Phantom tumour

Isabel Germano*, Isabel Marcão**, Alexandra Ramos***, Francisco Farrajota****

Abstract

The authors present a clinical case of a 52-year-old Black man, HIV-2 positive, admitted in hospital for an ischemic cerebrovascular accident, without preexisting risk factors for cerebrovascular disease. Complementary studies for an embolic source, revealed a right atrial mass without atrial septal defect. Cardiac surgery did not reveal a tumour.

Key words: intracardiac mass, cardiac imaging, ischaemic stroke.

Introduction

In recent years, the appearance of non-invasive complementary exams, with very high sensitivity and specificity, has enabled diagnoses that were previously impossible. Many asymptomatic clinical entities have been discovered due to the credibility of diagnostic techniques, transforming a "healthy" into a sick individual. Early diagnosis, and the consequent timely therapeutic attitude, has led to clinical success in numerous situations with considerable morbidity and mortality.

We present a rare clinical case that led to discussion on the various diagnostic hypotheses and the interpretation of the complementary imaging exams, and whose retrospective analysis continues to create major doubts and difficulties in opposing our therapeutic decision.

Case Report

A.L.V., male, 53 years, Black, born in Cape Verde and residing in Portugal for several years, admitted in July 1993 with sudden onset of mental confusion, dysarthria and right hemiparesis.

The patient had no relevant pathological history, such as high blood pressure, dyslipidemia, diabetes, obesity, known heart pathology, recent history of cranial traumatism, fever, weight loss or other signs or symptoms.

The neurological exam showed periods of confusion and temporal/spatial disorientation, dysarthria, right facial paresis of the central type, and right hemiparesis, predominantly brachial. He did not present meningeal signs, and fundoscopy was normal.

From the remainder of the objective examination, the following are highlighted: regular general condition and nutrition, skin and mucosa without alterations, apyrexic, radial pulse 59 ppm, rhythmic, regular and ample, blood pressure of 135/85mmHg, symmetrical carotid pulses, without murmurs in the trajectory of the carotid arteries, cardiac and lung auscultation without alterations, absence of enlarged lymph nodes or organomegalies. No signs of peripheral venous insufficiency.

Cranioencephalic computed axial tomography (CAT-CE) carried out on admission, showed ischemic infarction of the territory of posterior distal distribution of the left middle cerebral artery. From the complementary tests, the following are highlighted:

• Laboratory exams: normal hemogram, sedimentation rate of 50mm (1st hour), renal and hepatic function tests normal, glycemia and lipid profile without alterations. Absence of monoclonal peak in the electroforesis of serum proteins. Study of coagulation, particularly antithrombin III and proteins C and S, within the normal limits. VDRL and imaging study, including antiphospholipid antibodies, negative. Serology positive for HIV2, with lymphocytes CD4 of 645/mm3.

• Teleradiography, electrocardiogram and Echo-Doppler of the veins of the neck and transcranium

*Resident to the Internal Medicine Supplementary Intership of the Hospital do Desterro

