Massive intraventricular thrombus complicating extracorporeal membrane oxygenation support

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Figure 1 Transesophageal echocardiography showing a dilated left ventricle and a voluminous thrombus (asterisk) in the transgastric two-chamber view (A) and mid-short axis view (B)

A 65-year old man was admitted for cardiogenic shock complicating acute inferolateral myocardial infarction. Coronary angiography revealed occlusion of the three main arteries, and echocardiography showed massive left ventricular (LV) dysfunction without mechanical complications. Urgent coronary artery bypass grafting was performed. Implantation of a central, venoarterial, extracorporeal membrane oxygenation (ECMO) device was required because of the impossibility of weaning from extracorporeal circulation. In the early postoperative period, circulation was maintained by the laminar blood flow generated by the ECMO, with no pulsatile activity originating from the heart. Transesophageal echocardiography showed an akinetic, dilated LV without aortic valve opening in systole, and a voluminous thrombus that nearly obliterated the LV cavity in end-systole (Figure 1). The thrombus persisted despite therapeutic anticoagulation. Because no LV recovery was observed on day 6, long-term circulatory support appeared to be necessary, and a HeartMate II LV assist device (Thoratec, USA) was implanted to replace ECMO. The thrombus was removed during the procedure (Figure 2). Postoperative transesophageal echocardiography showed no subsequent thrombus formation in the LV cavity.

Figure 2 Thrombus removed during implantation procedure

Intraventricular thrombi are a classic complication of myocardial infarction, particularly if systolic dysfunction is massive. Their incidence may be increased by the unloading of cardiac chambers observed with LV assist devices.

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