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IMAGES IN CARDIOVASCULAR INTERVENTION

Percutaneous intervention for ostial stenosis of left main coronary artery after modified Bentall–Piehler procedure

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A 64-year-old man was admitted to our hospital with acute myocardial infarction (AMI). He had undergone a modified Bentall procedure with prosthetic aortic valve replacement (Carbomedics Carbo-Seal®, LivaNova, London, UK; 25 mm) and Piehler operation with graft (Gelweave™, Vascutek Ltd, Glasgow Scotland; 8 mm) for acute aortic dissection (Stanford A) at age 53 years. Coronary angiography (CAG) showed post-anastomotic left main (LM) ostial stenosis (Fig. 1a). In view of the high risk of a re-operation in AMI, we performed percutaneous coronary intervention (PCI). Intravascular ultrasonography revealed a fibrous plaque covering the entire circumference of the native vessel, and the artificial graft could not be sufficiently visualized. We placed a 3.5 × 14 mm BMX-J® stent (Cordis, Tokyo, Japan) (Fig. 1b–d) and post-dilated the graft lesion using a 6.0 × 15 mm NC Emerge™ balloon catheter (Boston Scientific, Marlborough, MA), both inflated to the rated pressure (Fig. 1e), resulting in a thrombolysis in myocardial infarction grade 3 flow (Fig. 1f). The patient was discharged seven days after PCI. A follow-up CAG after 3 months showed no re-stenosis. One year post-PCI, the patient was asymptomatic.

It is difficult to estimate the true complication rate of the Bentall–Piehler procedure, because most case reports have reported iatrogenic LM stenoses. Various causes of coronary stenosis are discussed. The mobilization of the coronary vessels during the Bentall–Piehler operation can lead to their injury. The gelatin–resorcin–formalin glue used in coronary hemorrhage can cause a fibrous reaction that results in extrinsic compression [1]. While coronary artery bypass grafting (CABG) is the treatment of choice for LM stenosis, PCI was performed in this patient because of AMI. PCI for LM stenosis after the Bentall–Piehler operation has already been published with good results. However, our current case describes the first patient actually surviving PCI for LM stenosis after the Bentall–Piehler operation, since in the previously reported case the patient died of low cardiac output syndrome on the following day [2]. We will continue the long-term follow-up of this patient to assess whether PCI

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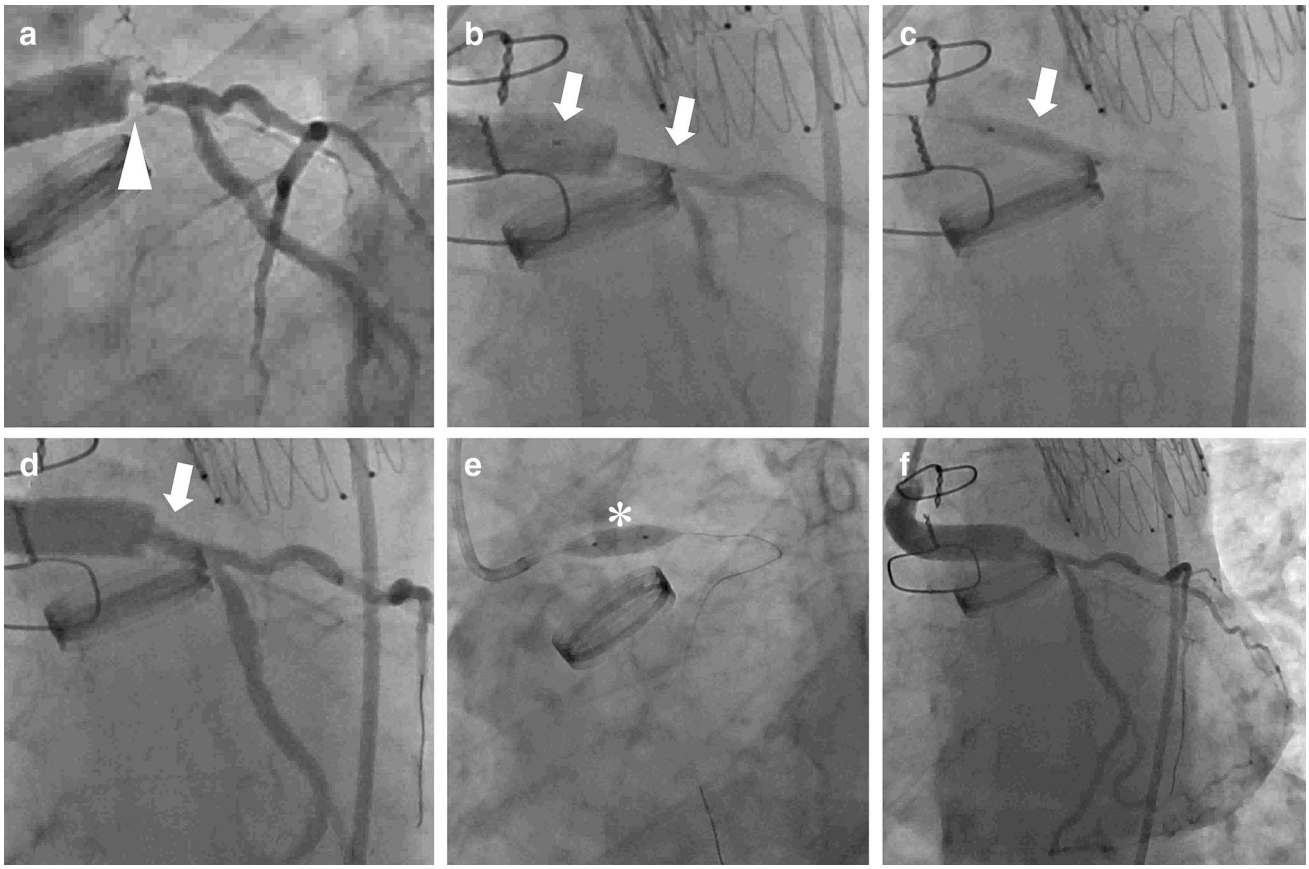

Fig. 1 **a** Coronary angiography (CAG) showing severe post-anastomotic LM stenosis (arrowhead) in a patient with acute myocardial infarction after previous Bentall–Piehler procedure. **b–d** Percutaneous coronary intervention for LM stenosis. CAG showing a 3.5×14 mm BMX-J® stent (Cordis, Tokyo, Japan; arrow). **e** CAG showing post-dilation use of a 6.0×15 mm NC Emerge™ balloon (Boston Scientific, Marlborough, MA; asterisk). **f** Resulting thrombolysis in myocardial infarction grade 3 flow

is an alternative to CABG in LM stenosis after Bentall–Piehler operation.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Informed consent The patient has provided written informed consent to publish the details of his case as described in this article. The identity of the patient has been protected.

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