Sixty-four-slice computed tomography for the detection of multiple intra-thoracic thrombi in Trousseau syndrome

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A 57-year-old man was referred to our intensive care unit 48 h after the onset of an anterior ST-elevation myocardial infarction. Reports of previous hospitalization revealed that he was treated for pulmonary adenocarcinoma complicated with pulmonary embolism. He received chronically fluindione, and INR were constantly between 2 and 3.

The ECG showed sinus rhythm and Q-waves with no persistent ST elevation in anterior leads. Echocardiography visualized a large anterior akinesia without mural thrombus, and ejection fraction was 40%.

To complete work up, a 64-slice cardiac computed tomography was performed to precise coronary artery lesions. There was no lesion in right coronary artery and left circumflex. The left anterior descending artery was patent, but a large thrombus was observed in its proximal segment.

With the same acquisition, multi-slice computed tomography (MSCT) showed multiple thrombi in left and right ventricles (Panel B), left atrium appendage (Panel D), and pulmonary arteries (Panel B).

During hospitalization, the patient presented a deep right arm venous thrombosis.

Our case illustrates multiple venous and arterial thrombotic localizations in a patient suffering from a severe form of Trousseau syndrome (TS). The TS was first described in 1865. Some tumours, especially adenocarcinomas of the lung and the pancreas, are associated with hypercoagulability related to prothrombotic factors secreted by these tumours. On a pathophysiological point of view, TS is poorly understood, but high levels of tissue factors are generally associated. As the patient presented recurrent thrombosis with vitamine K antagonist, he was definitively treated with low-molecular-weight heparin.

In our case, MSCT had a better accuracy than echocardiography to visualize intra-ventricular mural thrombus. Two-dimensional echocardiography is routinely used in clinical practice to detect left ventricular thrombus. However, problem of the near-field artefact is an important drawback of 2-D echocardiography in the evaluation of left ventricular apical thrombi.

MSCT could be a tool to detect intraventricular thrombi, especially in patients with poor echogenecity. Left ventricle should be systematically analysed in order to detect thrombi in patients with history of myocardial infarction who underwent cardiac MSCT.

Panel A. Axial contrast-enhanced computed tomography showing a spiculated left lower lobe nodule.
Panel B. Cardiac multi-slice computed tomography. Four-chamber view depicting mural thrombus (arrows) in left and right ventricles (LV and RV) and thrombus (arrows) in right lower lobe segmental pulmonary artery (PA).
Panel C. Curved-MPR CT angiography showing a patent left anterior descending artery with thrombus in its proximal segment (arrow).
Panel D. Coronal oblique CT view: thrombus (arrow) in left atrial appendage (LAA).

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