

Recanalization of Chronic Coronary Total Occlusions: Basic Terms of Success

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The article presents a retrospective analysis of 1256 recanalizations of chronic coronary total occlusions. Recanalizations averaged 19.0% of all elective coronary interventions. The immediate recanalization success rate for all these years averaged 88.3% including 92% in the last 4 years. The features of interventional technique in recent years are predominant application of bilateral transradial access, priority of Shinobi and Gaia coronary guidewires, retrograde access in 1,6% of cases only), frequent use of intravascular visualization during recanalization, high attention to selection of optimal size and adequate stent implantation.

Key words: chronic coronary total occlusion, recanalization, intravascular imaging, intravascular ultrasound, optical coherence tomography, coronary stenting.

20-year Experience with Intravascular Ultrasound Scanning in a Multidisciplinary Hospital

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Approximately 20-year experience with intravascular ultrasound in a multidisciplinary clinic was analyzed. 3624 intravascular ultrasounds were performed; that greatly exceeds the number of such procedures performed in any other department in the country. Coronary IVUS accounted for 83.7% out of the performed procedures, and the rest (16.3%) were IVUS procedures for other vessels including peripheral and renal vessels, abdominal aorta as well as procedures for congenital heart defects.

Key words: intravascular ultrasound, coronary stenting, intravascular visualization.

Optimal Implantation of Dedicated Bifurcation Stents for the Treatment of Coronary Bifurcation Lesions Using Intravascular Imaging: a 10-year Experience

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The treatment of coronary bifurcation lesions remains a thrilling problem of interventional cardiology. We present our experience with the treatment of this pathology using dedicated bifurcation stents, implanted under intravascular imaging control. 164 dedicated bifurcation stents of 7 types were implanted in 158 patients. 146 procedures were performed under IVUS, 9 – under OCT control. The rate of restenosis was 11.6%, with the use of DES – 4.7%. The rate of restenosis after the IVUS-controlled procedures was 8.9%, under angiographic control – 33.3%. According to the data of control angiography and telephone survey, within 8 years after the procedure the positive effect was preserved in 81% of cases.

Keywords: bifurcation lesion, coronary stenting, dedicated bifurcation stents, intravascular imaging, intravascular ultrasound, optical coherence tomography.

Clinical Issues of Optical Coherence Tomography for Coronary Diagnosis

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5-year experience of optical coherence tomography (OCT) used in elective and emergency coronary interventions was analyzed. 2638 procedures were performed at diagnostic and interventional stages. OCT is routinely used for balloon angioplasty involving drug-eluting balloons for in-stent restenosis and bioabsorbable scaffolds implantation, dynamic monitoring of the intervention results as well as for complex or angiographically uncertain cases including acute coronary syndrome. Our approaches to technical issues of the procedure with modification of certain generally accepted guidelines are presented.

Key words: optical coherence tomography, coronary stenting, intravascular visualization.

The Drug-Eluting Balloons for Coronary Arterial Restenosis: 7-Year Experience

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The article presents 7-year experience with various drug-eluting balloons for intracoronary in-stent restenosis. The drug-eluting balloons were used in 212 patients. At follow-up, the incidence of re-stenoses after drug-eluting balloons was 21.7%. Great attention is paid to compliance with technology of the balloon impact; own modified technique is proposed; the importance of intravascular visualization is shown; the long-term results of these interventions are presented.

Key words: coronary angioplasty, coronary stenting, drug-eluting balloons, in-stent restenosis, intravascular ultrasound, optical coherence tomography.

Intravascular Ultrasound Scanning for Measurement of Patent Ductus Arteriosus

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The routine experience of intravascular ultrasound scanning in patients with the patent ductus arteriosus is summarized. IVUS was performed in 56.3% of intervened patients excluding only those with small diameter PDA. 234 procedures were performed in the intervened patients and 31 procedures – at the diagnostic stage only. For the first time, 3 types of PDA structures as well as such morphological features as pulsation, oval or irregular shape were identified based on IVUS data. Ultrasound measurements of ductus arteriosus significantly exceeded angiographic measurements. The sizes and type of tools for PDA closure were selected according to the proposed algorithm based on IVUS data.

Key words: patent ductus arteriosus, intravascular ultrasound, endovascular treatment of PDA.

Immediate and Early Results of a Clinical Trial Comparing Different Strategies of Drug-Eluting Stents Implantation Under IVUS or Angiographic Guidance

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We present immediate and early (one month) results of a single-centered randomized trial “ORENBURG” comparing different strategies of drug-eluting stents implantation under IVUS and angiographic guidance. The trial comprised 1032 patients; among them, 676 were operated under IVUS guidance and 356– under angiographic guidance, with similar distribution of 6 types of “limus”-eluting stents. Immediate in-hospital results were marked by a very low incidence of MACE– 0.1% (0% in the subgroup of IVUS , 0.28% in the subgroup of angiography). Within one month after the procedure no additional adverse events were noted.

Key words: intravascular ultrasound study, coronary stenting, intravascular imaging, optical coherence tomography, angiography, drug-eluting stents.