Multi-modality diagnostic assessment in interventional cardiology

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Chapter 8

Summary and Conclusions

SUMMARY AND CONCLUSIONS

The introduction of the thesis (**Chapter 1**) outlines the role of multimodality invasive assessment of coronary artery disease in interventional cardiology.

Chapter 2 focuses on the use of a combined, anatomical-functional diagnostic approach in bifurcation lesions treated with a dedicated bifurcation stent.

In **Chapter 3** the correlation between anatomic (i.e. 3D-QCA and OCT) and functional (i.e. FFR) metrics is presented, showing a superiority of 3D-QCA-derived parameters as compared to OCT on predicting haemodynamically non-significant coronary stenoses.

The co-registration of OCT and FFR using a three-dimensional roadmap is presented in **Chapter 4**, whereas In **Chapter 5**, the application of FFR-OCT co-registration demonstrates the importance of performing PCI-optimization by means of kissing balloon inflation for the treatment of bifurcation lesions using dedicated stents. For the first time, an in-vivo documentation of in-stent pressure drop is shown in **Chapter 6**, demonstrating that significant drops in FFR values across previously implanted stents are associated to neointimal hyperplasia as shown in OCT-imaging.

In **Chapter 7** an in-depth review of currently available methods of intracoronary imaging and haemodynamic assessment is performed.

The summary and conclusions of the thesis are shown in **Chapter 8**.

CONCLUSIONS

In contemporary clinical practice, multimodality invasive assessment of coronary lesions offers an invaluable insight on clinical decision-making and PCI-guidance. Intracoronary imaging and functional assessment are two different diagnostic entities that offer complementary, rather than competitive, information. The role of this integrative understanding during a heart catheterization procedure is of outmost importance to achieve optimal procedural results, particularly regarding complicated coronary anatomies. Furthermore, this holistic approach can potentially lead to outcome improvement in patients with CAD treated percutaneously.