

Easily removal of a malappositioned coronary stent with a guidewire

Tevfik Güneş¹, Yusuf İzzettin Alihanoglu², İhsan Alur¹, Bekir Serhat Yıldız²

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Dislodgment of a stent during or after percutaneous coronary intervention (PCI) is a rare complication with an incidence ranging from 0.32 to 8%.^[1,2] The main risk factors for stent dislodgment include extreme coronary angulations and tortuosity, diffuse long lesions, and highly calcified coronary arteries.^[1,2] Also, direct stent deployment and the inadequate predilatation or debulking of the lesion may cause stent distortion and underexpansion, increasing the risk of dislodgement.^[1,2]

Stent migration may give rise to serious clinical consequences; it may be embolized in the coronary circulation and cause cerebral or peripheral embolization. Coronary embolization may lead to coronary thrombosis, myocardial infarction, emergency coronary artery bypass graft surgery, or even death. Retrieval of a dislodged stent can be performed either percutaneously or surgically.^[2,3]

With the advanced technology of today, stent dislodgement is less common. However, an ideal catheterization laboratory should be equipped with a set of instruments for intravascular foreign body retrieval and interventional cardiologists should be familiar with these retrieval techniques^[2] in cooperation with the surgical team.

CASE REPORT

A 69-year-old man was admitted to our hospital due to the chest pain and diagnosed with inferior myocardial infarction (MI). In his medical history, a 2.75x24 mm everolimus-eluting-stent was inserted to the right coronary artery (RCA) due to stable angina a week ago in another health care center. He, then, urgently underwent a new coronary angiography. The RCA was fully occluded and previously deployed stent was malappositioned in the proximal portion (Figure 1a). During our attempt to cross the lesion, we detected that the tip of floppy guidewire (ChoICE™ Floppy - Boston

Scientific, Natick, MA, USA) was coiled up and shrunk at the distal portion of the malappositioned stent. The malappositioned stent was easily coming out as we were cautiously pulling back the guidewire to push more distally the tip of guidewire. Therefore, the dislocated stent was immediately

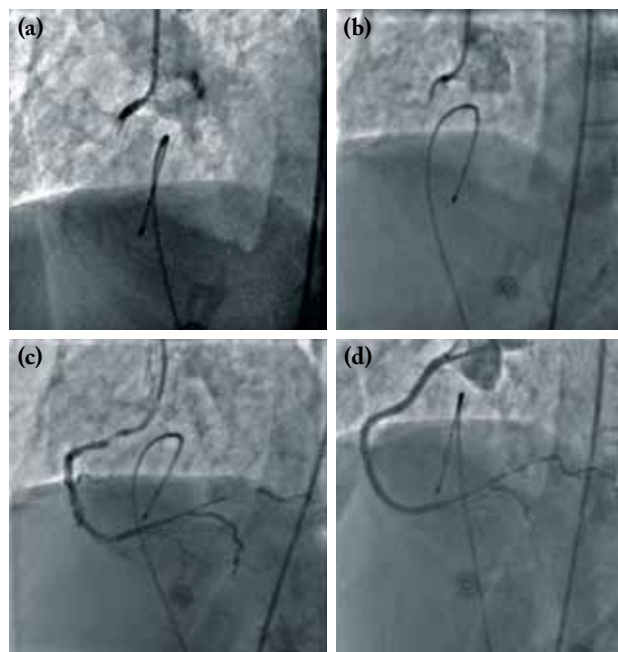


Figure 1. (a) Totally occlusion of the stent with a thrombus. (b) Native right coronary artery after the stent was spontaneously removed. (c) The view of right coronary artery after percutaneous transluminal angioplasty, before percutaneous coronary intervention. (d) The recent appearance of the right coronary artery after stenting of the dissected areas.

Departments of ¹Cardiovascular Surgery and ²Cardiology, Medical Faculty of Pamukkale University, Denizli, Turkey

Corresponding author: Tevfik Güneş, M.D. Pamukkale Üniversitesi Tıp Fakültesi Kalp ve Damar Cerrahisi Anabilim Dalı, 20070 Kınıklı, Denizli, Turkey. Tel: +90 505 - 464 42 93 e-mail: tevfik04@yahoo.com

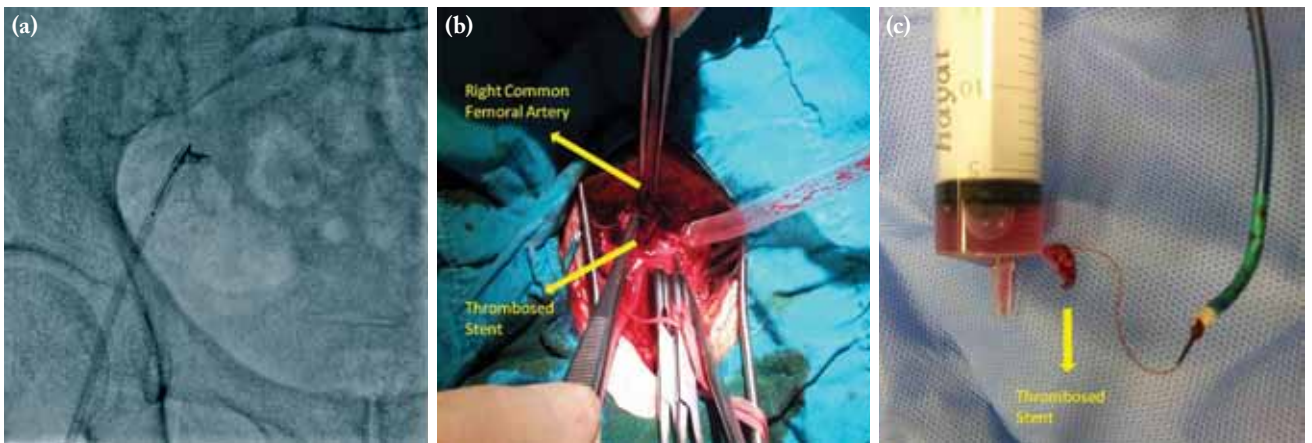


Figure 2. (a) Entrapped stent at the tip of the guidewire catheter. (b) Exploration of the right femoral artery and removal of the thrombosed stent. (c) A thrombosed stent.

removed and pulled back down. New introducer sheath was quickly placed in the other side. The RCA was passed with a new guidewire. A long dissection line was seen with spontaneous coronary flow (Figure 1b, c). After consecutive balloon predilatation with a 2.0x15 mm balloon, three everolimus-eluting-stents (2.75x24 mm, 3.0x24 mm, 3.0x28 mm, respectively) and finally one bare metal-stent (3.5x16 mm) were properly deployed. Eventually, RCA was repaired and Thrombolysis in Myocardial Infarction-3 (TIMI-3) coronary flow was completely achieved (Figure 1d). Ultimately, the right femoral artery was surgically explored and the dislocated stent removed through arteriotomy, as the stent was not able to be retrieved back into the right femoral sheath completely (Figure 2). Herein, we present an extremely rare case of PCI-related complication due to a malappositioned stent, which was totally shrunk and easily removed from the coronary system.

Declaration of conflicting interests

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