

Giant interatrial septal aneurysms mimicking quistic masses [98]

Two cases with different therapeutic options

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Aneurismas gigantes do septo interauricular simulando massas quísticas (dois casos com opções terapêuticas diferentes)

RESUMO

Com a melhoria das técnicas ecocardiográficas, através da melhor resolução e qualidade de imagem (por ex: segunda harmónica), assistimos a um crescente aumento do número de casos de aneurismas do septo interauricular (ASIA), sendo actualmente facilmente diagnosticados. Devido a poderem ser considerados um factor de risco para acidente vascular cerebral, e atendendo às implicações médicas, económicas e até psicológicas que um diagnóstico destes pode vir a ocasionar, foi necessário definir critérios diagnósticos⁽¹⁾. Na maioria dos casos os ASIA são pequenos e sem grande significado, no entanto em caso de acidente vascular cerebral criptogénico e em doentes considerados jovens, torna-se mandatário a realização de ecocardiograma transesofágico para avaliar eventual foramen oval patente^(2,3). No entanto, para além de ASIA pequenos, existem outras formas menos comuns como sejam os aneurismas gigantes do septo interauricular. Os autores descrevem dois casos de aneurisma, um simulando uma massa auricular direita, e o outro, uma massa quística, anecogénica. O primeiro caso estava associado a estenose mitral e foi resolvido cirurgicamente, e o segundo caso foi encerrado com um dispositivo de Amplatzer utilizado no encerramento de comunicações interauriculares.

Palavras-chave:

Aneurismas do septo interauricular; Foramen oval patente; Aneurismas do septo gigantes

ABSTRACT

With the recent technical improvement in echocardiography imaging (second harmonics) the number of interatrial septum aneurysms (ASA) increased and are easily recognized. We assist to an overdiagnosing number of cases and diagnostic criteria emerged to face this problem⁽¹⁾. In the great majority of the cases ASA are small and inoffensive, but as ASA is considered a risk factor for cardioembolism when associated with persistence of foramen oval (PFO), an examination by transesophageal echocardiography (TEE) for exclusion of PFO makes the sense and is a common testing in patients with cryptogenic stroke^(2,3).

Besides these frequent ASA, other forms exist; the authors describe two cases of uncommon and huge ASA, one mimicking a right atrial tumor and the other a quistic, hypoechoic mass. The first case was associated with mitral stenosis and was submitted to surgery and the second was closed with an Amplatzer occluder device usually used in atrial septal defect (ASD).

Key words

Interatrial aneurysms, Patent foramen ovale, Giant aneurysm

Case 1

A 64 years old male patient was studied because of NYHA class III heart failure and occasional episodes of chest pain, which occurred during exertion and emotional stress. He had had rheumatic fever in infancy and had badly controlled high blood pressure.

Cardiac auscultation revealed an ejection systolic murmur near the left sternal border, with a smooth diastolic murmur, and an apical rumble.

The ECG showed atrial fibrillation and complete right bundle branch block.

Transthoracic echocardiography (TTE) revealed a calcified aortic valve with moderate regurgitation and severe mitral stenosis with mitral valve functional area of 0.9 cm². The pulmonary artery systolic pressure was calculated in 41 mmHg. The left ventricle had good left ventricular function and was not dilated or hypertrophied. In the right atrium there was a circular image that was initially interpreted as a Chiari network.

Cardiac catheterization confirmed moderate (III/IV) aortic regurgitation, mitral valve stenosis (mean gradient of 7 mmHg) and pulmonary arterial hypertension (55 mmHg of pulmonary systolic pressure). Coronary arteries were normal and several small anomalous vessels were seen on the right, representing probable neovascularization of an intracardiac structure (thrombus?).

A TEE was then performed which demonstrated two confluent cystic lesions, with spontaneous contrast inside, of variable sizes, within the right atrium (figure 1) and connected to the atrial septum. Though at first not obvious, it represented a giant atrial septal aneurysm (Figure 2).

A cardiac magnetic resonance confirmed the presence of what seemed to be two masses within the right atrium, one of considerable size, (cystic?), rich in lipids and adherent to the atrial septum and the other seemed to be adherent to the ceiling of the right atrium.

Surgery was performed in 1995, and two mitral and aortic mechanical prostheses were inserted. A huge atrial septal aneurysm was identified protruding into the right atrium,

which was removed and replaced by a "patch".

Since then the patient has been followed up regularly in the outpatient's clinic of our Hospital. He is in NYHA class II.

Case 2:

A 68-years old woman was sent by a general physician to our center with the information of a cystic right atrial mass provided by an echocardiogram realized in a private clinician. She did complain of palpitations without dizziness, no other cardiac symptoms were present. Transthoracic echocardiogram was repeated and a circular, hypoechoic formation was noted in right atrial surface of the septum (Figure 3). The diagnosis of huge ASA was done, no flow was observed between the atria.

A TEE was performed and showed a huge interatrial aneurysm of 30 x 30mm with auto-contrast (smog) inside (figure 4). No thrombus was detected. Two small orifices were present in the aneurysm, one in the normal location of foramen oval and the other in the center of the aneurysm with a restrictive flow between the aneurysm and the right atria.

The patient refused surgery.

Due to the increased risk of stroke we discussed TEE with an interventional cardiologist.

