

# Removal of a Implanted Stent Which was Deformed: Case Report

## Implante Edildikten Sonra Deforme Olan Bir Stentin Geri Alınması

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**ABSTRACT** In this report, an extreme complication of percutaneous coronary intervention (PCI) in which a Wiktor-i stent has been deformed during the implantation of a different stent in a distal lesion is presented. The deformed stent was successfully retrieved by deploying a second stent within the guiding catheter, trapping the proximal part of the deformed stent between the stent and endoluminal surface of the guiding catheter. This technique, being previously used in the retrieval of a fractured buddy wire segment, was also successfully used to manage the complication of our case.

**Key Words:** Complication; percutaneous transluminal coronary angioplasty; stent

**ÖZET** Koroner artere implante edilmiş olan bir Wiktor-i stentin, distal lezyon için bir başka stent ilerletilirken deforme olduğu ve daha sonra perkütan yolla başarılı bir şekilde tamamen vücut dışına alındığı nadir bir perkütan koroner girişim komplikasyonu sunduk. Deforme olan stentin kılavuz kateter içine doğru açılmış olan proksimal segmenti bir başka stent aracılığı ile guiding kateterin iç yüzeyine sıkıştırılarak yakalandı ve tüm sistem yavaşça vücut dışına alındı. Daha önce, distal segmenti koparak koroner içinde kalmış olan bir kılavuz telin vücut dışına alınmasında kullanılmış olan bu yöntem vakamızdaki komplikasyonun tedavisinde de başarılı bir şekilde kullanılmıştır.

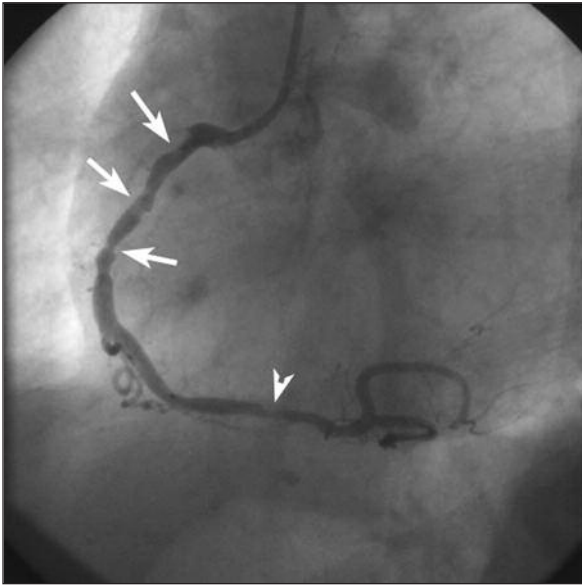
**Anahtar Kelimeler:** Komplikasyon; perkütan koroner girişim; stent

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Several operational complications during percutaneous coronary intervention (PCI) have previously been released in several case reports.<sup>1,2</sup> However, an extreme complication in which complete retrieval of a stent implanted into a coronary artery hasn't been declared in the literature we scanned. In this report, an extreme PCI complication in which a successful retrieval of a Wiktor-i stent (Medtronic, Inc.) deformed while a different stent (Eucatech AG, STS Flex, Germany) being tried to implant into a distal lesion, and its successful management in a percutaneous method are presented.

### CASE REPORT

A 50-year-old male patient was admitted to our clinic with the diagnosis of subacute inferior myocardial infarction. Because of a proceeding angi-



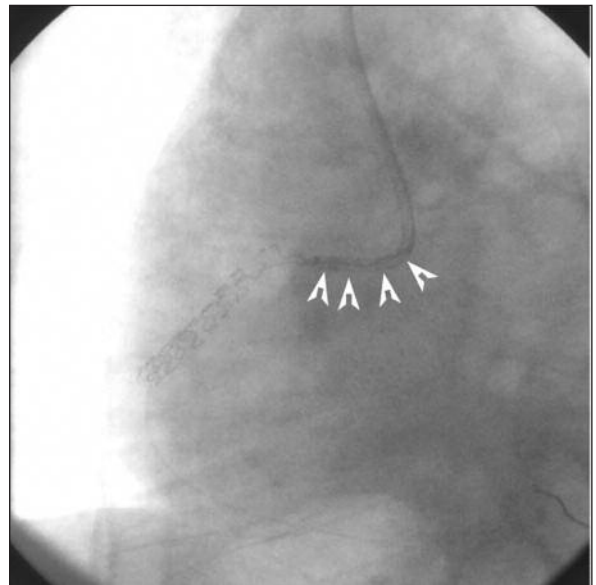
**FIGURE 1:** Arrows show the long dissection in the proximal segment of RCA and the significant lesion in the close distal of this dissection. Arrow head shows the lesion in the distal segment of RCA.



