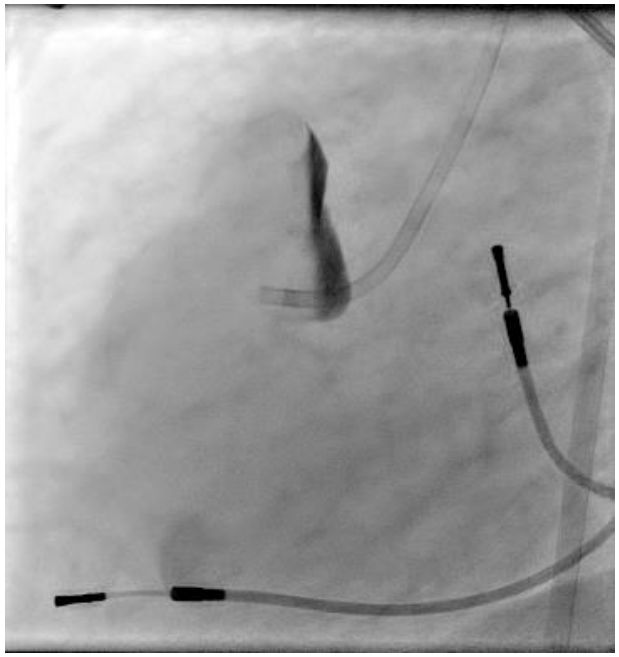
Thrombotic occlusion of a giant coronary aneurysm treated with primary echocardiography-guided angioplasty

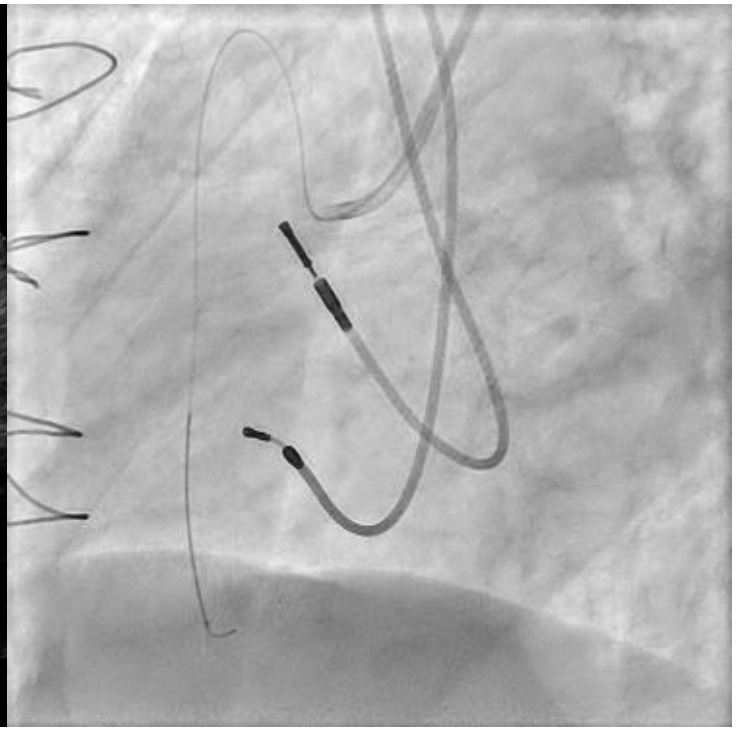
Leire Unzué (@Lunzue), Eulogio García, Rodrigo Teijeiro
Hospital Universitario HM Montepríncipe, HM Hospitales, Madrid, Spain

