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Editorial

To see or not to see: An eye opening optical coherence tomography☆

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The clinical problem described in this case arose from a few technical misjudgments. As difficult as it is to be a Monday morning Quarter Back or post one-day cricket analysis, this post PCI complication is further magnified when decisions were made to use a BVS without clear visibility and wires that were not clearly separated. Was this complication avoidable remains to be the question?

As the number of percutaneous coronary interventions are growing around the world, more outside US currently than in the USA that was in the lead for past 2 decades, one has to wonder whether the devices are being used appropriately.[1] There is no doubt that stents are vascular scaffolds and were approved as a therapy to treat dissections and prevent recoil. The role of stents in the absence of a dissection and an optimal result with PTCA is not clear. However, as the risk of bare metal stenting has diminished, direct stenting without pre-dilation in majority of the lesions has become customary. The first generation drug eluting stents have opened up discussions around late and very late stent thrombosis and duration of DAPT.[2] FDA recommends 12 month of DAPT. Research led to development of thin strut stents, biodegradable polymers and more potent thienopyridines that successfully lowered stent thrombosis risk. Bio-resorbable vascular scaffolds (BVS) are one such attempt to lower stent thrombosis. Idea is great. If the foreign material in the vessel is responsible for stent thrombosis, then inherently a stent that can resorb and leaves no trace ideally should have no stent thrombosis.

That brings us to the next question? What is an ideal stent. A stent that treats dissections, prevents recoil, gets endothelialized or resorbs in a reasonable time period be it 3 months–12 months. That said, an ideal lesion is a denovo lesion in a 2.5–4.0 mm vessel excluding left main coronary artery and in a non-acute setting for which the stents are approved by US FDA. As the comfort of physicians has grown, currently stents are used as part of percutaneous coronary interventions in left main, bifurcations, vein grafts to name a few of off-label indications. I recall my lawsuit in 2006 for using a Cypher drug eluting stent for a bare metal in-stent restenosis. Of course, it was dismissed after 2 years by a judge after listening to expert witnesses that it was off-label but still within the standard of practice in that region at that time.

As Asia and Europe lead the use of BVS, as professionals, we have to remind ourselves the original indications and

☆ This editorial is pertaining to the article: Managing distorted ABSORB Scaffold in left main during anomalous LMCA stenting by Pratap Chandra Rath et al., in Indian Heart Journal.

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preparation of the lesion for better outcomes.[3,4] Dr. Rath and colleagues in their article bring to attention the importance of imaging such as optical coherence tomography in BVS implantation. What one perceives as a simple procedure can have unexpected consequences either acutely or late if attention has not been paid and only depended on angiography. This is a good example of the limitation of angiography. Imaging is still under utilized in the USA with about 10–20% of all PCIs currently. Yes, the complication is avoidable, if the authors had used only one wire and not used a post-dilating balloon. However, post dilating a mal-apposed BVS is important to improve outcomes. One could argue the use of BVS in such a scenario, where the risk of stent thrombosis or in-stent restenosis is very low with a large diameter >4.0 metallic 3rd or 4th generation stents.

I applaud the authors for coming forward with an article that raises discussion about appropriate use of BVS, limitation of angiography, benefits of optical coherence tomography and ultimate successful revascularization. Thus, Medicine remains as an art and good judgment comes from bad experiences that are due to bad judgment.

Conflicts of interest

The author has none to declare.

REFERENCES

1. Bangalore S, Gupta N, Généreux P, et al. Trend in percutaneous coronary intervention volume following the COURAGE and BARI-2D trials: insight from over 8.1 million percutaneous coronary interventions. *Int J Cardiol*. 2015 Mar 15;183:6–10.
2. Pfisterer M, Brunner-La Rocca HP, Buser PT, et al. Late clinical events after clopidogrel discontinuation may limit the benefit of drug-eluting stents: an observational study of drug-eluting versus bare-metal stents. *J Am CollCardiol*. 2006 Dec 19;48:2584–2591.
3. Ormiston JA, Serruys PW, Regar E, et al. A bioabsorbableeverolimus-eluting coronary stent system for patients with single de-novo coronary artery lesions (ABSORB): a prospective open-label trial. *Lancet*. 2008 Mar 15;371:899–907.
4. Onuma Y, Serruys PW, Muramatsu T, et al. Incidence and imaging outcomes of acute scaffold disruption and late structural discontinuity after implantation of the absorb Everolimus-Eluting fully bioresorbable vascular scaffold: optical coherence tomography assessment in the ABSORB cohort B Trial (A Clinical Evaluation of the BioabsorbableEverolimus Eluting Coronary Stent System in the Treatment of Patients with De Novo Native Coronary Artery Lesions). *JACC CardiovascInterv*. 2014 Dec;7:1400–1411. http://dx.doi.org/10.1016/j.jcin.2014.06.016.