Successful Retrieval of a Coronary Stent Dislodged in the Brachial Artery by Means of Improvised Snare and Guiding Catheter

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ABSTRACT

This is a case report regarding the retrieval, by means of an improvised snare and guiding catheter, of a stent dislodged in the brachial artery during a transradial coronary intervention. A full-length guiding catheter could not be used to approach the lost stent, which was a mere 30 to 35 cm away from the sheath insertion site at the radial artery, and a commercial snare was not available at the time. Thus, we had to improvise a shortened guiding catheter and a snare, which was formed by folding an angioplasty Whisper guide wire (Abbott Laboratories, Abbott Park, IL) and was used successfully to snare the stent and retrieve it.

KEYWORDS: Percutaneous coronary intervention, transradial, stent, dislodgement, complication

A 65-year-old man with a history of previous percutaneous coronary intervention (PCI) with stent placement in the mid left anterior descending (LAD) artery was admitted due to a non-ST-elevation acute coronary syndrome. Diagnostic coronary angiography performed via the right radial artery through a 5-French hydrophilic sheath (Terumo Corp., Tokyo, Japan) using a Tiger II, No. 4, 5-French angiography catheter (Terumo Corp.) revealed LAD in-stent restenosis, in addition to distal de novo in-segment stenosis. We proceeded to perform PCI on both these sites. However, a 3.0 × 28-mm stent (InfiniumTM, Sahajanand Medical Technologies Pvt. Ltd., Gujarat, India) could not cross the proximal stented area to the distal nonstented segment. Following an initial attempt, stent retrieval into the 5-French guide catheter could not be accomplished. The guide and the stent were withdrawn as a unit toward

the sheath, but the procedure was complicated by stent dislodgement in the right brachial artery (Fig. 1A).

Two new wires were advanced and passed through the struts of the unexpanded stent. The two wires were then twisted proximally to trap the stent between the entangled stiff wire parts and remove it, but this attempt failed (Fig. 1B). Because no commercial snare was available at the time in our laboratory, we decided to improvise a snare by using a regular angioplasty wire (Fig. 1C). The 5-French sheath was exchanged for a 7-French one (Terumo Corp.). A standard, full-length, guiding catheter could not be used to approach the lost stent, which was a mere 30 to 35 cm away from the sheath insertion site at the radial artery (using a standard catheter with most of its length protruding outside the insertion sheath would make the precise manipulation of the guide wire, needed to snare

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Figure 1 (A) Dislodged stent in the brachial artery. (B) Two guide wires were passed through the stent and rotated, but without result. (C) Improvised snare. (D) Improvised shortened guiding catheter. (E) Snared stent being pulled back into the insertion sheath. (F) Stent retrieved in the sheath (circle).

the stent, extremely difficult to perform). Thus, we had to improvise a shortened guiding catheter: a 7-French multipurpose guiding catheter was cut with a scalpel, ~30 cm from its distal end. Then, a standard 6-French sheath was cut, approximately 3 cm from the hub. The 6-French sheath dilator was then placed into the shortened sheath through the hub. The sheath was advanced over the cut end of the catheter with a firm friction fit, with the protruding part of the dilator placed inside the guide. The dilator was then removed and a new shortened (~30 cm in length) guide formed (Fig. 1D). An 8-French sheath dilator was gently introduced into the distal end of the guiding catheter to slightly enlarge its end orifice to facilitate stent withdrawal. A snare was formed by folding a 150-cm long angioplasty Whisper guide wire (Abbott Laboratories, Abbott Park, IL; Fig. 1C). It was introduced into the shortened 7-French guiding catheter and advanced into the brachial artery near the stent. One end of the wire was pulled while the other end was slightly advanced to position the sharp point of the tight fold inside the catheter, so as not to injure the vessel wall. By manipulating the distal ends of the wire, the loop that emerged snared the free stent successfully (Fig. 1E), which was then trapped into the enlarged, funnel-like end orifice of the catheter. The stent was thus withdrawn into the insertion sheath (Fig. 1F) and removed by pulling the guiding catheter, the snare, and the sheath, as a unit, from the radial artery.

Percutaneous stent retrieval can be successfully achieved using several techniques including a small-balloon technique, a double-wire technique, or a loop snare,¹ usually performed via the femoral artery approach.² There have been several previous case reports of dislodged stents that were successfully retrieved from the coronary tree, following a transradial approach³; however, we are not aware of any reports on transradial retrieval of peripherally dislodged stents using improvised snares. It should be underscored that use of commercially available snare systems is always preferable to retrieve lost stents or other material; still, on such occasions that no commercial snare is available, the present report highlights the technical feasibility of removing a peripherally dislodged stent using improvised equipment.

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