

Radial Retrieval of Twisted Diagnosis Catheter Using Mother in Child Technique

Ait Mokhtar Omar*

Place du 1er Mai, CHU Mustapha, Algiers, Algeria.

Abstract

Coronary angiography and percutaneous coronary intervention (PCI) over the radial approach are becoming more frequent and are recommended by the European Society of Cardiology. The radial approach leads to reduce cost because unable ambulatory angiography and less bleeding especially in elderly who are at high risk of bleeding complication, in this population with high frequency of tortuous access routes, pronounced catheter manipulation may structurally damage the catheter shaft and facilitate twisting and bending. We present case where a twisted coronary catheter became stuck in the radial artery and describe an original percutaneous retrieval technique using mother in child technique.

Keywords: Coronary angiography; Radial access; Coronary angiography complication

Introduction

Coronary angiography and percutaneous coronary intervention (PCI) over the radial approach are becoming more frequent and are recommended by the European Society of Cardiology [1]. The radial approach leads to reduce cost because unable ambulatory angiography and less bleeding especially in elderly who are at high risk of bleeding complication [2], in this population with high frequency of tortuous access routes, pronounced catheter manipulation may structurally damage the catheter shaft and facilitate twisting and bending.

Case Description

A 76 years old man was referred to our institution for stable angina, he was smoker and diabetic. Stress echocardiography showed extended anterior ischemia. We performed coronary angiography over right radial access using 6 French sheath. We used 5 french Judkins Right catheter (JR 3.5 Cordis) to catheterize right coronary artery. After Pronounced catheter manipulation because tortuouse subclavian artery, catheter was twisted and looped at humeral level. We tried to remove twist and knot by passing 0.035 inch J guide wire (Boston Scientific) then a stiff 0.014 guide wire (Progress 200XT Abbott), both wires failed to cross knot despite use of balloon support and catheter counter clockwise torque (Figure 1).

We hypothesized that external support may remove knot, we therefore used mother in child technique to extract catheter. We cut the catheter and used 6 French JR 3.5 guiding catheter and put it in the catheter, the problem is that the guiding catheter is longer than twisted catheter and when we pushed the guiding catheter, the twisted catheter advanced and we were not able to fixe catheter because it's extremity was entirely into the guiding catheter, in order to fix it we introduced a balloon (2.5 X 20 mm) in catheter and inflated at 18 atmospheres, this served as extension of catheter. We pushed the guiding catheter by exerting clockwise and counter clockwise torque and fixed catheter by balloon traction, this enabled pull back of catheter in the guiding catheter and retrieval of catheter (Figures 2 and 3).

Discussion

Catheter twist is frequent and in the most cases easily managed by

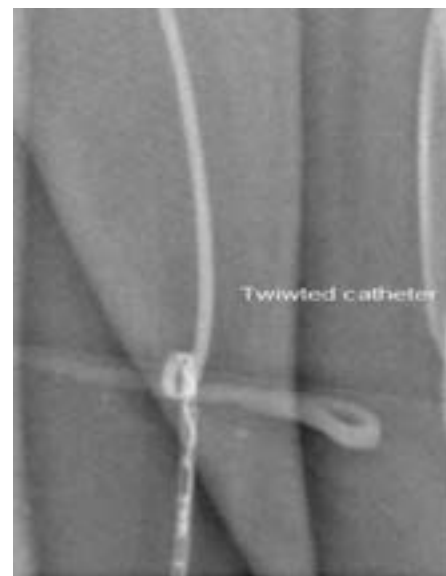


Figure 1: Twisted catheter.

introducing guide wire and torque [3], however when it is associated with looping it's difficult to retrieve the catheter over the radial sheath, because the small diameter of this artery which is smaller than loop diameter, the usual technique is to snare the catheter by femoral access and retrieve the catheter [4], the other solution is vascular surgery, these techniques are more invasive than our technique which don't necessitate other arterial access. When radial access is used and is less invasive.

*Corresponding author: Ait Mokhtar Omar, M.D, Place du 1er Mai, CHU Mustapha, Algiers, Algeria, Tel: 00213555252845; E-mail ID: aitmokhtar1@yahoo.fr

Received November 06, 2015; Accepted November 23, 2015; Published December 30, 2015

Citation: Omar AM (2015) Radial Retrieval of Twisted Diagnosis Catheter Using Mother in Child Technique. J Thrombo Cir 1: 101. doi: [10.4172/2572-9462.1000101](https://doi.org/10.4172/2572-9462.1000101)

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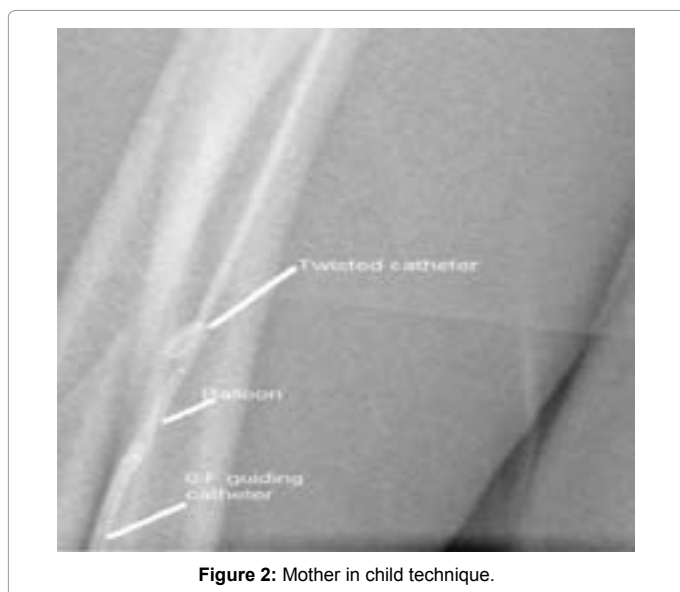


Figure 2: Mother in child technique.



Figure 3: Knot retrieval.

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