Cardiac Echinococcosis: A Multimodality Approach

Joaquin Berarducci MD¹, Javier Ivan Armenta-Moreno MD¹, Abel Mauricio Garcia-Cardenas MD¹, Jose Carlos Armendáriz-Ferrari MD², Nilda Espinola-Zavaleta MD, PhD, FESC¹,³*

1 Department of Nuclear Cardiology. National Institute of Cardiology Ignacio Chavez, Mexico City, Mexico

2 Department of Clinical Cardiology and Echocardiography, Hospital Nacional Hipolito Unanue, Lima, Peru.

3 Department of Echocardiography. ABC Medical Center I.A.P., Mexico City, Mexico

Running title: Cardiac echinococcosis

Funding: None.

Disclosures: None.

Conflicts of Interest: None.

*Address for correspondence:

Nilda Espinola-Zavaleta

National Institute of Cardiology Ignacio Chavez

Juan Badiano Nº 1, Colonia Seccion XVI,

Tlalpan, P.C. 14030, Mexico City, Mexico

Email: niesza2001@hotmail.com

Telephone number: +52 5555063039

© The Author(s) 2021. Published by Oxford University Press on behalf of the European Society of Cardiology. This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://creativecommons.org/licenses/by-nc/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact journals.permissions@oup.com
Acknowledgements: none

Consent Statement: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.
We present the case of a 48-year-old male who presented to the emergency department with palpitations and drowsiness. Vital signs: BP 80/50 mmHg, HR 112 bpm, 02 saturation 92% on RA. He was diagnosed with sustained ventricular tachycardia and was promptly cardioverted (Panel A). The patient underwent a multi-modality diagnostic assessment, the final diagnosis of cardiac echinococcosis was made, and the patient underwent surgical treatment. In the follow up, the patient is stable receiving medical treatment. No new arrhythmic episode was recorded during the post-surgical follow up, thus the patient wasn't considered a candidate for an intracardiac defibrillator.

The objective of this Flashlight is to showcase the imaging findings of this exceptionally rare disease. Bidimensional and color Doppler transthoracic echocardiography apical four-chamber view (Panel B), showed mild tricuspid regurgitation (arrow), and a heterogeneous mass that occupies around 50% of the right ventricular cavity (yellow arrows) and expels the left ventricle compromising its size. Contrasted computed tomography (CT) (Panel C, rotated to match the echocardiographic view), a well delineated, giant rounded echogenic mass that infiltrates the right ventricle (arrow) with compression of the interventricular septum to the left and occupies a great proportion of the right ventricle. CT-3D rendering of the heart before (Panel D) and after (Panel E) surgery, the mass was completely removed. Microscopic exam of the cyst with hematoxylin-eosin staining (Panel F), with visualization of cyst wall composed of a fibrous laminated layer with an inner germinal layer with broad capsule and scolices surrounded by a fibrous capsule. Most patients with cardiac echinococcosis are asymptomatic. The exact prevalence of cardiac involvement in human hydatidosis is unknown, but estimations range from 0.5% to 2%. There is a long period of time between parasitic infection and clinical manifestations, hence this disease is often discovered incidentally. Echocardiography is the initial modality for the diagnosis. Computed tomography scans and magnetic resonance imaging provide a detailed characterization of the cysts. Surgical excision is performed in most cases with a high rate of complete recovery.