☒ There are not potential conflicts of interest related to this presentation

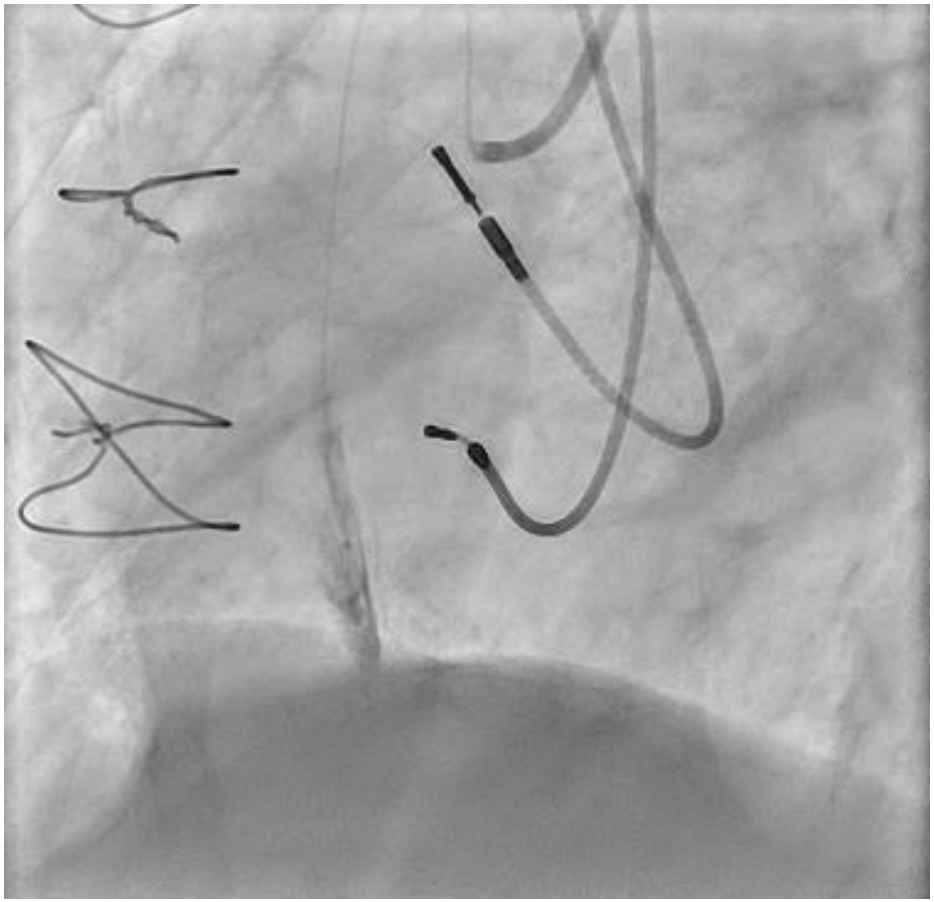
A 71-year-old woman with previous history of ascending aortic aneurysm repaired with David procedure 3 years before and a DDD pacemaker was admitted with acute chest pain and cardiogenic shock. She was under treatment with rivaroxaban due to atrial fibrillation.



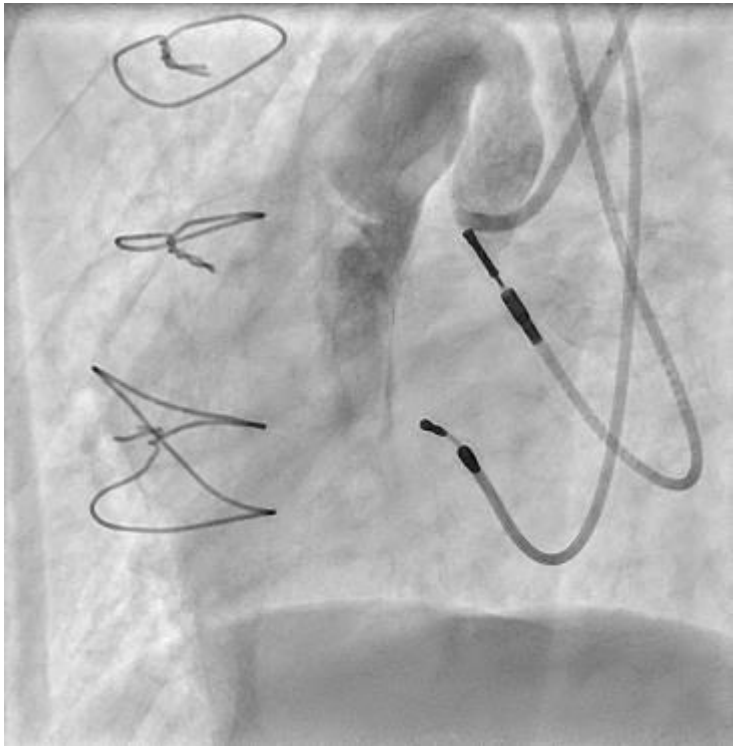
An urgent coronary angiogram was performed showing an ectatic left coronary artery, without significant stenosis, and a round cavity at the right Valsalva sinus. An independent right coronary branch was visualized at the right coronary sinus (arrow), however, there were not visible branches originating from the cavity, so that a differential diagnosis among post-surgical pseudoaneurysm and a giant right coronary artery was initially considered.

