A rare indication for surgery in acute myocardial infarction: spontaneous aortic thrombus causing left main stem occlusion

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Received 6 June 2013; received in revised form 29 July 2013; accepted 31 July 2013

Keywords: Aortic • Thrombus • Left main stem • Myocardial infarction

A 52-year old man presented with acute anterolateral ST elevation myocardial infarction. At angiography, the left coronary artery was not found. Aortic root injection revealed a large filling defect (Fig. 1A). Emergency surgery identified an adherent aortic mass extending into the left coronary artery (Fig. 1B and C). The macroscopic appearance suggested a tumour (Fig. 1D); however, histology demonstrated only an organized thrombus, apparently spontaneous.

Figure 1: (A) Aortic root contrast angiogram (using a pigtail catheter). This was performed since the left coronary origin could not be located with selective catheters. A large filling defect (arrow) is seen in the aortic root, extending into the ascending aorta. (B) Transoesophageal echocardiogram performed at the time of emergency surgery. An aortic root-level short axis view is shown. An irregularly shaped mass is seen in the aortic root, extending into the left main stem origin and occluding flow into it. (C) Intraoperative photography demonstrates the location of the mass in the aortic root, where it was found to be adherent to the aortic wall. (D) Appearance of the mass immediately after its excision. Despite the gross appearance, this was later confirmed as a thrombus. The patient died 3 days postoperatively from multi-organ failure that developed as a consequence of a massive myocardial infarction sustained at the time of left main stem occlusion. Post-mortem findings demonstrated no evidence of local aortic injury, or of a thrombus or tumour elsewhere. No underlying prothrombotic condition was identified (but it is difficult to fully exclude this post mortem). Ao: ascending aorta; AoR: aortic root; AoV: aortic valve; LMS: left main stem.