**Internal Medicine Hospital Assistant of the Medicine Service of Hospital do Desterro

***Cardiology Senior Hospital Assistant of the Cardiology Service of the Hospital de Pulido Valente

****Internal Medicine Senior Hospital Assistant of the Medical Service of the Hospital do Desterro

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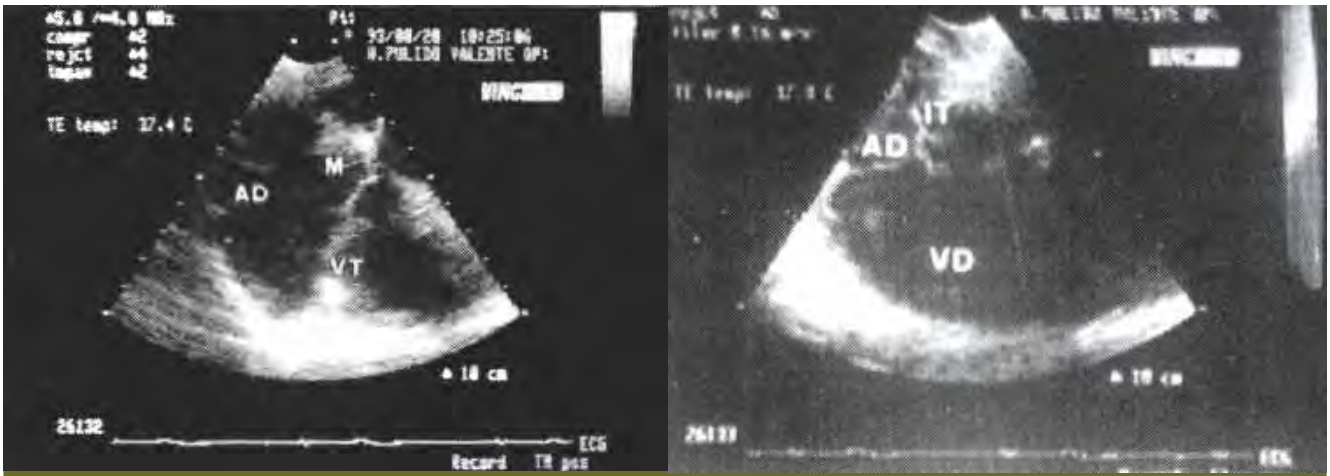


Transophageal echocardiogram. A.D. – right atrium; V.D. – right ventriculum; V.T. – tricuspid valve; I.T. – tricuspid insufficiency
M. – intracavitary mass

FIG. 1 and 2

without alterations.

• Bidimensional transthoracic echocardiogram (TTE) revealed echogenic image, mobile in the right atrium, apparently adhering to the ring of the tricuspid valve.

• Transesophageal echocardiogram (TEE) confirmed the presence of image with poorly defined contours, low echogenicity, mobile, in the right atrium, adhering to the distal portion of the interatrial septum, without apparent characteristics of myxoma (*Fig. 1*). Doppler exam detected mild tricuspid insufficiency and confirmed the integrity of the interatrial septum (*Fig. 2*).

• Cardiac nuclear magnetic resonance (MRI) demonstrated expansive lesion of the right atrium, grossly nodular, of approximately 3 cm in diameter, non-pediculated, adjacent to the ring of the tricuspid valve and right atrium wall, without cleavage planes with them (*Fig. 3*). These aspects were compatible with the formation of primitive cardiac tumor, although secondary pathology could not formally be ruled out.

While awaiting surgery, additional complementary exam were carried out to rule out any primary extra-cardiac tumor - thoracic CAT, CAT of the abdomen/pelvis, ultrasound of the bladder/prostate, ultrasound of the scrotum – which were negative.

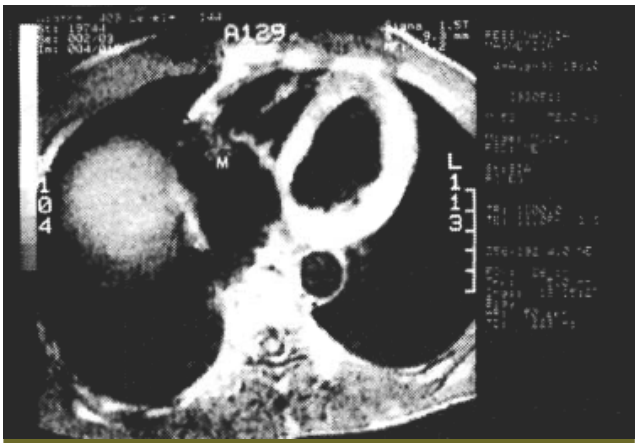
Five weeks after the echocardiographic diagnosis, the patient was submitted, under extracorporeal circulation, to surgery with right atriometry, but no mass was found, either in the right atrium or in the right ventricle or left atrium. There were no complications in the postoperative period.

The patient continues to be followed up at the external clinic, having fully recovered from the neurological disorders, with stable platelet anti-aggregation. Biodimensional echocardiographic control and cardiac resonance were performed, which revealed no abnormalities. In relation to HIV infection, the criteria of the CDC (Centers for Disease Control) were maintained.

