

Interesting image

Contribution of ^{18}F -FDG PET/CT to the diagnosis of recurrence of Takayasu's arteritis[☆]Aportación de la PET/TC con ^{18}F -FDG en el diagnóstico de recidiva de la arteritis de TakayasuA. Cabrera Villegas^{a,*}, A.F. Elena Ibañez^b, I. Ernesto Sánchez Rodríguez^a, M.P. Garrastachu Zumaran^a, P. Santos Holgueras^a, M.C. Albornoz Almada^a^a Servicio de Medicina Nuclear, CIBIR, Hospital de San Pedro, Logroño, La Rioja, Spain^b Servicio de Reumatología, Hospital de San Pedro, Logroño, La Rioja, Spain

The role of Positron Emission Tomography (PET) with ^{18}F -Fluorodeoxyglucose (^{18}F -FDG) in the study and assessment of non-oncological entities has been demonstrated in recent years.¹ Our working group has previously published the utility of PET in the diagnosis, extension assessment and analysis of the therapeutic response of Takayasu arteritis.² We present the subsequent evolution of a previously reported clinical case.²

It is a known patient of our service diagnosed with Takayasu's arteritis for whom the ^{18}F -FDG PET/CT had contributed to its management. The inflammatory activity had been controlled with medical treatment (corticosteroids and methotrexate) and continued as per guidelines for about two years. In January 2015 and after the second ^{18}F -FDG PET/CT with negative results (images not shown) it was decided to definitely withdraw the treatment. In March 2017 and after two years without evidence of recurrence, a new ^{18}F -FDG PET/CT was performed (Fig. 1A), showing diffuse thickening of the aortic wall, up to 5 mm thick, that formed a hypodense "cuff" surrounding the permeable lumen, conditioning a dilation of the aorta extending up to the origin of the celiac trunk and that was of new appearance with respect to the control previous CT. The aortic dilation was continued by the segment adrenal gland with a maximum diameter of 40 mm and decreased gradually until the aortic bifurcation, where it presented a 17 mm caliber (Fig. 1B).

The analytical parameters remained within normal ranges.

The ^{18}F -FDG PET/CT showed three new hypermetabolic foci, with different size, morphology and extension along the abdominal aorta (Fig. 2). These foci had an annular morphology, surrounding

the aortic wall totally or partially. The most cephalad focus was located at the level of D12 (Fig. 2C) and extended by the posterior wall in a half-moon shape (SUVmax: 5.1). The second focus was located distally, at the level of L2, encompassing the anterior wall with right anterolateral extension of the abdominal aorta (Fig. 2A and B) and had a SUVmax value of 4.3. This focus coincided with one of the thickenings of the vascular wall described in the CT. A third focus was found in the iliac bifurcation (Fig. 2A) extending through the wall of the right common iliac artery (SUVmax: 3.9).

The findings confirmed the recurrence of arteritis and the establishment of a new treatment regimen with corticosteroids and methotrexate.

It is important to note that the morphology and extension of the vascular wall inflammatory outbreak was different to the first outbreak (Fig. 3). The relapse inflammation of the vascular wall began more distally, there was new involvement at the level of L2 and the aortic bifurcation involvement had a greater extension. Paradoxically, there was a discrepancy between the suspicion of recurrence by CT in the upper segment of the aorta (Fig. 1A), in which no tracer deposit was associated (Fig. 1C). Interestingly, this vascular segment was in the initial diagnosis ^{18}F -FDG PET/CT (superior row of Fig. 3A and C). This detail confirms the idea that the morphological findings do not always go hand in hand with the metabolic findings.

The case presented establishes the value of ^{18}F -FDG as a biological marker of inflammatory activity,³ allowing greater accuracy than other techniques, even in cases of normality of the analytical parameters and showing the location and extension of the involved vascular segments.

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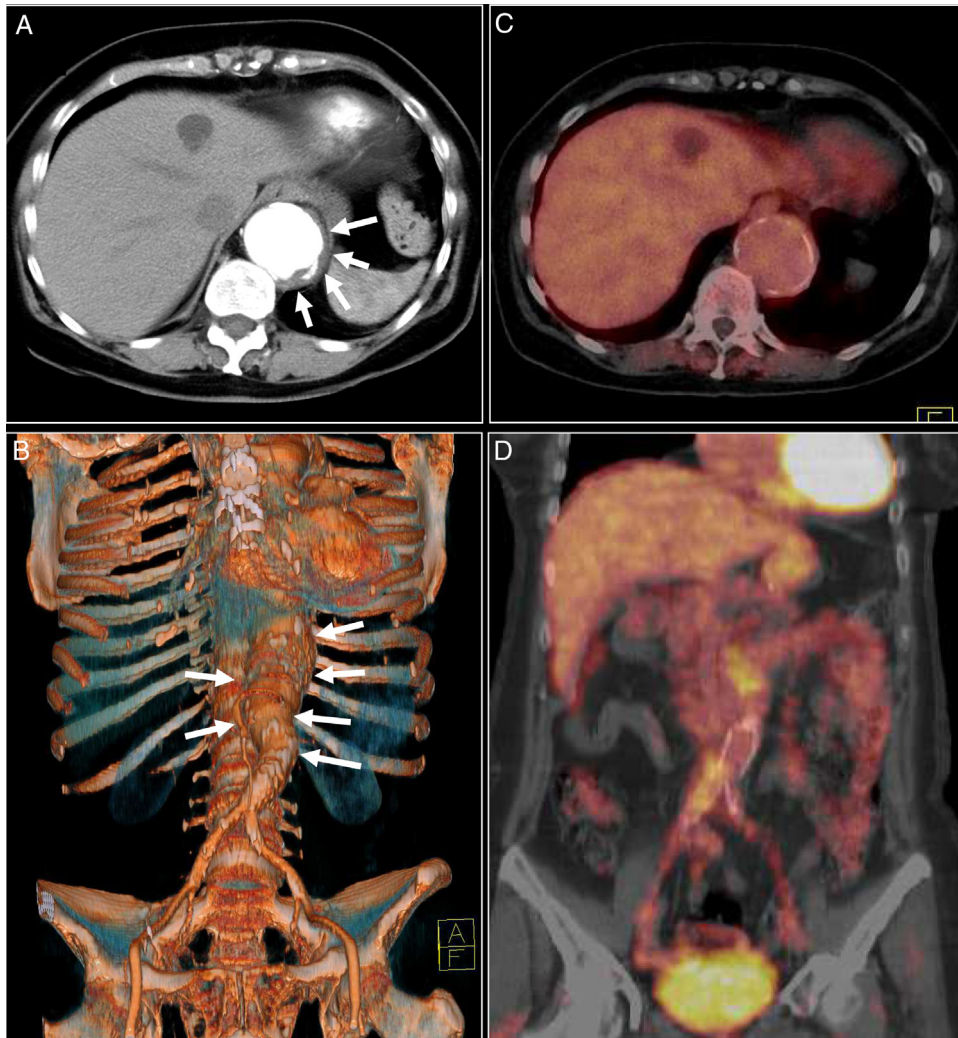


Fig. 1. Axial CT slice with intravenous contrast (A) showing a thickened vascular wall, that forms a hypodense "cuff" surrounding the lumen (arrows) and the rendered volume (B) in which dilation of the abdominal aorta can be seen (arrows) that progressively decreases until the iliac bifurcation. The fusion images (C and D) show the correspondence of these findings. Note particularly the absence of inflammatory activity in the first section of aortic dilatation and thickening of its wall and the focus of activity corresponding to the root of the right common iliac artery.

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