

Percutaneous extraction of a short, 0.038-inch guide wire retained in the right common iliac artery

Sağ iliak arterde unutulmuş kısa bir 0.038 inç kılavuz telin perkütan yolla çıkarılması

Başar Candemir, M.D.,¹ Kadir Polat, M.D.,² Alper Canbay, M.D.³

¹Department of Cardiology, Medicine Faculty of Ankara University, Ankara; ²Department of Cardiology, Kavaklıdere Umut Hospital, Ankara; ³Department of Cardiology, Ankara Numune Training and Research Hospital, Ankara

Percutaneous extraction of intravascular foreign bodies with the help of specifically designed devices is the standard method of treatment and should be attempted in appropriate cases before any surgical approach. The majority of retrieved materials are catheter fragments localized in the superior vena cava, right side of the heart, or pulmonary artery. During diagnostic coronary angiography of a 65-year-old man, a short, 0.038-inch guide wire was identified in the right common iliac artery. It was erroneously left there during arterial monitoring performed at another center. The guide wire was successfully removed percutaneously using a combination of "wire-balloon" technique without any available specifically designed device.

Key words: Device removal/instrumentation/methods; foreign bodies; heart catheterization.

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In this case report, we presented extraction of an iatrogenically placed short guide wire from the right common iliac artery.

CASE REPORT

A 65-year-old man was referred for diagnostic coronary angiography after a subacute inferior myocardial infarction. The patient was taken to the catheterization laboratory in fasting state and an 11-cm long 6F sheath (Avanti Sheath Introducer, Cordis, Miami,

İntravasküler yabancı cisimlerin özel olarak tasarlanmış aletlerle perkütan yolla çıkarılması standart tedavi yöntemidir ve cerrahi seçenek öncesinde uygun olan her olguda denemelidir. Çıkarılan materyallerin büyük çoğunluğu, superior vena cava, sağ kalp boşlukları veya pulmoner arterde kalan kateter parçalarıdır. Altmış beş yaşında bir erkek hastaya yapılan tanısal koroner anjiyografi sırasında, sağ ana iliak arterde kısa bir 0.038 inç kılavuz tel görüldü. Telin daha önce başka bir merkezde yapılan arteriyel monitörizasyon sırasında içerde unutulduğu öğrenildi. Kılavuz tel, perkütan yolla, özel olarak tasarlanmış bir alet olmaksızın, "tel-balon" tekniklerinin birlikte kullanımıyla başarılı bir şekilde çıkarıldı.

Anahtar sözcükler: Ekipman çıkarma/enstrümantasyon/yöntem; yabancı cisim; kalp kateterizasyonu.

USA) was inserted into the right femoral artery. During routine fluoroscopy, a short, 0.038-inch guide wire was identified, with its distal end located in the right common iliac artery. It was erroneously left there during arterial monitoring performed at another center. After the course and position of the guide wire were determined, standard angiographic and interventional techniques were utilized to place a guiding catheter in close proximity of the guide wire. In the first attempt, we used a 6F AR2 (Expo Amplatz Right Catheter, Scimed, Boston Scientific, MN, USA) guiding catheter, but it failed to capture the distal tip. Then, a 6F JR4 (Judkins Right Catheter, Boston Scientific) guiding catheter was selected. When the proximal tip of the guiding catheter became coaxial with the distal end of the guide wire, the catheter was pushed forward until the distal 1-2 centimeters of the

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Correspondence: Dr. Başar Candemir. Ankara Üniversitesi Tıp Fakültesi, Cebeci Kalp Merkezi, 06340 Cebeci, Ankara, Turkey. Tel: +90 312 - 310 33 33 / 2523 Fax: +90 312 - 312 52 51 e-mail: basarcandemir@yahoo.com

guide wire entered the lumen (Fig. 1a). Afterwards, we advanced a 0.014-inch floppy guide wire (Eagle PTCA Guidewire, Umbra Medical Corp., Florida, USA) through the JR4 guiding catheter until it passed by the foreign guide wire. A balloon catheter (Viva 2.0x20 mm PTCA Dilatation Catheter, Boston Scientific) was placed at the level of the guide wire and was inflated to 8 atm. Thus, we managed to entrap and immobilize the distal tip (Fig. 1b). Finally, the guide wire was successfully pulled out through the sheath under fluoroscopy, together with all the equipment used. We then proceeded with the standard coronary angioplasty procedure. No procedure-related complications were encountered.

