

Should Re-entry Devices be Always Available When Treating Chronic Total Occlusion?

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If that's a question, then my answer is yes. Before explaining my reasons to say yes let us review what is the incidence of re-entry devices use to treat Chronic Total Occlusion (CTO). Technological advances and new devices have contributed to overcome the absence of re-entry after subintimal crossing of the occlusion in the true lumen with initial high success rate and few complications [1,2].

CTOs with strong calcium components are a limiting factor for endovascular treatment. The difficulty in traversing these lesions with guidewires and catheters commonly used, is well known [1-5]. In recent years, the re-entry devices designed to prevent this obstacle have been utilized with more frequency. This includes patients with critical limb ischemia, claudication and also to facilitate the placement of devices for endovascular aneurysm repair [6-11].

What about frequency of usage of re-entry devices reported in the literature? Studies in patients with claudication, acute ischemia or occlusions where it was not possible to reenter true lumen with a traditional guidewire, was an average of 21%, and ranged between 16.5% and 27% [8,10,12]. Others report an average of 10 to 15% [7,10,13]. The success rate of using re-entry catheter ranges between 65% to 96%. Explanations for the different rates of success include: surgeon's learning curve, lengths of CTO, level of calcification, and location of the lesion (Aortic, iliac, femoral or below knee occlusions) [7,8,10,14].

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Although in case reports or large reported studies, there has been low incidence of the re-entry catheter utilization, this can be the solution for some difficult cases where we cannot achieve true lumen re-entry. Although it is not uniformly utilized in current clinical practice, we believe that the presence of these re-entry devices in the operation room could prevent failure, conversion to open surgery, or reoperations of challenging CTO cases.

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