LA LW: S p 0.05; RA S p 0.03, SR 0.05; LA AW: S p 0.01, SR p 0.02; LA IW: S p 0.01, SR p 0.02).

Conclusions: HCM patients show significant reduction of atrial deformation, probably due to involvement also of the atrial myocardium and for abnormal loading conditions. In addition, compared to HCM patients without arrhythmias, those with arrhythmias have the lowest values of systolic peak S/ SR, confirming the potential clinical impact of these new functional indexes.

487
Left atrial strain/strain rate analysis in patients with dilated cardiomyopathy. correlation with clinical, electrocardiographic and echocardiographic findings
G. Limongelli1; G. Pacileo1; G. D’Ivalvo1; R. Ancona1; C. Maitello1; G.E. Geppina Eusebio1; R. Calabrò1; P. Calabrò1
1AO Monaldi, Dept., Napoli, Italy

Aim: We analysed strain/strain rate (S/ SR) parameters of the left atrium (LA) in patients with non-ischemic dilated cardiomyopathy, seeking potential correlation between S/ SR and clinical, electrocardiographic (ECG) and echocardiographic (ECHO) findings of the patients.

Patients and methods: Twenty-four patients (mean age 23±16 years) with clinical diagnosis of dilated cardiomyopathy (DCM) were selected for the study. Coronary artery disease and/or secondary causes of heart fail