Discussion

Faced with the neurological symptoms characterized by acute state of confusion and focal signs, a diagnosis was proposed of hemispherical cerebral dysfunction with vascular lesion or with lesion occupying the space of a neoplasic or infectious nature. In the case presented, the non-existence of systemic complaints, meningeal signs, alterations in fundoscopy, or other signs or symptoms beyond those described, suggested a vascular etiology. This was confirmed by CAT-CE, which revealed an ischemic lesion in the territory of distribution of the left middle cerebral artery.

Recognizing the importance of exhaustive etiological study of CVA, particularly in young patients without risk factors for cerebrovascular disease or a previous diagnosis of heart pathology, tests were carried out to rule out non-atherosclerotic arterial disease, such as vasculitis, syphilis and AIDS, states of hypercoagulability, and any emboligenic sources.1 Transthoracic echocardiography, which is essential



Cardiac nuclear magnetic resonance image

FIG. 3

in this context, detected a right atrial mass which could only have been the starting point of embolization for the cerebral circulation in the presence of an interatrial shunt.

Anyone who performs and interprets echocardiographic exams will know the difficulties associated with artefacts and images that deviate from the norm, and from the various "traps" to which they can be subject, leading to diagnostic errors caused by false images. It is important to be aware of the indications and limitations of the imaging exams and complementary and additional information that each of these can provide, contributing to a correct diagnosis.

It was based on this reasoning that the diagnosis of the probable mass in the right atrium made by bidimensional TTE was confirmed by TEE, since this technique goes beyond the difficulties of transthoracic acoustic window, enabling better definition of the anatomy and kinetic behavior of intercavitary masses; meanwhile, it was also possible to demonstrate the integrity of the interatrial septum.2

We were, therefore, faced with a patient with ischemic cerebrovascular accident, whose etiological study led to two additional diagnoses: infection by the acquired human immunodeficiency virus which, as a cause of non-atherosclerotic arterial disease, may have some role in the physiopathology of CVA, and a cardiac mass, which due to its location in the right heart in the absence of a right-left shunt, was clearly not related to the CVA.

However, the latter finding was important in that any cardiac mass, regardless of its histological nature, has some degree of morbidity and mortality due to the hemodynamic complications that can arise, such as arrhythmias, behavioral disturbances, cardiac insufficiency, cardiac buffering, and embolization.3

In order to obtain a better tissue localization and characterization, cardiac MRI was performed, the specific attributes of which make it advantageous in the diagnosis of intracardiac masses, and in some cases, providing more precise data than the bidimensional echocardiography.4 The aspects found in the MRI carried out were compatible with cardiac tumor, probably primitive, though secondary etiology was not ruled out. Given that cardiac tumors are very rare, the aim was to rule out tumor of extracardiac origin. The clinical reevaluation and additional complementary exams ruled out some of the tumors that metastize with greater frequency to the heart – lung, breast, kidney, melanoma, and of particular importance in this patient infected by HIV, Kaposi's sarcoma lymphoma.5

A probable diagnosis of primitive cardiac tumor was therefore proposed. Atrial myxoma, the most frequent of these, was not, however, suggested by the echocardiographic findings.

Although the tumor detected had a silent clinical behavior, the possible hemodynamic complications, and the need for histological diagnosis, justify the decision to carry out surgery.

The case is rare due owing to the fact that during surgery, no intracardiac mass was detected.

After review and discussion of the clinical case among the assistant physicians and those performing the various imaging exams, it remains difficult to find a credible explanation for the evolution observed. The hypotheses proposed are unlikely, but they are the only ones we have, to explain this situation we are facing:

• Either there was never an intracardiac mass, and its was just a false image - an unlikely hypothesis given that three different imaging techniques were used, by three different operators at three different times, the techniques complementing each other and having high sensitivity for the detection of intracardiac masses;

• Or the intracardiac mass (tumoral or otherwise, such as a thrombus) suffered, during the period between its detection and the surgery itself, fragmentation and subsequent pulmonary microembolization, also an unlikely hypothesis as there was no clinical

manifestation compatible with this scenario, and no pulmonary scintigraphy was performed for confirmation.

We believe it is important to review this clinical case, and transmit our experience through the polemic debate that ensued concerning the therapeutic decision, which although fruitless, we believe may have been the most appropriate for the case described.

We conclude by reflecting on a quotation by John M. Keynes: "There is nothing as disastrous as a rational investment policy in an irrational world". ■

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