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A Case of Dislodged, Stuck Stent; Rare Complication of Percutaneous Transluminal Coronary Angioplasty and its Successful Retrieval

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Abstract: ***50 years old male Stable ischemic heart disease with Exertional angina FC-II. Patient had history of Anterior wall Myocardial infarction 8 years before for which angioplasty was done to LAD. Patient underwent ReCAG which showed significant diagonal lesion. During PTCA to diagonal, stent got dislodged and was entrapped in Left system. Using single loop snare, the stent was retrieved and TIMI iii was established.***

Keywords: Single loop snare, Entrapped stent

1. Introduction

Coronary stent slipping away prematurely over its balloon and sticking in an inappropriate location of the lesion or entrapped in another stent is a rare but life-threatening condition [1, 2]. An interventional cardiologist should be familiar about the complication of unwanted site of stent deployment behaving like an intracoronary foreign body, and be experienced on the alternative possible treatment. Despite the presence of a guideline referring this complication, there may be more other different techniques [3].

The device retrieval is usually preferred to stent crushing and abandoning and it is highly recommended when the undeployed stent is located in the proximal part of the coronary arterial tree. However, the dislodged stent requires cautious management, as retrieval failure may ultimately lead to serious consequences such as vessel dissection, coronary perforation and systemic embolization.[4][5]

2. Case Presentation

50 years old male, known case of anterior wall myocardial infarction presented with exertional angina- FC-II. Patient had history of PTCA to Left anterior descending artery 8 years before (Proximal stent – Proximal 4x18mm stent). Patient has no other comorbidity. Re-cag done showed Diagonal Proximal significant lesion. Hence decided to do angioplasty to major diagonal. Diagonal was wired with Sion blue. Lesion was predilated with Ryurei 2.0x10mm balloon and 2.5x8 mm stent was tried tracking. However, the stent and guidewire got dislodged and stent was overhanging from left sinus (Figure 1). Patient was stable. However, the stent was along the Left main artery extending to aortic sinus. Hence decided to snare the stent. A Single loop life tech snare was used and the stent was snared (figure 2) (figure 3). TIMI iii flow was present and patient was asymptomatic.

Figure 1: Overhanging Stent into Left Sinus (Blue Arrow)

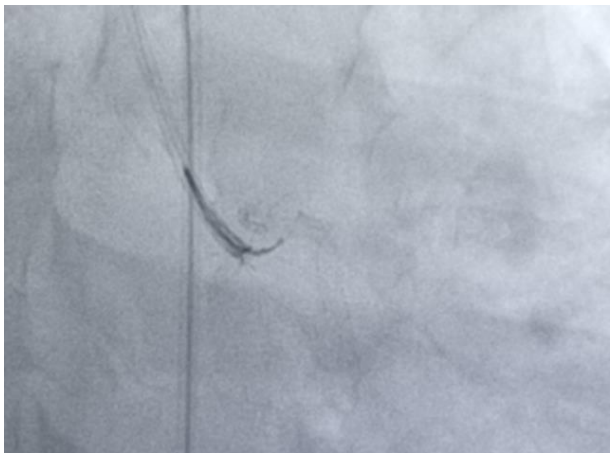

Figure 2: Overhanging stent was snared into the Guide

Figure 3: Snared stent

3. Discussion

Stent loss is a rare complication during PCI. Risk factors are proximal vessel tortuosity, lesion location on a bend, severe calcification, etc[2]. Management depends on presence or absence of guidewire inside the lost stent[6,7].

If the guidewire is in the stent, the strategy is introduction, through the stent , a low profile balloon, which is inflated and withdrawn along with the stent into the guide catheter (small balloon technique)[8].

Alternative strategy, is to implant the stent in the coronary segment where it was lost. This should not be done if the nominal stent diameter is smaller than the reference vessel diameter. In such cases of stent vessel mismatch, the lost stent is tried to advanced with a slightly inflated balloon to appropriate site where the balloon is used as a pushing device. An alternative approach is to trap the lost stent in a guide extension with a 2.0 mm semicompliant balloon positioned on a second guidewire that is advanced in the distal vessel parallel to the lost device. Furthermore all the wires are withdrawn from the vessel with this maneuver[9]. If very proximal, snaring the lost stent is helpful. Some cases guidewire twirling technique is used where a second wire is passed distal to the stent and twirled with the main guidewire and whole system is withdrawn. In case of both guidewire and stent loss, Snaring technique is adapted. Bioptome/ Forcepts technique are helpful in cush cases. Crushing the stent to the vessel wall with another stent is the last option[10]. Emergency surgery may be required in cases of hemodynamic compromise.

4. Conclusion

The management of coronary stent dislodgement is a complex yet crucial aspect of interventional cardiology. As highlighted in this case, prompt identification and appropriate intervention can prevent severe complications such as vessel dissection, coronary perforation and systemic embolization. It is essential for the interventional cardiologists to be well versed in the various techniques available for managing such situations, including snaring small balloon techniques, and stent crushing, depending on specific circumstances. This case underscores the importance of quick decision making and expertise in handling rare but potentially life- threatening complications, emphasizing the need of continuous learning and adaptation to emerging challenges in the field of interventional cardiology.

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References

[1] Iturbe JM, Abdel-Karim AR, Papayannis A, Mahmood A, Rangan BV, Banerjee S, et al. Frequency treatment, and consequences of device loss and entrapment in contemporary percutaneous interventions. J Invase Cardiol 2012; 24:215-21.
[2] Brilakis ES, Best PJ, Elesber AA, Barsness GV, Lennon RJ, Holmes DR J et al. Incidence, retrieval methods and outcomes of stent loss during percutaneous coronary intervention: A large single-center experience. Catheter cardiovasc In- Terv 2005;66(3);333-40
[3] Ellis SG, Holmes DR. Strategic approaches in coronary intervention. Baltimore: Lippincott Williams and Wilkins 2005.p.421-35.
[4] PCR-EAPCI textbook: Volume II Intervention 1. Part III chapter 24. The prevention and Management of complications during Percutaneous Coronary intervention. PCR-EAPCI Textbook: Volume II intervention 1. 2012.
[5] Ping pong snaring of a totally dislodged stent across left main ostium: All is not lost Attilio Restivo MD, Andre Buono MD.
[6] Malik S.A., Brilakis S., Pompili V., et al. Lost and found: coronary stent retrieval and review of literature. Catheter cardiovasc intervention 2018; 92: 50-53.
[7] De Palma R., Roguelov C., Aminian A., et al. The prevention and management of complications during percutaneous coronary intervention'. In: Wijns W., Serruys P. W., Vahanian A., et al., Eds. The PCR-EAPCI Textbook: Percutaneous interventional cardiovascular Medicine May 2012.
[8] Eggebracht H., Haude M., Von Birgelen C., et al. "Non surgical retrieval of emboized coronary stents'. Catheter cardiovasc Interv 2000; 51:432-440.
[9] The innovative guide extension catheter trapping technique to retrieve a lost stent from a coronary artery. Stefano Righetti, Simone Tresoldi, Ivan calchera, Carlos Enrique Alvarenga and Pietro Vandoni. J Am Coll Cardiol Case Rep. 2022 Apr, 4(7) 411-414
[10] Coronary stent loss outcomes and their management. Chetana Krishnegowda., Rajith K S, Sachin Rao T, Department of cardiology, Sri Jayadeva institute of cardiovascular sciences and research, Karnataka, India.