DISCUSSION

Retained guide wire or catheter fragments in the circulatory system pose a great danger to the patient because of possible complications such as infection, sepsis, thrombus formation, and embolic events. Percutaneous extraction of intravascular foreign bodies using specifically designed devices is the standard method of treatment.^[1-7] In the majority of cases, catheter fragments are generally retrieved from the superior vena cava, right side of the heart, or pulmonary artery.^[4] Intravascular foreign bodies have been reported to be percutaneously extracted using snare loops, helical baskets, tip deflecting wires, balloon catheters, or grasping forceps with different success rates.^[8-12] Of these, the forceps are generally very traumatic because of their rigid structure and inherent difficulties during introduction and advancement.^[9-11] Sheaths and catheters are also not used frequently because of their oversize. Basket devices, on the other hand, are very frequently used. A recent study on the use of the Dormia basket in 26 cases reported a success rate of 96% with no acute or long-term complications.^[13] However, these devices also have some frustrating limitations. Since they cannot be guided, their manipulation is very difficult especially in larger caliber vessels such as the venae cavae.^[11] Of all, the most commonly utilized technique, which was first described by Curry^[3] in 1969, involves utilization of a snare loop wire. Many variations of this technique have been developed based on different shape and nature of the foreign bodies.^[1-6] Although it is the most commonly used device and is still considered to be the safest, this procedure is often difficult and consumes considerable time.^[1,3,4] The attempt to extract a foreign body using a snare loop might fail if the foreign body is located within the cardiac chambers. It must also be kept in mind that, no matter

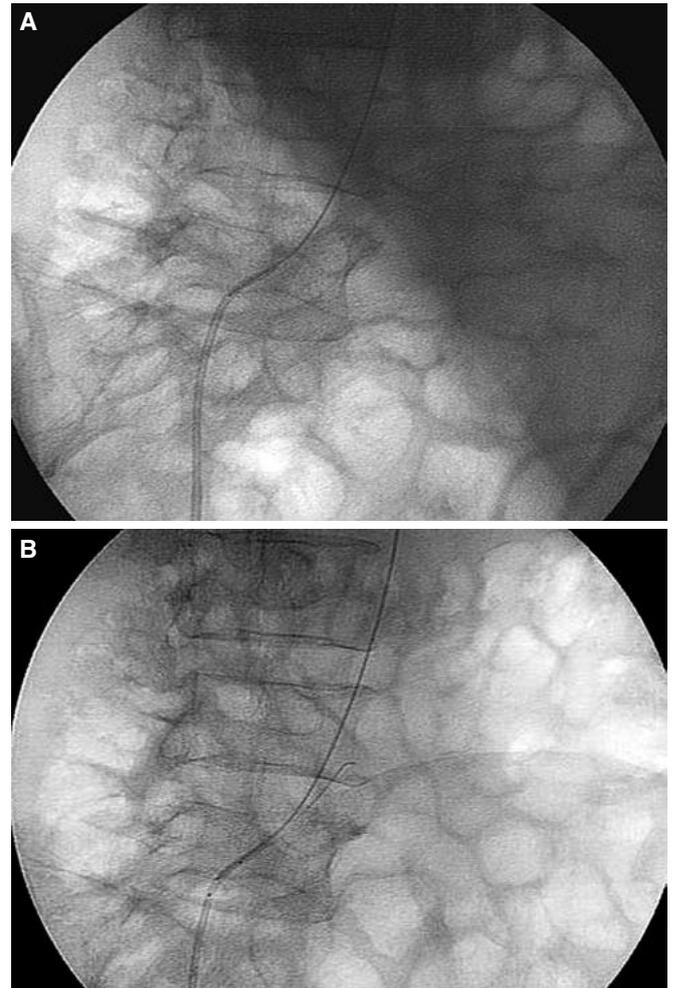


Figure 1. (A) The distal tip of the guide wire is engaged and caught by the FL4 guiding catheter. (B) The guide wire is securely immobilized after the inflation of the PTCA balloon and is ready for extraction.

which device is selected for retrieval, all those classic techniques will usually fail whenever there is no free end to loop over.

We usually choose snare loops in the first attempt. However, when there is no specific tool designed for the retrieval procedure, the interventionalist would face the dilemma whether to send the patient to a more risky and traumatic surgical extraction or to try something else using the available equipment providing that the status of the patient is appropriate.

We think that, although we were a bit lucky, our “wire-balloon” technique deserves a try in any similar situation described above. A very similar technique was reported to have been successful in a case in which all the initial attempts with a snare loop failed.^[14]

In conclusion, percutaneous extraction procedures for foreign bodies within the circulatory system are quite safe and relatively simple in comparison to sur-

gical options. They should always be attempted preferably with or even without a specifically designed extraction device before alerting the surgical team. We believe that this rational and simple “wire-balloon” technique performed without any dedicated equipment can be easily and safely attempted in most of the cases with minimal risk.

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