They decided to try to closure the aneurysm and the small interatrial communication with an Amplatzer ASD device. Under visualization and control by TEE and radioscopy and with general sedation, a cribriform occluder device of 35mm used to great interatrial septal defects were implanted without complications. Due to the huge dimensions of the aneurysm a reminiscent tissue remained uncovered by the device (figure 5).

The patient discharged hospital and was on follow-up at our center.

DISCUSSION

A patent foramen ovale (PFO) is an embryological remnant that can be found in about one quarter of adults⁽⁴⁾. In the great majority of

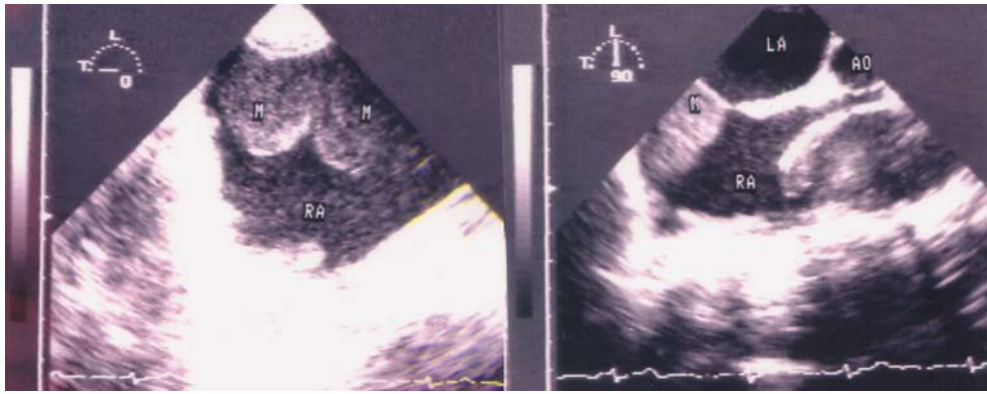


Figure 1. Transesophageal echocardiogram in an almost transgastric transversal view showing at least two very mobile cystic round images with spontaneous contrast inside (left) and a longitudinal view showing the atrial septum with what seemed to be two confluent masses inserted in its right side and protruding into the right atrium (right).

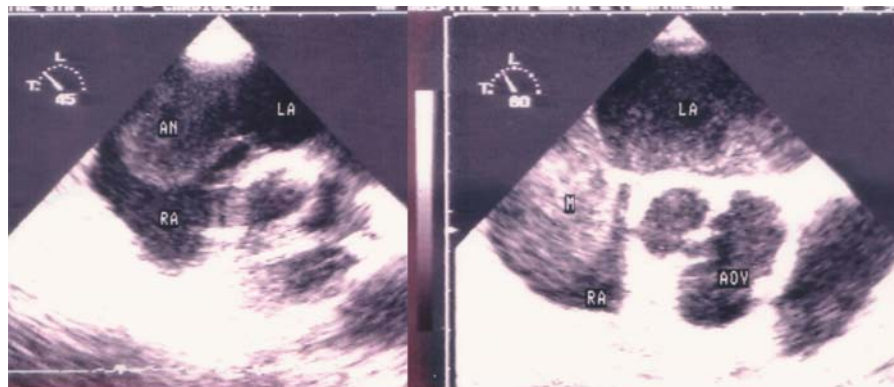


Figure 2. Transesophageal view identifying a huge atrial septal defect that protrudes into the right atrium, with spontaneous contrast inside in a 45° view (left) or 60° (right).



Figure 3. An apical four chambers view with the giant aneurysm, in a round shaped mobile form. In TEE (right), aneurysm was observed with a small communication (restrictive flow) between the two atria.

the cases they are small, however in a small number there is a wide patency or even an aneurismal formation of variable size, giant interatrial aneurysms have been described but are a rare condition^(5,6,7). Paradoxical embolism through a PFO has been documented in

numerous series and related-cases in the literature⁽⁸⁾. This can occur under normal hemodynamic conditions or during periods of Valsalva manoeuvres (straining, sneezing, coughing), allowing the communication of the right to left atria. Its role in transient ischemic attacks and



Figure 4. TEE showing (left) the spontaneous contrast inside the aneurysm before Amplatzer device was inserted. The remnant tissue was observed (right), the right atrium disc was inserted carefully just in the middle of the aneurysm providing an almost equal remnant tissue in both sides of the device.

cryptogenic stroke has been demonstrated^(2,3). The prognosis of giant interatrial aneurysms are unknown, but in our two cases there was spontaneous contrast related to blood stasis, a condition that allowed thrombus formation and treatment of the aneurysms seemed to be the best option.

The management of these patients improved with the recent possibility of percutaneous treatment of the aneurysm and PFO (9). Percutaneous closure of PFO and atrial septal defects is an attractive alternative of therapy, is safe and preventive of recurrence of cardioembolism. We described two cases with different therapeutic options. In the first case, patient will be submitted to a cardiac surgery because of mitral stenosis, so the surgical option seemed to be the most appropriate and correct. In the other case, the patient refused surgery and percutaneous closure of PFO and giant aneurysm are an alternative option even in cases of complex septal anatomy.

TEE allows a good exposure of the septum and both atria, and with concomitant use of fluoroscopy improves the efficacy of the procedure. With TEE support it is possible monitoring all the procedure, and to test the position of the device – ensuring that the disks do not damage vital structures and are placed properly. In this two cases TEE not only was helpful in the diagnosis because both cases have a wrong diagnosis of cardiac tumour or mass, but also provides in the second case a good window for percutaneous closure of the septum.

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