Image in cardiology

[18F]-fluorodeoxyglucose PET-CT in systemic amyloidosis with cardiac involvement

PET-TC con [18F]-fluorodesoxiglucosa en amiloidosis sistémica con afección cardiaca

Alain García-Olea Jurado,[a,b,*] Iria Fernández de la Prieta,[c] and Lara Ruiz Gómez[a,b]

[a] Servicio de Cardiología, Hospital Universitario de Basurto, Bilbao, Spain
[b] Facultad de Medicina, Universidad del País Vasco, Spain
[c] Servicio de Anatomía Patológica, Hospital Universitario de Basurto, Bilbao, Spain

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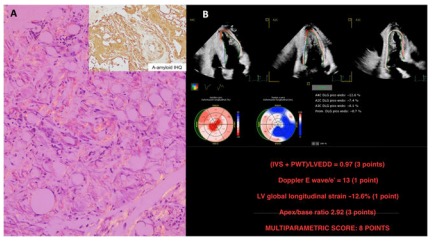

Figure 1.

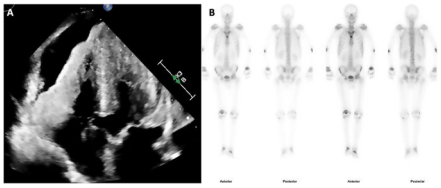

Figure 2.

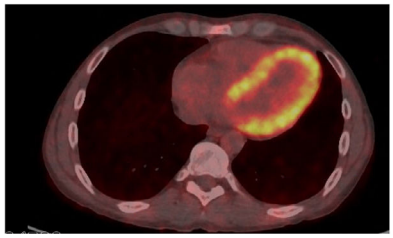

Figure 3.

A 43-year-old man with chronic psoriatic arthritis was admitted for obstructive uropathy caused by an intraabdominal mass, which showed the characteristic Congo red stain and apple green birefringence (figure 1A). The patient's long-lasting inflammatory arthritis, high serum A protein and immunohistochemistry (IHQ) were compatible with a diagnosis of secondary A-amyloid (AA) systemic amyloidosis.

An echocardiogram revealed a severely thickened myocardium (figure 1B, video 1 of the supplementary data), resulting in a significant outflow tract gradient (video 2A of the supplementary data) and moderate pericardial effusion (figure 2A). In line with the latest amyloidosis position statement, multiparametric echo-score confirmed the diagnosis (figure 1B; DLG: global longitudinal strain; IVS: interventricular septum; LVEDD: left ventricle end-diastolic diameter; PWT: posterior wall thickness), while the AA nature of the cardiac involvement was supported by the normal kappa and lambda immunochain values, ratio, and a 0 Perugini score in bone scintigraphy (figure 2B).

A [^{18}F]-fluorodeoxyglucose-positron emission tomography/computed tomography ([^{18}F]-FDG-PET/CT) had been performed a year before the admission, focused on joint inflammation evaluation with optimal dietary preparation. Subsequent analysis of this scan revealed noticeable [^{18}F]-FDG uptake in the left ventricle myocardium (figure 3).

Specific intravascular volume-directed therapy eliminated the gradient (video 2B of the supplementary data) and tofacitinib-tocilizumab was initiated, with no cardiovascular symptoms reported at 6 months of follow-up.

Of note, the [^{18}F]-FDG uptake might have brought forward both cardiac involvement and the diagnosis of systemic amyloidosis in this patient, whose informed consent was obtained.

This is the first documented case of [^{18}F]-FDG-PET/CT cardiac uptake in AA amyloidosis, although it was previously reported for light chain and transthyretin-mediated types and in PET/CTs with amyloid-directed tracers such as [^{18}F]-florbetaben.

FUNDING

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ETHICAL CONSIDERATIONS

Informed consent was obtained.

STATEMENT ON THE USE OF ARTIFICIAL INTELLIGENCE

No artificial intelligence was used in the preparation of this manuscript.

AUTHORS' CONTRIBUTIONS

All authors participated in the writing of the manuscript and supervised its final content.

CONFLICTS OF INTEREST

None.

APPENDIX. SUPPLEMENTARY DATA

Supplementary data associated with this article can be found in the online version, at https://doi.org/10.1016/j.rec.2023.12.002

* Corresponding author.
E-mail address: alain.garciaolea@osakidetza.eus (A. García-Olea Jurado).
@alain_go_ (A. García-Olea Jurado).
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