Septic pseudo-aneurysm of the left main trunk in a dialysis patient

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This case report relating the association between a septic pseudo-aneurysm of the left trunk and myocardial infarction underscores the importance of early non-invasive imaging when acute myocardial infarction is associated with frank clinical or biological signs of systemic sepsis.

A 74-year-old man with a history of atrial fibrillation, chronic obstructive pulmonary disease, and hypertensive chronic kidney disease was admitted to the intensive care unit with an anterior myocardial infarction. Over the past 3 months haemodialysis was complicated by several infectious episodes with positive blood cultures for methicillin-resistant Staphylococcus aureus that were treated with appropriate antibiotherapy. On admission, physical examination revealed a blood pressure of 140/80 mmHg, temperature of 37.8°C, increased jugular venous pressure and pulmonary rales. The ECG revealed significant ST elevation in leads V1 to V6 and I-aVL. A chest radiograph showed pulmonary oedema. An echocardiogram showed left ventricular dysfunction with akinesis of the apical, anterior, septal and lateral walls, and a left ventricular ejection fraction of 40%. Results of laboratory tests disclosed rises in the levels of troponin I (40 ng/L, N, 0.1) and C-reactive protein (260 ng/L, N, 3). Blood cultures on admission were positive for the same Staphylococcus. Regarding the inflammatory context, coronary arteriography was delayed and targeted antibiotic therapy was started. Transoesophageal echocardiography revealed a voluminous echo-free cavity surrounding the left main trunk (Figure 1), with normal valves. Colour Doppler mapping revealed systolic and diastolic flows in this cavity (see Supplementary material online, video loops 1 and 2). Body CT scan showed the same cavity around the left main trunk and hepatic abscess. At day 18, coronary arteriography was performed that showed a voluminous pseudo-aneurysm of the left main trunk (Figure 2). Brain CT-scan did not reveal any vascular abnormality. The patient underwent open-heart surgery at day 20. The opening of the inflammatory tissue around the left trunk showed a purulent and necrotic cavity communicating with the arterial lumen. The aortic valve was normal. The necrotic left main trunk was excluded and coronary artery bypass grafts were performed (Figure 3). Despite intensive post-operative care, the patient died.

Pseudo-aneurysms of the left trunk have been previously described in inflammatory diseases such as Takayashu’s or Behcet’s diseases. Only one case associated with valvular endocarditis has been reported. To our knowledge, an isolated septic pseudo-aneurysm of left main trunk has never been previously described.

Recurrent catheter-related bacteraemia caused by methicillin-resistant Staphylococcus aureus may have been responsible for the coronary localization of the infection that was subsequently complicated by an acute anterior myocardial infarction.

This case vignette underscores the importance of early non-invasive imaging when acute myocardial infarction is associated with frank clinical or biological signs of systemic sepsis.

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Figure 1  Basal short axis transoesophageal 60°-plane echocardiography showing the cavity with systolic and diastolic blood flows, between the left atrium, the left atrial appendage and the left sinus of Valsalva.

Figure 2  Coronary arteriography (right anterior oblique 30°) showing opacification of the main left trunk aneurysm.

Figure 3  Surgical view showing main left trunk aneurysm (right-hand arrow), opening abscess (left-hand arrow) and ascending aorta (black arrow).

Supplementary material
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