Fractional flow reserve measurement modification with monorail pressure catheter

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A number of symptomatic patients with coronary artery disease undergo revascularization without definite evidence that particular coronary stenosis is responsible for their symptoms [1]. Currently, the borderline coronary artery stenoses are most commonly assessed by intravascular ultrasound and fractional flow reserve (FFR) alongside with quantitative coronary angiography [2]. FFR measurement, as performed by pressure wire (PW), requires its multiple removals during FFR and percutaneous coronary intervention (PCI), and results in a relatively high signal drift with loss of accuracy. The novel exchange microcatheter (RXi) was invented to assess FFR in a safer mode [3, 4].

A 61-year-old man was admitted to hospital with exertional stenocardia. The patient underwent myocardial infarction in 1988 and coronary artery bypass grafting operation in 1999. Angiography revealed total occlusion of the left anterior descending artery (LAD), as previously. In the right coronary artery (RCA) occurred disseminated, multi-segmental stenoses up to 40% with borderline stenosis of 60% in the distal portion (Fig. 1A). The aorto-marginal saphenous vein

![Figure 1. Fluoroscopic images of the right coronary artery (RCA); A. Cine image of stenosed RCA; B. Cine image of RCA and the Acist Navvus microcatheter during the measurement, and its distal part with the radiopaque marker (labeled with white arrow); C. Cine image of RCA after angioplasty with stent deployment (marked with white arrow); D. Fractional flow reserve (FFR) of distal part of RCA before stent implantation. E: FFR of distal part of RCA after stent implantation; Pa — pressure proximal to the lesion; Pd — pressure distal to the lesion; Pv — coronary venous pressure.](image)

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adenosine up to 600 µg. The infusion of adenosine bolus is
fiber optic sensor is attached 5 mm from the
diameter of 0.022” circular-shaped wire. The
crocatheter Navvus is elliptically-shaped. The
It is noteworthy, that the RXi microcatheter is
ent guide-wires (GWs), which are appropriate for
The RXi microcatheter could be used with differ
system is a new FFR technology, where ultrathin
cause complications due to this maneuver. The RXi™
time during stent implantation, eliminating the need to re-
cross the coronary artery or to disconnect the FFR
Moreover, if it is necessary to re-place the
RXi microcatheter in the vessel, there is no need for
Some doubts may arise if the larger
calculated and tortuous arteries as compared to PWs
alone, which may in some cases limit the use of RXi
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References