

CLINICAL IMAGES

Thrombus aspiration in primary coronary intervention

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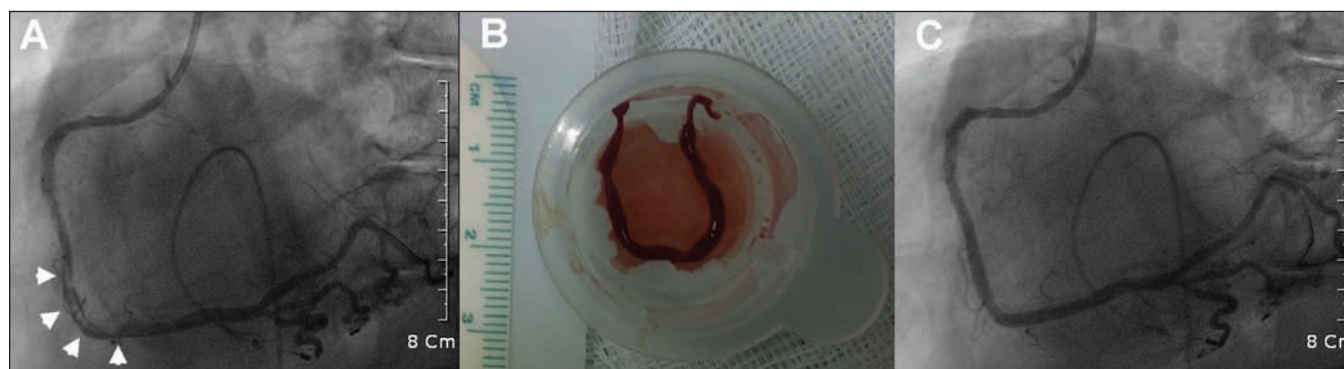


Figure 1 (A) Angiogram, showing occlusion of the right coronary artery with thrombus-containing lesions over the middle portion (arrows). (B) The aspirated thrombus, about 6 cm in length. (C) Angiogram after coronary angioplasty, showing complete reperfusion.

An 84-year-old man presented to the emergency department with severe chest pain that had begun three hours earlier. He was a heavy smoker with a history of hypertension.

On examination, his blood pressure was 120/64 mm Hg, his pulse was regular at 100 beats/min, and his respiratory rate was 20 breaths/min. The remainder of the physical examination was unremarkable. An electrocardiogram showed a sinus rhythm with ST-segment elevation in leads II, III and aVF. Blood chemistry results showed a creatine kinase (CK) level of 184 (normal 40–290) U/L, a CK MB fraction of 6 (normal < 7) U/L and a troponin I level of 0.32 (normal < 0.5) µg/L. Coronary angiography done emergently showed two-vessel disease. The right coronary artery (the infarct-related vessel) was filled with thrombus-containing lesions over the middle portion (Figure 1A), with evidence of partial reperfusion (Thrombolysis in Myocardial Infarction [TIMI] grade 2 flow). After placement of a guide wire, the QXT extraction catheter (Vascular Solutions, Inc., Minnesota, USA) was advanced into the affected area, and a large red thrombus was aspirated. The thrombus, about 6 cm in length (Figure 1B), was found to match the filling defect on the angiography. After angioplasty, angiography showed complete reperfusion (TIMI grade 3 flow) (Figure 1C). The patient was discharged from hospital six days later.

The benefit of timely reperfusion by primary coronary intervention has been confirmed in acute ST-segment elevation myocardial infarction.¹ However, embolization of remaining atherothrombotic debris can lead to microvascular obstruction and worse clinical outcomes.² Several clinical trials have shown that thrombus aspiration can be performed successfully in most patients with acute ST-segment elevation myocardial infarction, and it results in better reperfusion and clinical outcomes than achieved with conventional primary coronary intervention.^{3,4} Recent guidelines support its use in specific circumstances, such as in patients with short ischemic times and large thrombus burden.¹ Potential adverse events include endothelial damage from forceful aspiration and trauma to tortuous proximal vessels from the aspiration device.³

This article has been peer reviewed.

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