

ROLE OF NONINVASIVE SPHYGMOMANOMETER IN TRANSRADIAL CORONARY ANGIOGRAPHY COMPLICATED BY CATHETER KNOT

Cardiology

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ABSTRACT

Transradial interventions (TRI) as compared to femoral interventions are now the most popular because of accumulating evidence suggesting improved survival and reduced morbidity¹. Complications, though rare, do happen, even in very experienced hands. So it's very important for all interventional cardiologists to learn how to deal with all common and rare complication as it will improve patient's safety and prevent unwanted major surgeries. Knots in the diagnostic catheter during radial angiography are relatively rare. Here we describe a simple method of unraveling a radial knot via help of sphygmomanometer.

KEYWORDS

Radial Angiography, Knot In Catheter, Radial Complication

DISCUSSION

Most knots in the catheterization laboratory in literature have been described on the right side of the heart during Swan-Ganz pulmonary artery monitoring, superior vena cava cannulation, pacing wire insertion or right heart catheterisation.² Thejes Patel had described a knot during radial coronary angiography and its removal.³ Some of these knots have required surgical removal.⁴ Here we describe a patient who develop knot in the tiger catheter during radial angiography when we tried to engage right coronary artery after doing left main angiography . The patient was a 65-year-old female who presented with atypical angina with positive treadmill test for reversible ischemia, was scheduled for coronary angiography for further confirmation of coronary artery disease.

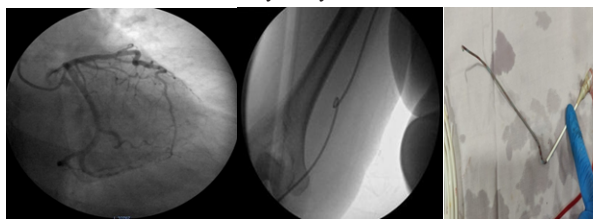


Figure 1 Radial Angiography; Figure 2 Knot In Catheter, Figure3, Removed Catheter

A right radial access was chosen and the right radial artery was cannulated with a 5 F catheter. 5 F Tiger catheter was advanced over a Teflon 032 angio wire which failed to go beyond right subclavian artery because of tortuosity of right subclavian artery for which Teflon wire switched to terumo hydrophilic wire which passed easily to aortic root and as a routine without any difficulty left main engaged with the catheter and dye given which revealed left dominant system with normal coronaries (figure1). After left angiography catheter was pulled and tried to advance to aortic root to engage RCA but catheter was not moving to reach the RCA ostium. On tracing the catheter course it was found that there was a knot in the catheter at the level of the subclavian artery (figure 2). Initially, an attempt was made to untwist the catheter but it was unsuccessful. A guide wire inserted would not go through the catheter. A Terumo wire or stiffer end of wires did not go through the catheter lumen. In spite of gentle traction on the catheter the knot did not unravel. Pulling the catheter further created severe arm pain to the patient. The catheter was rotated counterclockwise and clockwise but it was not helpful. External fixation of the distal end of the catheter manually in the brachial region was also without result due to extensive adipose tissue in the arm. Finally, a BP cuff was firmly fixed in the brachial region, distally to the knot, and inflated up to 200 mmHg while the catheter was rotated in the counter clockwise direction proximally. This maneuver unraveled the knot and allowed free catheter movement and the catheter was successfully retrieved.³(figure 3)

CONCLUSION-

We need to recognize that, since its introduction, transradial access has gained worldwide acceptance.¹ As TR approach becomes more diffusely used, complications related to this procedure, will likely be

encountered more frequently. We believe if a catheter were to become kinked and immobilized during TR catheterization, it would be logical to first attempt non-invasive maneuvers of inflating a BP cuff distal to the kink and gently manipulating the proximal catheter to unravel the kink. If this was also unsuccessful, one could attempt more invasive methods such as the femoral snare technique or the balloon retrieval technique.⁵ all these techniques are part of the everyday endovascular practice and the tools are part of the endovascular armamentarium and need to be known and applied where necessary.

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