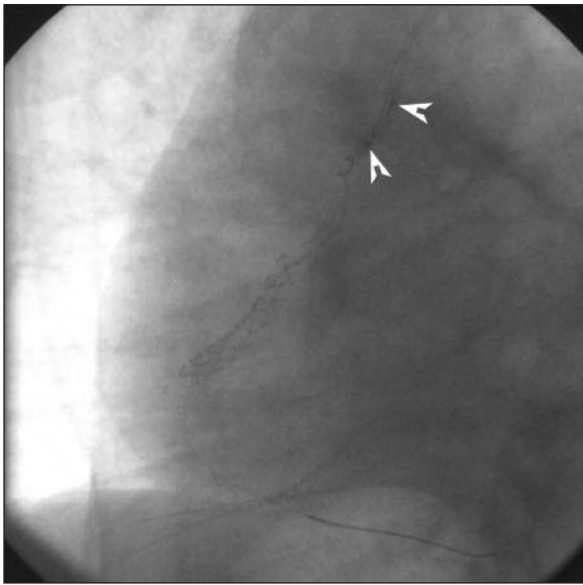
**FIGURE 2:** A Wiktor-i stent (4.0 × 30 mm) was successfully deployed into the long dissection in the proximal segment of RCA and the significant lesion in the close distal of this dissection.

na, his coronary angiography (CAG) was performed and PCI was planned. At first, a 4.0 × 30 mm Wiktor-*i* stent (Medtronic, Inc., Minneapolis, MN) was successfully deployed into the long dissection in the proximal segment of right coronary artery (RCA) and the significant lesion in the close distal of this dissection (Figure 1, Figure 2). Later, for the lesion in the distal segment of RCA (Figure 1) another 3.5 × 8 mm stent (Eucatech AG, STS Flex, Germany) was pushed through the stent which was formerly placed, but it was caught by the proximal portion of the former stent and could not be proceeded further. When it was required to be taken back, the proximal segment of the former stent was unwound, carried with the later stent back into the guiding catheter for about 2 cm (Figure 3), and released from the stent. Consequently, with the aim of trapping the unwound proximal part of the Wiktor-*i* stent in the guiding catheter by constricting it between interior surface of the guiding catheter and the stent, the latter stent (3.5 × 8 mm, Eucatech AG, STS Flex, Germany) was deployed into the distal part of the guiding catheter with high pressure (16 atmosphere), and monometer was fixed in this pressure (Figure 4). Afterwards, all the system with the catheter was taken back smoothly, and thus the whole stent deployed

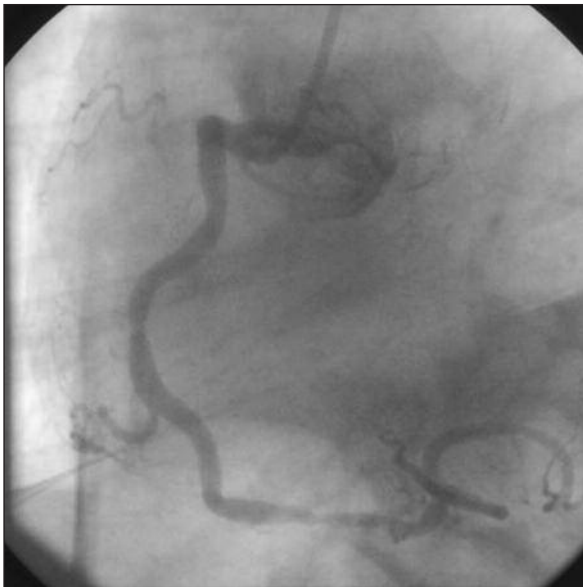
was successfully taken out thoroughly from the femoral sheath without any complication. In the control coronary angiography, since RCA was open and the flow was fairly good (Figure 5), no more intervention was planned. The patient was discharged on medical treatment without any complication.



**FIGURE 3:** Arrow heads show the proximal segment of Wiktor-i stent unwound into the guiding catheter.



**FIGURE 4:** Arrow heads indicate the stent (3.5 × 8 mm) markers which was deployed into the distal part of the guiding catheter with the aim of trapping the proximal part of Wiktor-i stent unwound into the guiding catheter.



**FIGURE 5:** RCA was open and the flow was fairly good in the control coronary angiography.

## DISCUSSION

In this case, re-sterilized Wiktor-*i* stent whose expiration date was 2000 was used because we didn't have another stent in the right size (4.0\*30 mm) at that moment. During the period when these stents were in widespread use, several complications at-

tributed to their unique coil character had been notified.<sup>3,4</sup> Since these stents which have been designed as coil-shape without any connection among their struts aren't in production whatsoever, similar complications aren't supposed to occur with the current stents in use. Thus, what is actually emphasized in this report is the success of the method used in the treatment of this complication. This method, having been proclaimed to be used in the aim of retrieval of a fractured guide wire from coronary artery<sup>1</sup>, was successfully used in the retrieving of a stent whose proximal section was unwound.

Leaving the stent which is deformed and whose proximal section is unwound into the guiding catheter in situ may result in complications such as coronary artery perforation, arterial dissection, fragment embolization, and thrombosis. In addition, chronic retention of a deformed stent in a coronary artery is likely to increase the probability of early coronary restenosis.

Conventional approaches to removal of foreign bodies lodged in a coronary artery include the use of a percutaneous snare.<sup>5</sup> However, removing a dislodged stent is technically easier than removing of a stent deformed after being implanted. An alternate conventional approach to this complication includes open surgical extraction.<sup>6,7</sup> This is the first report, to our knowledge, where stent deployment into a guiding catheter has been used to aid the removal of a deformed stent. We chose the method proposed by Prasan et al.,<sup>1</sup> who used a stent (Multi-Link Tetra) deployment within the guiding catheter to remove of a fractured buddy wire segment. Since we didn't have a Multi-Link Tetra stent in our laboratory, a STS flex stent (Eucatech AG, Germany) was used instead, and that gained the same success.

This report shows that the design of the stent is significant from the point of view of not only decreasing the risks of restenosis and/or increasing the success of the process but decreasing the risks of complications during the operation as well. Besides, we think that this report is also important because of showing the risk of complication possibility due to using the materials after expiration date by re-sterilization.

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