18F-FDG PET/CT focal cardiac uptake: An unsuspected Chiari's network

Cite this article as: Ana Moreno-Ballesteros, Jose Antonio Lojo-Ramírez and Jose Manuel Jiménez-Hoyuela-García, 18F-FDG PET/CT focal cardiac uptake: An unsuspected Chiari's network, Journal of Nuclear Cardiology https://doi.org/10.1007/s12350-021-02605-x

This Author Accepted Manuscript is a PDF file of an unedited peer-reviewed manuscript that has been accepted for publication but has not been copyedited or corrected. The official version of record that is published in the journal is kept up to date and so may therefore differ from this version.

see h Terms of use and reuse: academic research for non-commercial purposes, see here for full terms. https://www.springer.com/aam-terms-v1

18F-FDG PET/CT focal cardiac uptake: an unsuspected Chiari's network.

Depósito focal cardíaco en PET/TC con 18F-FDG: Red de Chiari.

Authors: Ana Moreno-Ballesteros¹, Jose Antonio Lojo-Ramírez², Jose Manuel Jiménez-Hoyuela-García².

Affiliations:

- Unidad de Gestión Clínica de Medicina Nuclear. Hospital Universitario Virgen Macarena. Avda Dr fedriani nº3, 41009, Seville, Spain.
- 2. Unidad de Gestión Clínica de Medicina Nuclear. Hospital Universitario Virgen del Rocío. Avda de Manuel Siurot s/n. 41013, Seville, Spain.

Correspondence author:

Ana Moreno-Ballesteros

Unidad de Gestión Clínica de Medicina Nuclear.

Hospital Universitario Virgen Macarena.

Avenida Dr fedriani nº3, 41009, Seville, Spain.

ana.moreno.ballesteros.sspa@juntadeandalucia.es

Tlf: +34 662 69 87 66 Fax: +34 955 009 162

18F-FDG PET/CT focal cardiac uptake: an unsuspected Chiari's network.

We report a 71-years-old female patient in chemotherapy treatment for cervix carcinoma (FIGO stage IV) infiltrating the bladder and the left parametrium. PET imaging with 383 MBq of 18F-FDG revealed an hypermetabolic pelvic mass and metastatic disease with pathological lesions at the level of the liver, lung and bone parenchyma; being all suggestive of malignancy. Also, a focal uptake with nodular morphology in the right atria was found (arrow), making imperative to discard a metastatic etiology versus primary tumor (myxoma/sarcoma) and other etiologies.

Given the aforementioned findings, a transesophageal echocardiography was performed with no evidence of intracavitary mass, showing a mobile fibrous net in the right atria known as Chiari's Network.

The Chiari's network is a vestige of the venous sinus valve that favors the passage of oxygenated blood to the left atrium in the fetal stage. This finding has a prevalence of 2%, and it's also related to arrhythmias, persistent foramen ovale and atrial septal aneurysm ¹. Several articles reflect its paradoxical behaviour either as a filter and nidus for thrombus ². Currently, there's a lack of scientific evidence about the recommendation of surgical treatment, remaining to individual case decisions. Further examinations are mandatory when abnormal activities as focal cardiac uptake in the atria are observed during PET/CT ^{3,4}.

Disclosures and Funding

All the authors (Ana Moreno-Ballesteros, Jose Antonio Lojo-Ramírez and Jose Manuel Jiménez-Hoyuela-García) confirm that we have no financial support or other benefits from commercial sources for the work reported on in the manuscript, or any other financial interest which could create a potential conflict of interest or the appearance of a conflict of interest with regard to the work.

References:

Author

- **1.** Loukas M, Sullivan A, Tubbs RS. Weinhaus A.J., DerDerian T. Chiari's network: review of the literature. Surg Radiol Anat. 2010; 32:895-901.
- **2.** Martínez-Quintana E, Rodríguez-González F. Chiari Network and Paradoxical Embolism. Rev Esp Cardiol. 2015; 68(3): 273-274.
- **3.** Maurer AH, Burshteyn M, Adler LP, Steiner RM. How to differentiate benign versus malignant cardiac and paracardiac 18F FDG uptake at oncologic PET/CT.Radiographics. 2011; 31(5):1287-305.
- **4.** Minamimoto R. Series of myocardial FDG uptake requiring considerations of myocardial abnormalities in FDG-PET/CT. Jpn J Radiol .2021 .DOI: 10.1007/s11604-021-01097-6.