

Aortic pseudoaneurysm as a casual finding 4 years after aortic surgery

Pseudoaneurisma aórtico como hallazgo casual cuatro años tras cirugía aórtica

María Martín^{1*}, Juan Calvo², Helena Cigarrán¹, José Rozado¹, Laura Díaz-Chirón¹, María Vigil-Escalera¹, Pablo Flórez¹, César Morís¹ and Rubén Alvarez-Cabo³

¹Department of Cardiology; ²Department of Radiology; ³Department of Cardiac Surgery, Hospital Universitario Central de Asturias. Oviedo, España.

A 70-year-old hypertensive man with a triple coronary bypass surgery and isolated supracoronal ascending aorta replacement 4 years ago was submitted for a routine computed tomography as a control of a post-surgery periaortic hematoma. It revealed a pseudoaneurysm in the aortic root close to the right coronary sinus (Figs. 1A-C) surrounded by the periaortic hematoma and an aortic aneurysm in the distal ascending aorta. Echocardiography showed an anechoic image parallel to the ascending aorta not present in the previous studies with a mild aortic regurgitation and without any other finding. After careful Heart Team evaluation, the patient was finally taken for a redo surgery. Before performing the median sternotomy, the right femoral artery and vein were exposed in case after the sternotomy had to start cardiopulmonary bypass for myocardial damage. The saphenous vein of the right leg was harvested. After the sternum was open with oscillating saw, a great fibrosis was observed. The previous bypass of the left internal mammary artery (LIMA) to the anterior descending coronary artery (ADCA) was partially injured without hemodynamic instability. The pseudoaneurysm was big extending throughout the right atrium, so extracorporeal circulation (ECC) was

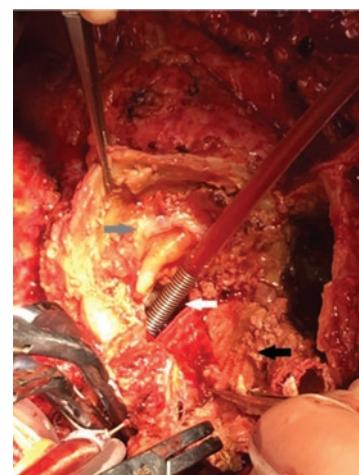


Figure 1. Surgery: white arrow: origin of pseudoaneurysm – dehiscence of 25 mm; black arrow: previous Dacron tube; gray arrow: capsule of pseudoaneurysm.

performed through the femoral vein and aortic arch. Aortic clamping was performed with three clamps due to the enormous fibrosis due to the previous use of biological glue. The myocardial protection was performed with crystalloid through antegrade and retrograde

Correspondence:

*María Martín
E-mail: mmartin7@hotmail.com

1405-9940 © 2019 Instituto Nacional de Cardiología Ignacio Chávez. Published by Permanyer México. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nd/4.0/>).

Date of reception: 04-07-2018

Date of acceptance: 18-01-2019
DOI: 10.24875/ACM.M19000043

Available online: 02-10-2019

Arch Cardiol Mex. 2019;89(3):273-274
www.archivoscardiologia.com

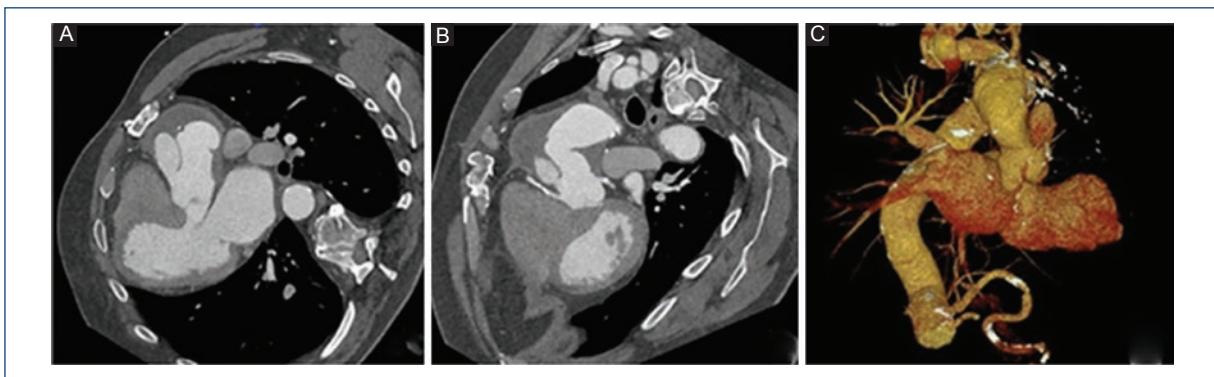


Figure 1. A-C: Aortic computed tomography (MPR LVOT, aortic root and ascending aorta, and 3DVR image) showing aortic pseudoaneurysm of the aortic root closed to the right coronary sinus.

cardioplegia. After the opening of the tube and the pseudoaneurysm, a 25 mm dehiscence of the previous suture between the tube and the aortic root was observed (Fig. 2). The corrective surgery consisted of myocardial revascularization with saphenous bypass to marginal obtuse and posterior interventricular coronary arteries and reconstruction of LIMA bypass to ADCA, removal of the previous tube and cleaning of contents and capsule of the pseudoaneurysm and replacement of the previous tube with a new 30 mm Dacron tube with double proximal suture and simple distal suture to aortic hemiarch, with a circulatory arrest of 39 min at 25°C of temperature, maintaining direct cerebral perfusion through the innominate arterial trunk and the carotid artery. The clamp and ECC times were 202 and 289 min, respectively. The post-operative evolution was without cardiac events until the 7th day when it was complicated by bronchoaspiration and digestive bleeding, and the patient finally died.

Pseudoaneurysms of the thoracic aorta are an infrequent pathology. They result in transmural disruption of the aortic wall with the leak surrounded by mediastinal structures. Usually, they are secondary to the previous cardiac surgery, and the mechanisms implicated include poor anastomotic technique or an intrinsic aortic pathology; other causes reported are trauma and infections^{1,2}. Surgical repair is the conventional treatment and mortality can reach 30%². Favorable outcome has been associated with an appropriate surgical planning, adequate myocardial and cerebral protection, and a careful perioperative care. Percutaneous closure has also been reported with excellent outcome and must be considered,

especially in high-risk patients². In our patient, pseudoaneurysm was an incidental finding and this highlights the relevance of the careful and periodical follow-up of aortic patients using imaging techniques.

Conflicts of interest

None.

Funding

None.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

References

1. Atik FA, Navia JL, Svensson LG, et al. Surgical treatment of pseudoaneurysm of the thoracic aorta. *J Thorac Cardiovasc Surg*. 2006;132:379-85.
2. D'Attellis N, Diemont FF, Julia PL, Cardon C, Fabiani JN. Management of pseudoaneurysm of the ascending aorta performed under circulatory arrest by port-access. *Ann Thorac Surg*. 2001;71:1010-1.
3. Sullivan KL, Steiner RM, Smullens SN, Griska L, Meister SG. Pseudoaneurysm of the ascending aorta following cardiac surgery. *Chest*. 1988;93:138-43.