# Non-invasive assessment of endarteritis in Marfan syndrome with aortic dissection after surgical treatment

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Marfan syndrome is a disease of connective tissues that affects the skeleton, eyes, heart, blood vessels, nervous system, skin, and respiratory system. Dilatation of aorta increases the risk of aortic dissection or rupture.

Fifty-five years-old woman, with a history of systemic arterial hypertension under medical treatment and Marfan syndrome with descending thoracic and abdominal aortic aneurysm (Stanford A De Bakey-I dissection). She underwent to supra-aortic replacement + aortic arch 30-mm graft + supra-aortic truncal revascularization in April 2017. One month later, she presented to the emergency room with fever and inflammation of surgical wound site. A diagnosis of mediastinitis was made with positive culture for *Streptococcus mitis*. Surgical lavage was performed and cefalotin was administered with adequate response.

In December 2017, she returned again to the emergency department with fever, positive blood cultures for *S. mitis*, and elevated reactive protein C (RPC) and B-type natiuretic peptide (BNP). Antibiotic therapy was started. The transthoracic and transesophageal echocardiograms showed no vegetations. MRI was negative for vegetations but dissection Stanford B was detected from ascending aorta to the iliac bifurcation.

$^{18}$F-FDG PET/CT showed intense uptake in the aortic graft, with SUVmax of 10.92, consistent with the diagnosis of endarteritis (Figure 1A–E; Online clips A–C). Treatment with amoxycillin was started with improvement of the inflammatory parameters.

**Electronic supplementary material** The online version of this article (https://doi.org/10.1007/s12350-018-1370-0) contains supplementary material, which is available to authorized users.

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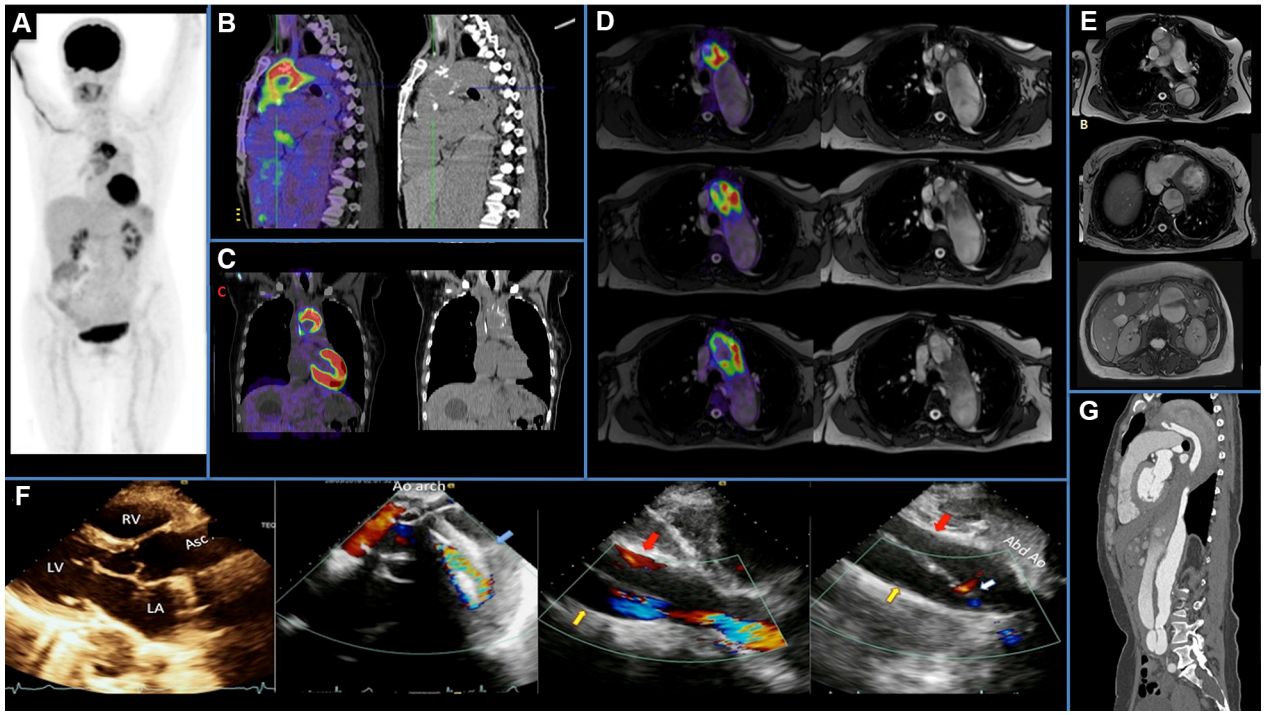


**Figure 1.** MIP, PET/CT, PET/MRI fusion, MRI, TTE, and CTA. (**A**) Maximum intensity projection (MIP) on anterior view of whole body $^{18}$F-FDG PET/CT. Beside normal $^{18}$F-FDG biodistribution, there is an intense uptake on mediatinum over middle line, Online clip A. (**B**) and (**C**) Sagital and coronal $^{18}$F-FDG PET/CT show increased uptake on aortic arch graft with SUVmax of 10.92, Online clips B and C. (**D**) Axial PET/MRI fusion. Both studies were acquired with difference of 2 days, the fusion was done manually. MRI shows slightly aortic wall thickening on the uptake site. (**E**) MRI axial T2-weighted at thoracic and abdominal levels. Dissection Stanford B was detected from ascending aorta to iliac bifurcation. (**F**) Transthoracic echocardiogram (TTE). Parasternal long axis of ascending aorta with normal diameters, suprasternal axis of the aortic arch showing aortic dilatation and dissection with thrombosis of the false lumen (blue arrow). Long axis view of abdominal aorta with dilatation and dissection. The white arrow points the reentry between false (red arrow) and true lumen (yellow arrow), Online clips F-1–4. (**G**) Sagital aortic computed tomography angiography (CTA). Dissection flap is observed that starts at the level of the sinuses of Valsalva and extends before iliac bifurcation, with a reentry zone (17 mm diameter) at aortic arch level and other one smaller at the origin of celiac trunk. Aneurysmatic dilatation of the descending and abdominal aorta with increased growth rate (current 57 mm, previous 34 mm), Online clip G.

The transthoracic echocardiogram showed dilatation and dissection with thrombus in descending aorta and reentry sites between true and false lumens in abdominal aorta (Figure 1F; Online clips F-1–4).

The patient was unsuitable for surgery, because of the accelerated growth rate of the aortic aneurysm, Figure 1G; Online clip G. Actually, she is in close follow-up, receiving optimal medical treatment.

## Disclosure

*Isabel Carvajal-Juarez, Erick Alexanderson-Rosas, Aloha Meave-Gonzalez, Susana Ortega-Silva, and Nilda Espinola-Zavaleta declare that there is no conflict of interest to disclose.*