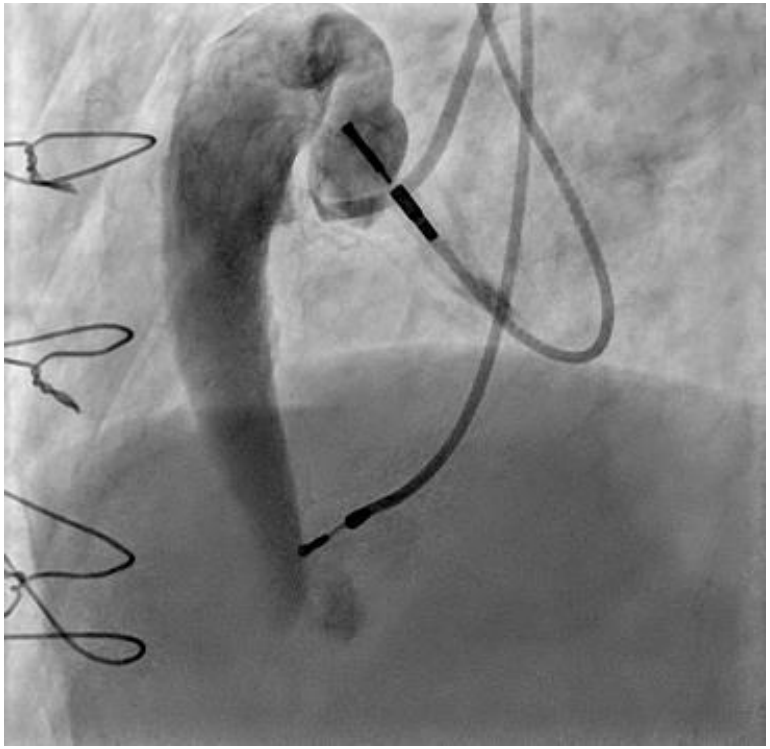


An urgent transthoracic echocardiogram (TTE) was immediately performed, showing a round cavity at the right atrioventricular groove with hyperechogenic shadows inside suggesting the path of the RCA.
A BMW angioplasty wire was advanced through the cavity supported by a Finecross microcatheter verifying the run of the wire inside the artery with the TTE (arrow).



After having verified true lumen location of the microcatheter instilling a little amount of contrast (image), a local fibrinolytic agent (alteplase 30 mg) was injected through the microcatheter.

