Intensive Care Med
DOI 10.1007/s00134-016-4337-0

IMAGING IN INTENSIVE CARE MEDICINE

Kinking, thrombosis and need for re-operation in a patient with a left ventricular assist device

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A 42-year-old man was re-hospitalized by acute decompensated heart failure (HF) 4 days after discharge. Physical examination revealed a continuous machinery systolic murmur at the second right intercostal space. Transthoracic echocardiogram showed a slight pericardial effusion and no signs of valve dysfunction. A CT scan showed multiple kinks in the left ventricular assist device (LVAD) outflow graft (Fig. 1). The patient underwent reoperation. At surgery, several clots around the outflow graft and mediastinum were removed, and three kinks near the excessive long outflow graft were confirmed. We performed an uneventful LVAD replacement. He was discharged the next day from ICU and 14 days later from hospital.

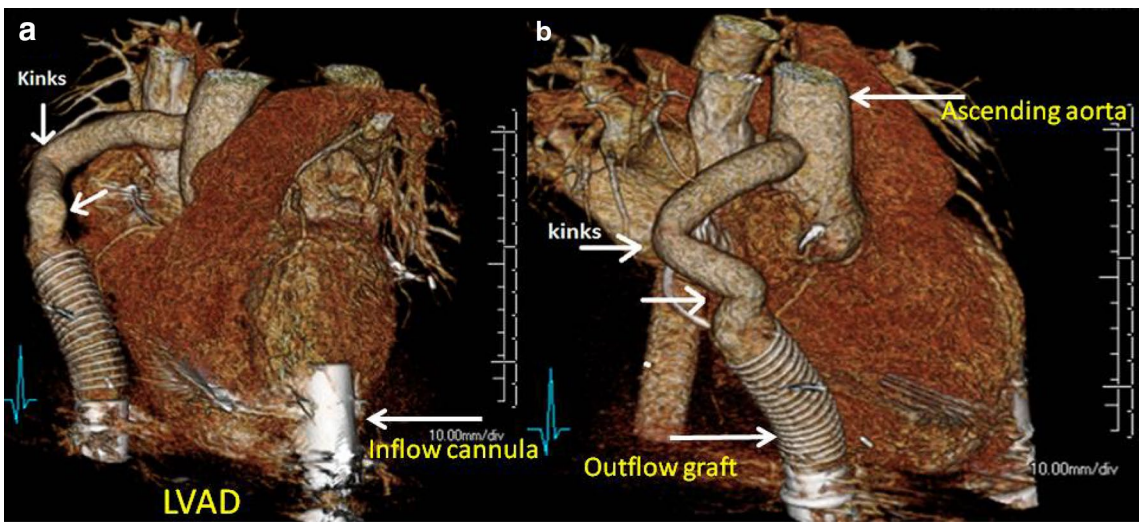

Fig. 1 CT scan of the 42-year-old man with HeartMate II left ventricular assist device (LVAD) demonstrating the multiple kinking of the outflow graft (*arrows*) due probably to the adjusted outflow graft being too long in the primary implantation. LVADs have been increasingly used for patients with advanced heart failure (HF) with consequent increase in intensive care admission due to adverse events or as initial bridge from extracorporeal membrane oxygenation (ECMO)

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Common complications seen in the first week after LVAD implantation are atrial or ventricular arrhythmias, respiratory failure, delirium, bleeding and renal failure. Outflow graft kinks could lead to LVAD pump thrombosis, dysfunction and relapse of HF, as in our case. This case shows that traditional physical examination, even in these highly technological medical environments, remains meaningful, despite dominant distracting sounds of a continuous-flow LVAD.

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Compliance with ethical standards

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

Received: 13 March 2016 Accepted: 17 March 2016
Published online: 07 April 2016