Contrast echocardiography detecting a rare abnormal venous connection

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A 74-year-old female patient with a history of deep venous thrombosis of the left axillary vein, presented with an unexpected relapse of ischaemic stroke. The transoesophageal echocardiography demonstrated normal interatrial septum and pulmonary veins. During contrast infusion using a left arm venous access, we noted a simultaneous opacification of the left and right cavities (Panel B, Supplementary data online, movie 1). Contrast injection into the right arm, obtained opacification only of the right cavities (Panel A, Supplementary data online, movie 2). Another injection into the left arm allowed visualization of a massive contrast flow (Panel C arrow, Supplementary data online, movie 3) through the left upper pulmonary vein (LUPV). These findings suggested an abnormal shunting of the left arm venous flow towards the LUPV. A computed tomography scan showed an ancient occlusion of the brachiocecalic vein (Panel D arrow) and a normal superior vena cava (SVC). The venous angiography of the left arm demonstrated both the occlusion of the left innominate vein (Panel E yellow arrow), with abundant collateralization towards the right side at the neck level and through internal mammary veins, and the opacification of the LUPV through collaterals (Panel E red arrow) coming from the left subclavian vein (LSV). Given her age and the multiple neurological sequelae, no interventional treatment was proposed. Abnormal venous return of the left upper lobe into the left innominate vein has been described, usually associated with partial anomalous venous connection (PAVC). It is a rare entity, only 3% of PAVC cases. It has not yet been noted as a retrograde pressure escape valve in consequence of an acquired systemic venous obstruction.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.