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Research Highlight

A new technique focusing on retrograde wire externalization in recanalization of coronary chronic total occlusion

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Active greeting technique (AGT) is a new technique that facilitates retrograde wire externalization in recanalization of coronary chronic total occlusion (CTO) lesions published by Pro. Ge [1]. This technique provides an active capture system that assists CTO retrograde wire externalization and improves procedural quality.

CTO is best considered "the final frontier in contemporary percutaneous coronary intervention (PCI) therapy" [2]. The authors appropriately summarize the current state and challenges of PCI for CTO lesions. With the aid of emerging devices and techniques, CTO-PCI has become an often performed interventional procedure and evidence of the benefits from CTO-PCI is accumulating. However, there still remains many technical obstacles to overcome in this special field of interventional cardiology.

In particular, the author focuses on the precise topic of "retrograde wire externalization" during CTO-PCI and explains the conception of AGT. During retrograde CTO-PCI, successful retrograde wire crossing is often synonymous to procedural success. With success of retrograde wire crossing achieved, retrograde wire externalization and its complications are often overlooked. Hence, the author presents a solution for the last stretch of a successful CTO-PCI.

The paper provides a comprehensive review regarding the current methods of retrograde wire externalization. In the past, the primary option for retrograde wire externalization is the direct advancement of retrograde wire. However, this method is more opportunistic than methodical, and is often inefficient, especially with a non-coaxial antegrade guiding catheter. The inefficiency of direct retrograde wire advancement externalization often leads to prolonged procedural time, increase contrast consumption, and increased radiation exposure for the patient. The authors also discussed other methods, such as the deployment of microsnare system [3] and Guideliner™/Guidezilla™ reverse controlled antegrade or retrograde subintimal tracking (CART) technique [4,5]. As per the microsnare system or homemade trapping system [6], the technique rely on some specialty devices that are not readily available in most PCI centers.

The conception of the AGT is based on the ever widening role of the mother-and-child catheters which are routinely used in PCI procedures. Base on intervention principles, the authors proposed that instead of capturing the retrograde wire for externalization in the vastness of the aorta, it would be easier to capture the retrograde wire in the relative narrow space inside the coronary artery. Only with a mother-and-child catheter can we successfully greet the retrograde wire inside the coronary artery. The AGT focuses on greeting the retrograde wire, no matter which techniques were employed to achieve retrograde wire crossing (reverse CART or retrograde wire crossing) and no matter what kind of mother-and-child catheters are available.

Specifically, the authors summarizes detailed procedures of AGT and highlighted steps that require additional operator considerations. In short, the core of AGT is to prepare an antegrade mother-and–child catheter, advance the child catheter to a relative narrow lumen space in the coronary artery, and deliberately greet the retrograde wire for externalization after successful retrograde wire crossing. By evaluating the procedural outcome and complications in a cohort consisting of 111 cases, the authors illustrated that the AGT as a feasible and safe technique for retrograde wire externalization. Meanwhile, the authors advise the use of 4F or 5F catheters as a suitable choice in the scenario of tortuous and/or small artery. Although the usage rate of 4F/5F inner catheters was not particularly high in the cohort, the outcome goes to show that the AGT is effectively compatible with a variety of different mother-and-child catheter.

In summary, the AGT provides a highly efficient and practical solution for retrograde wire externalization.

Conflict of interest

The author declares that he has no conflict of interest.

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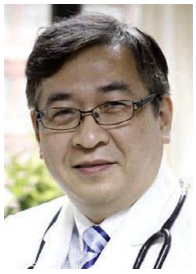

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