

Miguel A. Hernández-Hernández José L. Fernández-Torre María S. Holanda-Peña Marta Cabello

Central venous catheter malposition into pulmonary vein: an unusual cause of epileptic seizures

Received: 18 June 2015 Accepted: 18 June 2015

© Springer-Verlag Berlin Heidelberg and ESICM 2015

Electronic supplementary material The online version of this article (doi:10.1007/s00134-015-3940-9) contains supplementary material, which is available to authorized users.

M. A. Hernández-Hernández (☑) · M. S. Holanda-Peña Department of Intensive Medicine, University Hospital Marqués de Valdecilla, Avda. Valdecilla n° 25, 39008 Santander, Cantabria, Spain

e-mail: mahernandez@humv.es

Tel.: +34-942-202520

J. L. Fernández-Torre

Department of Clinical Neurophysiology, University Hospital Marqués de Valdecilla, Santander, Spain

M. Cabello

Department of Respiratory, University Hospital Marqués de Valdecilla, Santander, Spain

M. A. Hernández-Hernández \cdot J. L. Fernández-Torre \cdot M. Cabello Biomedical Research Institute (IDIVAL), Santander, Spain

J. L. Fernández-Torre

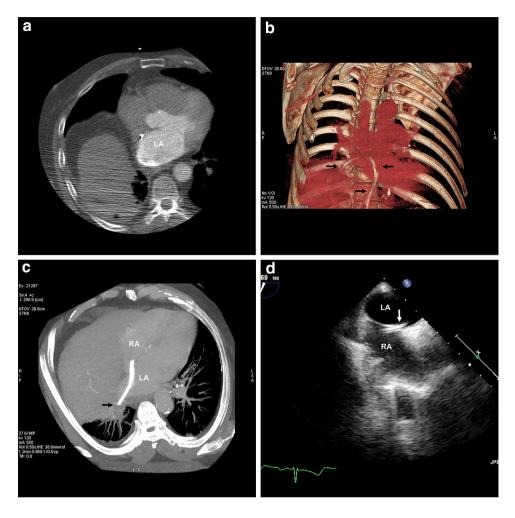
Department of Physiology and Pharmacology, University of Cantabria (UNICAN), Santander, Cantabria, Spain

A 64-year-old man was admitted to our intensive care unit with acute respiratory failure. A 60-cm femoral central venous catheter (CVC) was inserted to avoid laying the patient down. A right lower atelectasis was seen on a chest X-ray, but the position of the catheter tip was not correctly verified. Twenty-four hours later, he had a seizure. A brain computed tomography (CT) angiography was performed. Intravenous contrast was injected through the femoral catheter and appeared directly in the left atrium (LA) (Fig. 1a). A thoracic CT showed an anomalous bend of the CVC (Fig. 1b) with the tip in the right lower pulmonary vein (Fig. 1c). Transesophageal echocardiography confirmed the entry of the catheter into the LA through the foramen ovale (Fig. 1d) with a thrombus attached to it and floating inside (Video 1). Anticoagulation was started and a new CT scan showed an ischemic stroke.

Catheter malposition is reported to occur in 10–30 %. CVC into the left side of the heart through the foramen ovale is an exceptional complication and secondary cerebral thromboembolism has been described only related to pacemaker lead misplacement. Catheter malposition should be suspected if neurological symptoms appear after insertion and

Published online: 04 July 2015

Fig. 1 a CT angiography with contrast evident in the left atrium (*LA*) immediately after intravenous injection. b 3D thoracic CT reconstruction revealing an anomalous bend of the catheter (*arrows*). c Oblique thoracic CT reconstruction showing the CVC crossing from the right atrium (RA) to the LA with the tip located in the right lower pulmonary vein (*arrow*). d Transesophageal echocardiography disclosing the catheter entry through the foramen ovale (*arrow*)



CVC tip position should be verified to avoid serious events.

Conflicts of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.