StentEnhancer

For PCI procedures
An enhanced view of the deployed stent

In patients undergoing percutaneous coronary interventions (PCI), the use of intracoronary stents results in a marked increase in acute procedural success that translates into improved clinical outcomes [1,2].

The techniques and implantation techniques for stents have improved over the last years, however there are still acute (e.g. stent thrombosis) and long-term (e.g. in stent restenosis) complications. Several studies have identified incomplete stent expansion as a risk factor for complications [3]. IntraVascular Ultrasound and Optical Coherence Tomography are optimal imaging technologies to assess incomplete stent apposition. However these technologies are not routine clinical practice in all catheterization laboratories around the world.

A novel technique called StentEnhancer enhances the deployed stent on a fluoroscopic X-ray image and as such under expansion can be easily identified.

The technique - an enhanced view within a couple of seconds

A cardiac record run is acquired with the balloon and marker dots in place inside the stented region. After loading the run into the StentEnhancer the program automatically detects the marked dots and guide wire. These are input for an image registration technique after which the stented region is visually enhanced.
Benefits in clinical practice

QUICK ASSESSMENT OF UNDER EXPANDED STENT

Within a couple of seconds StentEnhancer shows an enhanced view of the stent. Under expansion can easily be identified.

Additionally in case of bifurcation stenting the physician can easily review if the stents are placed ideally towards the ostium of the bifurcation.

ASSESSMENT OF ADJACENT STENTING

When multiple stent are placed adjacent in a vessel, StentEnhancer shows the stents side by side and also correct apposition in case of overlap of stents can be identified.
Conclusion

StentEnhancer provides an improved view of the deployed stent within seconds. It has been demonstrated previously using similar enhancement techniques that routine use leads to better medium-term angiographic and clinical outcomes [4]. Furthermore enhancement can assist in appropriate rewiring of side branches in bifurcation stenting [5].

References


