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The present study aims to determine the incidence, characteristics, predictors, and outcomes of repeat revascularization during 5-year follow-up of the SYNTAX (Synergy Between Percutaneous Coronary Intervention With TAXUS and Cardiac Surgery) trial, revealing that repeat revascularization is not a risk-free event. Repeat revascularization rates are significantly higher after initial percutaneous coronary intervention (PCI) than after initial coronary artery bypass grafting (CABG) for complex coronary disease. Patients requiring repeat revascularization are at increased risk of periprocedural and long-term events. Predictors of patients at risk for repeat revascularization highlight the need for adequate medical treatment as secondary prevention, careful patient selection, and improvements in both PCI and CABG technologies and techniques to improve the long-term results.

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Optical coherence tomographic (OCT) imaging is used to evaluate vascular responses after stenting. Different descriptive terms have been used to describe neointimal characteristics. The authors conducted a histopathological validation study using stented human coronary arteries to identify histological features that correlate with common OCT and optical frequency-domain imaging (OFDI) terms. Nineteen cases were identified (implantation duration >30 days) in which OCT imaging or OFDI and histological findings were available. Coregistration of OCT or OFDI frames and histopathological sections was performed in 111 frames. The distribution OCT or OFDI changes consisted of 7 distinct patterns. Apart from the honeycomb pattern, all descriptive OCT or OFDI terms showed at least 2 histopathological differential diagnoses. Diagnostic accuracy was greater in restenotic specimens. This study suggests poor correlation between OCT imaging and a distinctive histological tissue characteristic. Caution is advised when interpreting OCT imaging patterns after coronary stent placement.