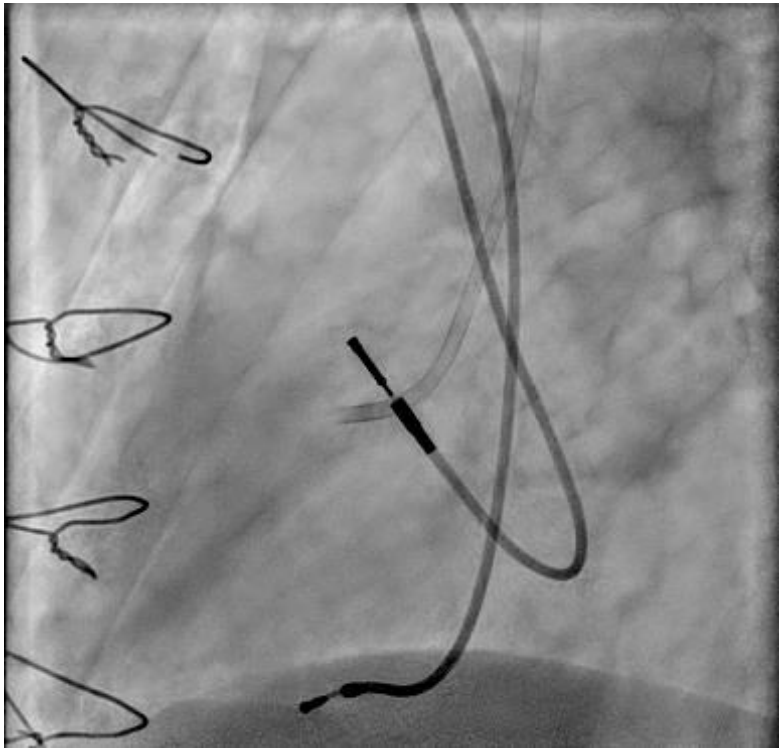


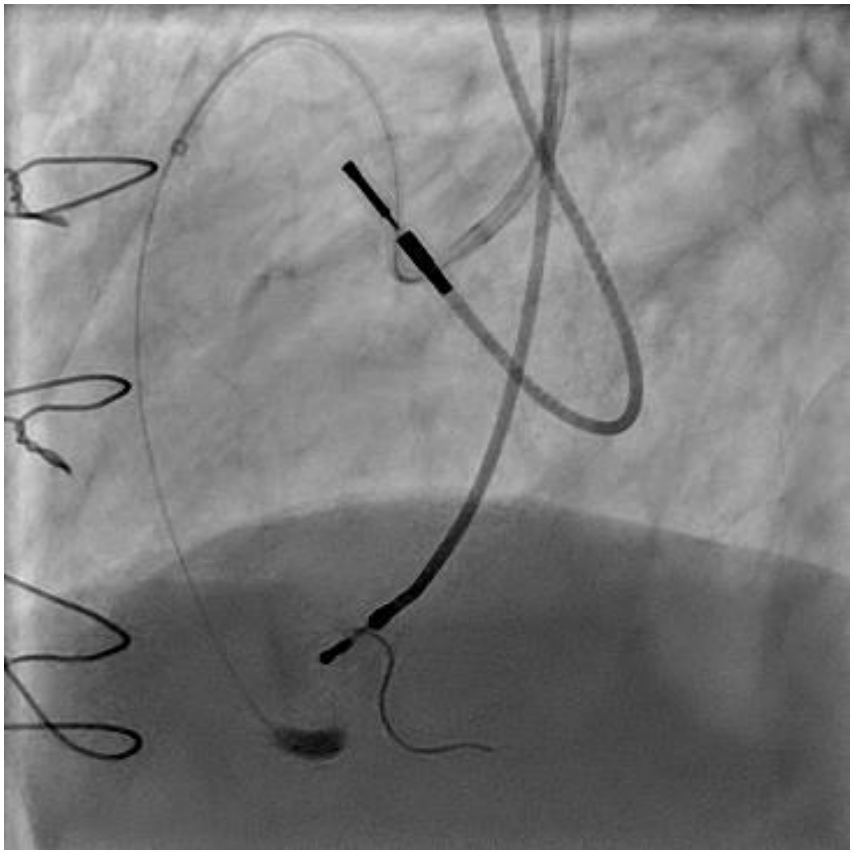


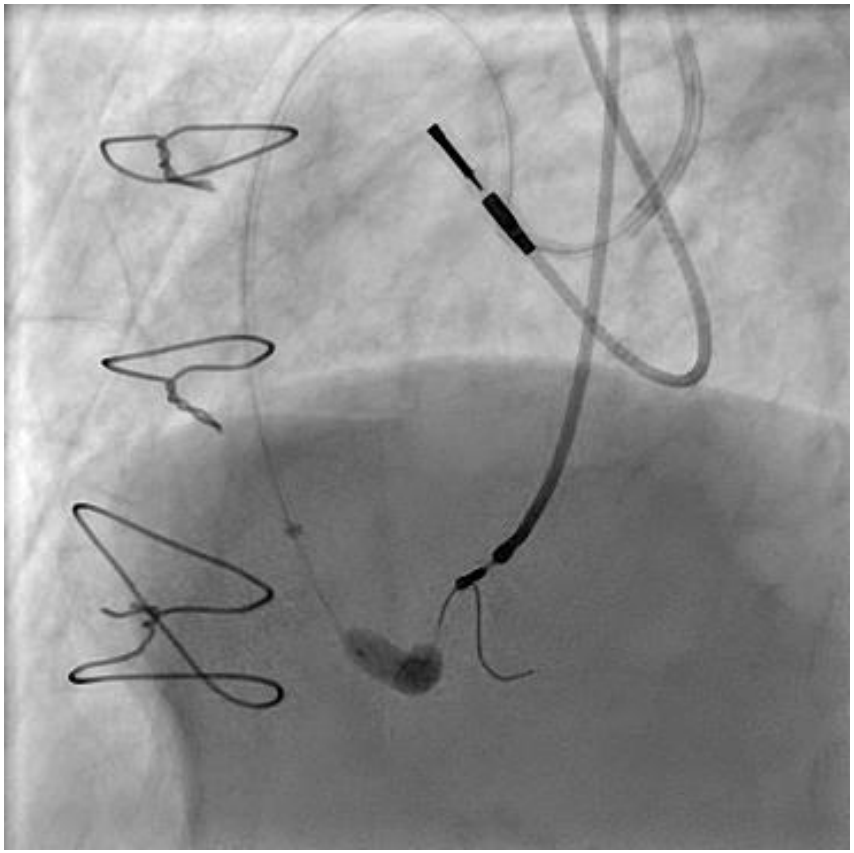
A minimal recovery of the anterograde flow was achieved, verifying the presence of a giant aneurysm of the right coronary artery.

The patient was treated with inotropic agents, anticoagulation and double antiplatelet therapy with a favorable clinical evolution.

A second angiogram was performed 10 days later, visualizing a giant aneurysm of the proximal and middle RCA with a significant narrowing at the end of the aneurysm (arrow).







Percutaneous treatment of the stenosis was then decided requiring a Pilot 50 guidewire supported by a Finecross microcatheter to cross the lesion, with predilatation with a 3x12 mm Sprinter angioplasty balloon advanced with the help of a Guideliner catheter and final implant of a 4x15 mm Onyx stent.

The patient was discharged the day after the procedure under treatment with rivaroxaban and clopidogrel and remains asymptomatic 2 months later.
A close follow-up with serial image techniques is planned to monitor the growth of the aneurysm.

TO TAKE HOME MESSAGES

- Coronary angiography in patients with previous cardiac surgery is always a challenge, especially in cases with David procedure, where the coronary ostia may be re-implanted in the neo-aorta presenting a dilated shape. In sache cases, multimodal image may be essential to clarify the diagnosis and guide the intervention.
- Although surgical treatment might be recommended in some giant coronary aneurysms, in patients with acute coronary syndromes, a percutaneous approach may be required, considering close follow-up with serial image techniques.
- In STEMI patients with coronary ectasia and large thrombus burden, administration of low local dose of intracoronary fibrinolytic may enable better angiographic results (1).
- A deferred stent strategy may be also desirable, considering stent implant only in cases where a clear stenosis is identified.

(1) Unzué L, et al. Local fibrinolysis in acute myocardial infarction of ectatic coronary arteries in the post-abciximab era. Cardiovasc Revasc Medicine 2021.